

## **Tackling the new crisis in making in Asian EMEs - Outside Investor Lag**

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### **Abstract**

A new financial crisis in making and a key reason for financial instability in Asia's emergent economies is ballooning corporate debt-trap due to industry life cycles, demanding an overhaul of sectoral fundamentals. Characterized by non-performance of companies, evinced as defaults, such cyclic and unpredictable declines engulf banks and subsequently, the entire economy. Alleviating such shocks demands capital and industry specific expertise, difficult to be availed timely and locally in EMEs. Despite recourses available to banks, some observations are counter-intuitive. What could hold monetary transmission to take effect in such conditions? What could explain policy stance of not pro-actively encouraging the apt foreign capital investments in favorable instances despite its evident advantages and allayed risks? What could still keep running the Debt Restructuring procedures in EMEs despite their proven insufficiency? Why is the onus of debt resolution with 'banks', rather than the 'defaulting enterprises'? I assess this situation by building a model based on *Economics of Dealer Function* as an alternative to traditional view. To dissect banks' market-making ability, I look at banks as carriers of inventories of cash and loans. I conceptually derive a parameter, 'Outside Investor Lag', and its pronounced impact on liquidity of bank-debt markets. The framework gives policy-makers a tool, much before the crisis reaches an alarming level, to know how sustainable debt is. This parameter is traditionally not considered giving rise to the said discrepancies. Identifying the right outside investor and gauging repercussions of 'Outside Investor Lag' opens doors for policy willingness to encourage free capital flows, making policy stance 'pro-active' and 'cycle-agnostic'.

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## **1. Introduction**

Financial crises do not necessarily encompass all industries or all economies. Not every financial crisis is due to burst of an unreasonably inflated bubble. The reason for a meltdown could be more fundamental: an offshoot of decline stage of an industry specific life cycle. Initially appearing to be a disparate event, it gradually engulfs banks due to non-performance of companies in the industry. Once banks are embroiled, the situation in banking sector is identical to other known financial busts characterized by bad debts and non-performing assets. This ensues steps by governments (fiscal policy), central banks (monetary policy) and commercial banks (prudent business decisions). The measures include varying interest rates and provide additional recourses to banks in case of corporate defaults (debt restructuring and transfer of company ownership to banks through equity). However, such actions, expected to revive banks, are not central to the reason behind the crisis. This is because they are meant to allay the financial manifestations of root causes, and not the root causes of the problem. Consequently, the reach of crisis is not alleviated by the said measures and the crisis persists.

With the banks being intermediaries to exchange of money for entire economy, the impact of an industry-centered downturn metastasizes to a pan-economy level. With the economy not responding to steps taken, panic grows. What follows, as a response of banks, could be even more risky. Banks block additional capital and pile Loan Loss Provisions (LLP) for loans on their balance sheets tantamount to inherent risk, consume bail-outs or public capital infusion as a fiscal treatment, ring-fence risky assets and eventually, cease lending to the afflicted industries. This also is a measure to save banks than to address the issue behind the crisis. The afflicted industry, wanting of capital to rebound, flounders for a long time causing other dependent industries to wallow along. Thus, an insidious recession slowly grips the economy.

To mitigate the dwindled confidence in the economy as an investment destination, as a monetary tool, interest rates are then lowered to spur investments. However, the spiral effect of having one industry afflicted could overpower the regained investment in others, if any. If the afflicted industry happens to produce a product or service which is an input for others, say steel or power, the chance of the former overshadowing the positives of the latter are more. Also, shortage of basic inputs may perpetuate a cost-push inflation which does not accord with an expansionary monetary policy of having interest rates lowered.

There have been studies linking monetary cycles, financial cycles, and the business cycle (Adrian, Estrella, Shin, 2010) which describe banks' lack of willingness to lend as a function of expectations of future interest rates. However, the scenario in emerging economies in present times is a little different. Owing to the fact the emerging economies are the centerpiece of effecting scaled innovations, declines are unavoidable in most of the industries. Companies or industries not keeping pace with innovations in market and customer expectations of transformation or even replacement of the current offerings rendering them obsolete, are prone to enter this stage of life cycle. A decline may also be caused due to supply shocks and an unexpected imbalance between global supply and global demand levels. The result of one or more of these is that sales start falling at an accelerating rate pushing companies towards loss of liquidity, profitability and in due course, solvency.

This recipe of a financial slowdown is witnessed widely: in EMEs, frontier markets, as well as other nations. Power industry of India, energy sector of Mexico and Steel sector in India are some examples where the industry has suffered due to structural incompetence and has pushed banks into a deep trouble of soaring non-performing loans or non-performing assets.

## **2. Literature Review and Gap Identification**

### *2.1. Emerging Market Economies*

Claessens, Kose and Terrones (2011) find that recessions not associated with financial disruption episodes, notably house price busts, tend to be shallower than ones with bubble bursts. Though not associated with financial disruption episodes are shallower, the logical sequence of the slowdown caused due to a declining industry is neither too tortuous to unwind nor too tenuous to be missed. However, surprisingly, the policy response has given little attention to revamp and overhaul the stricken sector(s) with investment capital. Governments of EMEs and frontier market economies are usually laden with deficits. This leaves little room with them to source the capital required in such cases. Igan, Kutan, and Mirzaei (2016) examine that there is a positive association between capital inflows and industry growth in EMEs. A stable stream of international capital inflows, thus, in form of FDIs 'may' be encouraged.

Economic overheating, currency appreciation, reduction in net exports and output volatility, deemed to be side effects of capital inflows, are not found to be as prominent in case of FDI as they

are in case of debt inflows. Davis (2014), through a study on 30 countries, explains that an exogenous increase in debt inflows leads to a significant increase in inflation, stock prices and credit growth and an appreciation of the exchange rate. An exogenous increase in equity-based capital inflows has almost no effect on the same variables. Thus, the macroeconomic effects of exogenous capital inflows are almost entirely due to changes in debt, not equity-based, capital inflows. Also, Igan, Kutan, and Mirzaei (2016) observe a reduction in output volatility more pronounced for equity, when compared with debt inflows.

Though we shall discuss an elaborate set of reasons to encourage FDI as we build ‘Treynor model for banks’, with the information at hand we can be assured that there are tailwinds for EMEs to bolster conduits of FDI to revive stricken industries, when needed. Yet, policy responses to international capital inflows in emerging economies do not evince keenness to capitalize opportunities for capital inflows.<sup>1</sup> This is indicated from analysis of Ghosh, Ostry and Qureshi (2016) which finds that policies are more likely to respond, and used in combination, during international capital inflow ‘surges’ than in normal times. The analysis finds that fiscal policy, by and large, is either neutral or pro-cyclical in context of capital inflows. The policy is found to be ‘reactive’ to flow surges than proactively inviting inflows to benefit from them.

What could explain this stance of EMEs policy mix of not pro-actively encouraging FDIs despite its evident advantages and academically proven allayed risks? We attempt to answer this question by building a model, alternate to the traditional view of the situation, based on The Economics of Dealer Function (Treynor (1987)). The original model was for security dealers who trade bonds or equity shares. We use the same framework to assess the interplay of life cycles of industry and financial cycles. The key feature of the approach to constantly look at banks as ‘dealers for making markets’ and continuously ask only one question: “What should be done to revive market-making ability of banks, so that the price in bank-debt markets is continuous and markets remain liquid?” The subsequent impact devolves as a pass through on to business and financial cycles.

The tactic throws light on elements which are crucial in determining prices in financial markets: the market of banks, the capital market and the market of distressed debt. It is found that some elements are assumed to be non-existent in determination of the price of money (interest rates).

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<sup>1</sup> Please note that this is different from bailing out banks or creating bad banks or Asset Management Companies (AMCs) or Asset Reconstruction Companies (ARCs). We discuss the inefficacy of these measures later.

There are stages in financial cycles of an industry where boosting external capital inflows in form of FDI (particularly Private Equity) is not only advantageous but is categorically the need. The link between these two events is evinced in capital markets rather than bank-debt market. Thus, opening gates for a directed foreign capital inflow is expected to be relatively efficacious than the using the local monetary policy toolkit to wield with the insidious downturn.

We conceptually derive and define a term 'Outside Investor Lag' and suggest the need to measure sector specific 'Outside Investor Lag' on an ongoing basis to forestall prominence of such downturns in financial cycles. Appreciating the significance of 'Outside Investor Lag' is expected to influence policy-makers to shift from a 'reactive' and 'pro-cyclical' policy response towards capital flows to a 'pro-active' and 'counter-cyclical' response when situation is ripe to encourage Foreign Direct Investment.

## *2.2. European Union Economies*

Global financial crisis ensued by recession in Europe resulted in bank nonperforming loans (NPLs) in EU to reach more than 9% of EU GDP by early 2015 (Directorate-General for Internal Policies, Economic Governance Support Unit, 2016). In this regard, some pertinent revelations from the IMF Staff Discussion Note (SDN) (Aiyar, Bergthaler, Garrido, Ilyina, Jobst, Kang, Kovtun, Liu, Monaghan, Moretti (2015)) are:

1. The distressed debt markets suffer from serious impediments.
2. The impediments are often compounded by informational and institutional deficiencies.
3. Markets for distressed debt are still underdeveloped, preventing the entry of much needed capital and expertise.
4. Banks have been slow in restructuring, disposal and write-offs of Non-performing loans.
5. Looking across economic sectors, NPL ratios are generally higher in the corporate than in the retail sector.
6. NPLs influence bank lending through three interrelated key channels—profitability, capital, and funding. Together, these factors result in 'some' combination of higher lending rates, reduced lending volumes, and increased risk aversion.

The intent of this research is to identify this 'some combination' which currently is ambiguous. The SDN makes a powerful acknowledgement that when NPLs are large and persistent, they are

unlikely to be worked off through a normal cyclical economic recovery. This leaves room open for further conceptual research which is being attempted in this paper. The framework of Economics of Dealer Function for Banks, discussed ahead in the paper, would enable us to appreciate that why monetary policy of European Central Bank (ECB) had been losing impact on pulling corporate activity out of swamp of standstill though interest rates were made all time low.

### **3. Economics of the Dealer Function for Banks**

#### *3.1. Defining a Liquid Market*

A liquid market is "one in which an individual transaction does not disrupt the continuity of the market" (Mehrling (2013)). It is a market in which one can buy and sell

- A. Quickly,
- B. In volume,
- C. Without moving the price much.

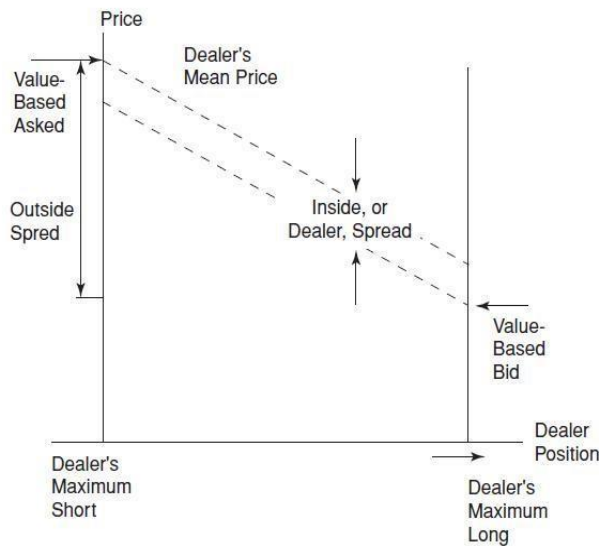
The price curve of commodity traded in a liquid market does not have air pockets or jumps with respect to time (Mehrling (2013)). We consider an example of a super-market or a local vegetable seller selling goods with no printed price: which means the seller has the privilege to flex the price. The supermarket 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 the same price. In this example, all three checkboxes of a liquid goods market are ticked.

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. 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. As the inventory in the store exhausts, inventories with the wholesalers, dealers and the manufacturer is used. Among others, a key purpose of a sound inventory management system is to keep the price stable in short run.

Though the term ‘inventory management’ 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 the 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.

Positions taken by dealers are converse to those of retail investors. The dealers cut down their inventory of cash to buy securities (grow their inventory of securities) from a retail investor who is in a ‘hurry’ to sell securities and they replenish cash inventory (cut down the inventory of securities) when a retail investor is in a ‘hurry’ to buy the same security.

The time at which these two transactions happen is likely to be different and in this interval the dealer carries the inventory. The carrying cost of this inventory is the risk taken by the dealer: risk that selling inventory of securities might fetch less cash in future than present if prices fall and the risk that selling the inventory of cash would fetch less securities in future if the prices rise. Thus, as Jack Treynor states, a dealer facilitates market liquidity (keeping the exchange of money and securities continuous in time) by inter-mediating between transactors to whom ‘time’ is important, in exchange for charging buyers a higher price than he pays sellers. Efficiency of a dealer market can, thus, be measured as the ‘time’ saved in trades due to presence of dealers.



**Figure 1: Economics of Dealer Function**

Figure 1 shows the traditional Treynor's model of the dealer function 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, 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, that is, market liquidity.

### *3.2. Treynor model – Economics of Dealer Function-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. Banks build deposit cash inventory when depositors do not wish to keep cash and build inventory of loans by lending when people/companies need liquid cash. Banks are also dealers, providing market liquidity to the bank-debt market.

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 security dealers. 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 individual 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 (borrowers) a higher price (interest) than they pay the sellers of cash (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, to observe continuity of prices (interest rates), we would need to spread our analysis over a longer period.

As stated, 'time' saved in trades due to presence of dealers is an essential aspect of efficient dealer market. On the same lines, a critical element of Fiscal and Monetary policies for banks is to ensure



that policy steps enable banks to save the ‘*time*’ needed to scale (up or down) their inventories of cash and loans. In other words, it is not just existence or profitability of a bank as a stand-alone business entity which is necessary as a policy goal. It is also incumbent to safeguard their ability to make markets between lenders and borrowers.

### *3.3. Limiting Economics of Dealer Function to Stressed Loans*

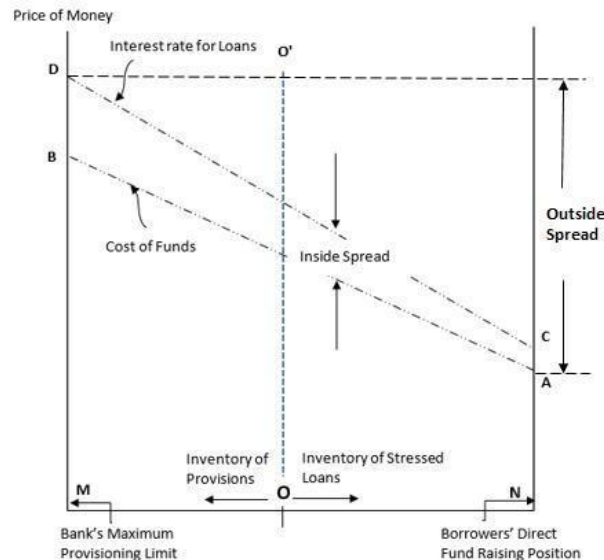
It is the inventory of cash which keeps the price of securities (loans) sold by the bank (represented by interest rates) continuous and keeps the market liquid. We should note that unlike the stock market, it is, traditionally, a one-sided inventory. Cash can be converted to loans if there are borrowers. But loans, originally by definition, 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. This can be explained in the following steps:

1. Initially, the bank has an inventory of cash emanating from capital and deposits.
2. Using this cash for disbursing loans to a company, the bank consumes cash inventory and builds an inventory of loans.
3. 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 stock. There, every change on one side was complemented by a converse on the other side; here it is not. Thus, provisions cause expansion of balance sheets, but bring in no 'elasticity' to the markets.
4. The increasing presence of bail-outs, bail-ins, Asset Management Companies and Asset Reconstruction Companies make the risky loans tradable for cash or cash equivalents making the inventories of banks two-sided. The inventory of tradable securities is the inventory of risky loans (irrespective of whether they are ‘declared’ NPAs or not).
5. I recommend using the model for a chosen industry or sector. The model should give a sector specific snapshot of a bank or the consortium of banks at a time when banks sense

that the market for the industry is not in upswing and that there is a risk of loans getting bad and bad loans turning into NPLs.

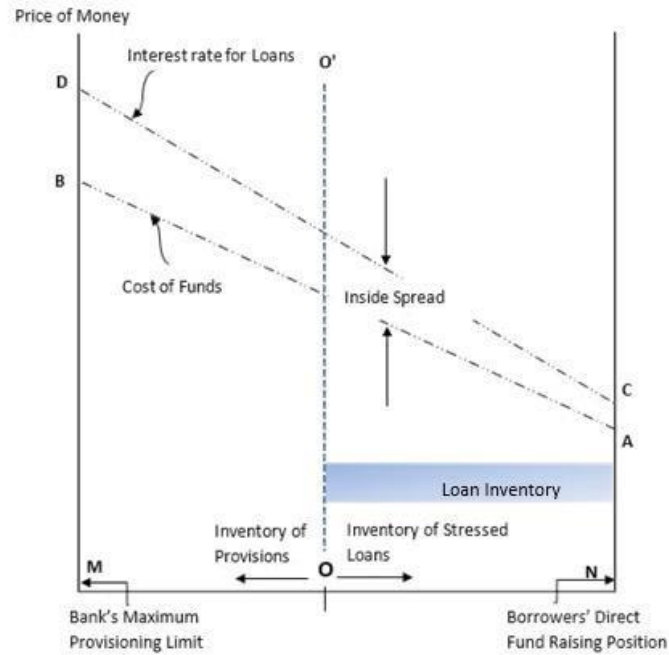
6. The stage a loan or an asset is identified as risky, irrespective of whether it is partially repaid, totally unpaid or even when repayment time is away but the risk in the debt is perceptible, it enters the framework.



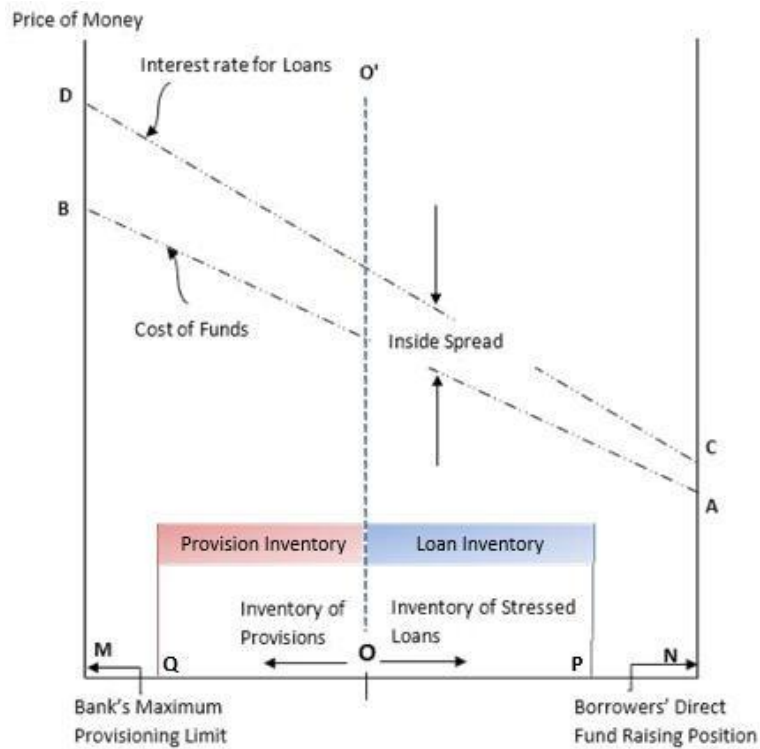
**Figure 2: Economics of Dealer Function for Banks**

With reference to Figure 2, loan inventory, on the right, starting from point O and heading towards N, represents total amount of money lent to a risky sector. The initial cash inventory on the left, starting from point O and heading towards M, before lending, indicates the loanable deposits or funds with the bank. Once lent, the cash inventory is reduced. Such a state of bank-debt credit market for a lender, is represented in Figure 3. The length of 'Loan Inventory' would be between Zero and distance 'ON'.

In dark periods of economy, provisioning becomes necessary. If the bank provides money equivalent to risky assets, it impacts banks' cash-flows as a provision is a cash outflow. With respect to this model, there is a cash inventory set aside and is heaping up as risk in loans grows. 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 Figure 4.



**Figure 3: Economics of Dealer Function for Stressed Bank Assets**



**Figure 4: Economics of Dealer Function for Stressed Bank Assets**

In Figure 4,  $OQ = OP$ .

If central bank mandates banks to maintain provisions for 70% of bad loans, the cash inventory position of the bank would be 70% into the cash inventory, that is, on the left side of O, and OQ would be 0.7 times ON.

For a given scenario, there is a position for loan inventory (P), there is a position for cash inventory (Q) and there is a net position either on loan inventory side or on cash inventory side. An asset for the bank (loan) with no risk associated has no provisions and so, has a net position 100% into the right side, that is, loans inventory. In such a case, Economics of Dealer function would appear the same as the one in Figure 3.

### 3.3.1 Components of Economics of Dealer Function for Stressed Bank-Debt Market

Like the Treynor model for security dealers, we have

- i. Position limits
- ii. Inside spread
- iii. Outside spread

for Economics of Dealer Function of the banks as market makers.

#### 3.3.1.1. Position Limits

The *position limits* are

1. The limits of inventory of bad loans and
2. The limits of inventory of provisions.

In figure 4, the distance OP represents the Loans inventory position limit and OQ represents the Provisions (cash) 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 explain how the limits of outside spread determines points M and N, later in this section. Position Limits are decided by:

### *Capital buffer with the bank*

Provisions boost risk taking ability of a bank. Higher the ability to provide, 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 is expected 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 relatively inclined towards cash side.

### *Funding liquidity of the bank*

Funding liquidity is defined as the ease with which a bank can replace its untimely withdrawn deposits with capital. In this context, funding liquidity is the ease with which a bank can raise provisions if a loan untimely turns out to be 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 in order to be efficient market makers.

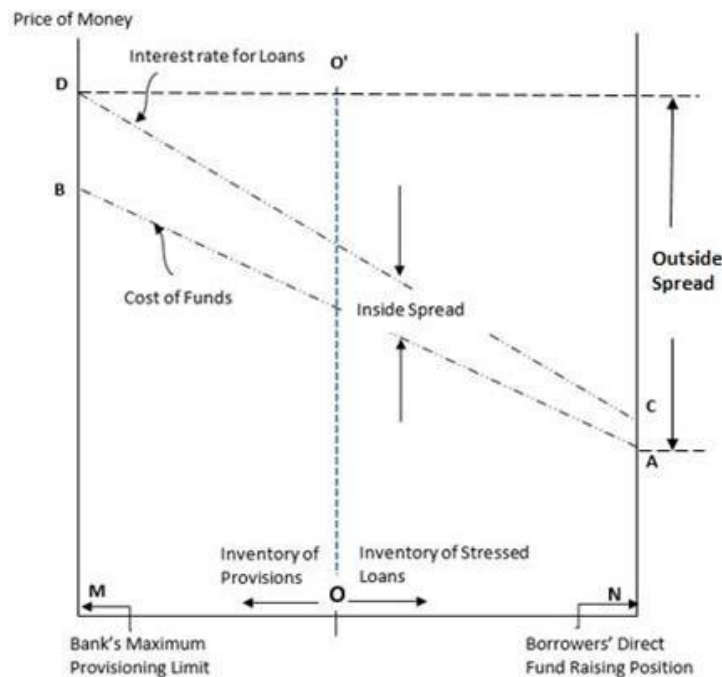
#### 3.3.1.2. Inside spread

Inside spread is the difference between interest rate at which a bank lends a '*risky*' loan and the cost of raising funds and provisions for the same '*risky*' loan. In wake of a favorable exogenous change, a higher cut in cost of raising provisions relative to the cut in lending rates would increase the inside spread. In wake of a tightening exogenous change, inside spread shall 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 interest rate at which the bank lends minus the cost of funds. However, if a stressed or declining company approaches a bank for raising capital, the bank would do the following:

1. The bank would want to charge a higher interest rate as this loan entails more risk and encumbers bank's liquidity.
2. In due course of time, expectedly, the bank would set aside provisions depending upon the risk level of the loan.

Inside Spread of Risky loan = Risk-free lending spread + Risk premium + Cost of provisions



**Figure 5: Outside Spread in Economics of Dealer Function for Bank Debt Markets**

With reference to Figure 5, the equation, above, indicates that the inside spread, measured for an industry, gets broader as the cash inventory position shifts left. This is expressed by a shorter inside spread (AC) for a net position on the extreme right and a broadening inside spread as net inventory position shifts left, with broadest spread at extreme right net position of inventories (BD).

### 3.3.1.3 Outside spread:

Extrinsic to banks, there are factors decisive in determining the price of money. These factors give rise to the lower and upper limits of the outside spread. Represented in Figure 5, lower limit is denoted by point A and the upper limit by point D. Length AD denotes the Outside spread. These limits of outside spread decide the extent to which position limits (OM and ON) can be extended.

#### 3.3.1.3.1 The Lower Limit

In flourishing life cycles of a sector, when low interest rates are appurtenant to growing trust between the lenders and borrowers, disparities between credit and money shorten. While this happens, the banks ascend towards the point N on x-axis (Please see figure 5). 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 by reaching the lenders (depositors of the bank) directly through commercial paper and corporate bonds or using equity. There is a risk (with the bank) of losing business, but it does not inhibit market making function in the industry or the economy overall. With a focus on market making, the ripples associated with bank-debt market reaching lower limit (ON) are benign.

#### 3.3.1.3.2 The Upper Limit

In declining stages of industry life cycle, loan repayments get delayed due to plummeting profits. Supply shocks or disruption from foreign competition could render industry's earnings fall, thereby causing inability to service debt liabilities in time. Steel industry in some countries is an example of the latter case when China overtook world steel market share.

In such industries, bad loans / NPAs surge and Performing Assets are under increased pressure to perform. Consequently, for new loans lent, interest rates go up as risk grows and assessments are stringent. Up to a limit, banks 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 (Please see figure 5).

As the stress in lending reaches M,

- i. Arranging higher provisions becomes a necessity for the banks.
- ii. The interest rate on loans does not cover the cost of funds, cost of provisions and the risk incurred by the bank.

Consequently, at the upper limit —point M on the inventory scale and point D on the interest rate scale—banks stop making markets. Banks find it infeasible to make markets anymore and are expected to look for laying off their inventory of loans.

Due to prudent business decisions, with an intent to protect banks from making further losses, banks cease lending to afflicted companies or sectors, at a stage where capital infusion in companies (accompanied with cautious and pragmatic business strategy) is the need to pull the industry out of the decline lull.

As per the original Economics of Dealer Function model (Treynor (1987), applicable for stock/bond market), in share markets, behind the scenes, there are some deep pockets. They are the '*value-based investors*' who get '*motivated*' by reduction of price of a security to scrap. They buy securities (from dealers) and exchange it for cash when dealers exhaust their position limits. Their transactions replenish dealers with liquidity making dealers continue making markets. Warren Buffet is a classic example of such a Value Based Investor (VBT) in the share market.

In the same way, in stressed bank debt markets, a higher supplier of liquidity, the outside investor, is expected to set in, at point M to replenish banks to continue making markets. This could be Asset Reconstruction Companies, Bad Banks, government or Resolution funds.

This constituent of the model is expected to have an orientation 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. A value investor is someone who is able to locate or create future value in a company dripping wet deeply into a bad loan.



If credible and robust outside investors are present, when stress in the sector in question has not reached its peak but is anticipated with uncertainty (when the market is moving towards the upper limit  $M$ ), banks, as dealers, know that if the anticipation turns real, the inventory can be laid off conveniently. In such times of anticipation, this makes the banks embrace some more risk and prompts them to continue making markets longer. This also keeps borrowing interest rates within a controlled limit.

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 5 would contract.

### *3.4. The Appropriate Outside Investor*

What are the characteristics of the right outside investor for bank-debt markets? The answer lies in the purpose of having a bank – To maintain continuity in price of money and sustain market making. Analyzing government and Central Bank bailouts, bail-ins and Asset Reconstruction Companies as outside investors, the following facts transpire.

1. They work to defer than to solve. How does transferring payables from bank to ARC/AMC alleviate the root cause? Bailouts may resurrect a bank, but not the market making in the marred sector.
2. The deference of repayment comes at a great cost giving rise to a different spiral. The bailouts result in fiscal deficits; ARCs/AMCs do not pay 100% in cash. ARCs issue cash receipts which, similar to loans, are promises to pay cash in future. The existing outside investors may create chances for banks' security, but, they are not making banks (dealers) to rebuild cash inventory to make markets.
3. Bad banks like NAMA and SAREB were essential and effectual in explicitly sieving healthy and toxic assets from banks at a countrywide level. But do they have the required value investing nature of business? They don't. They are facilitators or intermediaries for selling the non-performing assets.

*Private Equity* are appropriate as outside investors since have the essence of value investing. Value investing is their business and having deep pockets as investors is their characteristic. The summary of differences, in the context of ‘Outside Investors’ with respect to The Economics of the Dealer Function for Banks, between what it is now and what we expect is:

1. A value investor, here, does not only buy ailed securities, but is also expected to play a role in revival of the borrower company. This does not defer the problem but approaches the root of the issue.
2. Unlike governments, a value investor is not incurring sunk costs to purchase loans. It is investing to generate returns in future. A value investor has a ‘*selfish*’ interest in being an outside investor, unlike government bailouts. This makes economic sense and gives superior reasons for the investor to be source of market liquidity.
3. The concept of Private Equity is placed at the intersection of ‘*Maturity*’ and ‘*Decline*’ stages of life cycle of a business. Having Private Equity as outside investor is at the convergence of industry sector and banking sector.

The presence of PE as a source of liquidity has been identified and is in practice in countries including European and Asia-Pacific nations. However, mere existence of PE does not suffice. There is a strong hindrance of **outside investor lag**, which prevents delivery of results from PE.

#### **4. The Outside Investor Lag**

With reference to Figure 6, as banks detect default risk in loans lent to an industry, the bank builds higher provision inventory. The provision inventory starts building up leftwards from O. The stressed industry continues to be afflicted. Interest rates for lending to this industry, rise and reach D`. Provisioning becomes costlier for the banks. Banks find further lending to the industry, risky and further provisioning inordinately expensive. At D`, Banks cease making markets and seek an outside investor to exchange loans with cash. (Banks may discount the value of stressed loans for sale).



1. Time for the value investor to know that the price benchmarks in the markets are not same as per investors' yardsticks;
2. Time for value investor to read the right information about industry and the prospective investee company;
3. Time for central banks and governments to make prudent policy changes, suiting the situation, for getting the value investor into market, and finally,
4. Time for due diligence and deal making.

We term this time gap, for which market makers wait to hand off their loan inventory to the right outside investors, as **Outside Investor Lag**. The outside investor lag causes discontinuity in lending interest rates. Capital funding to the afflicted industry suspends during outside investor lag. This is the need where macro-prudential regulations play obligatory role.<sup>2</sup>

#### *4.1 Need for International Capital Flows*

The characteristics of an appropriate outside investor is 'Ability to employ long term capital', 'Expertise' and 'Willingness to invest in a declining company or industry'. Though Foreign Direct Investment is not mandatory for an investor to be the right outside investor, a few facts make FDI in form of Private Equity palatable to the requirement.<sup>3</sup>

1. Technological obsolescence is a telltale reason for a company or an industry to decline. The technological deficit is expected to be filled by FDI. FDI facilitates the transfer of technology. This cannot be achieved through local financial investments or trade in goods and services (Loungani, Razin, (2001)).

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<sup>2</sup> 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. <sup>3</sup> These are not general advantages of FDI. They are reasons to prefer FDI, if applicable to the industry, over local investors.

2. In case of emerging market economies, governments, in the interest of public, own a major share of capital-intensive industries, which are expected to have economies of scale. If such industries decline, there is less recourse to Public Sector companies to recapitalize them through fiscal funding. In EMEs, governments are usually laden with high fiscal deficits and carry the additional responsibility of social objectives of ameliorating poverty and fight pervasive ailments. Channelized and planned Foreign Direct Investment could play a pivotal role to achieve the purpose.
3. Recipients of FDI often gain employee training in the course of operating the new businesses, which contributes to human capital development in the host country. This is not extraneous to the purpose. FDI can cause Total Factor of Productivity to improve, along with augmenting capital availability, dilution of which is often a reason for a company or industry to decline.
4. 'Foreign' competition is a factor which causes sectoral decline. It is deemed prudent to capitalize on 'Foreign' expertise of augmenting production and cost saving techniques. Making FDI feasible opens the road for exploiting 'foreign' expertise and 'foreign' capital for shared growth which includes industry resurgence.

Yet, policy responses to international capital inflows in emerging economies do not evince keenness to capitalize opportunities for capital inflows (Ghosh, Ostry and Qureshi (2016)). Policies are more likely to respond, and used in combination, during international capital inflow 'surges' than in normal times. The analysis finds that fiscal policy, by and large, is either neutral or procyclical in context of capital inflows. The policy is found to be 'reactive' to flow surges than proactively inviting inflows to benefit from them.

This stance of EMEs policy mix of not pro-actively encouraging FDIs despite its evident advantages and academically proven allayed risks ((Blanchard, Ostry, Ghosh, Chamon, 2015) (Blanchard, Ostry, Ghosh, Chamon, 2016) (Ghosh, Qureshi, 2016)) contributes to the Outside Investor Lag.

#### *4.2 Evidences for Presence of Outside Investor Lag*

We notice that banks do not report sector-wise loans and outstanding credit figures, in public domain. We acknowledge this limitation. If data is made available on a few points mentioned in section VII, the conceptual model can be better validated with coherence.<sup>3</sup>

To corroborate Economics of Dealer Function model for banks, we list cases of economies and observe the presence of outside investor lag. The following descriptions indicate the sequence, partly or fully, which is elaborated in the model:

1. Sectoral decline of an industry in an economy
2. Reflection of sectoral decline in financial sector in form of growing risky bank assets
3. Banks' need to lay off inventory of bad loans
4. Delay in laying off bad loans demonstrating a significant 'Outside Investor Lag'.
5. Accumulation of bad loans to alarming levels
6. Spill-over effects of non-performing loans to economy, overall.

We browse through cases of a few economies to observe the outside investor lag. Observing this gap strengthens the need for timely, situation-specific and agile macro-prudential regulations.

##### **4.2.1 India- Power sector, 2018:**

The power industry of India, which scripted history from being a power deficit to a becoming a net power exporter, was least predicted to be a top contributor to India's NPAs.

The development which shattered the industry, largely based on traditional thermal power generation, was stunned to see renewable power generation being able to offer power at 66% of the price charged by thermal power sector. Many of thermal power producing companies were also affected by the Supreme Court of India's 2014 cancellation of coal block allocations.

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<sup>3</sup> The unavailability of these data points for all industries and countries (with ensuing analysis) strengthens the need to view the scenario in light of the model proposed.

This meant the companies that set up coal-fired thermal power plants were either unable to start production for lack of coal or were unable to find buyers due to demand-supply price gap – a recipe efficacious enough to push the industry into financial derailment and an outside investor lag of INR 1.74 trillion (\$ 25 billion).

It is noteworthy to see that the only way the sector can turn positive is by an overhaul of its operations or by accessing foreign markets where thermal power generation in India looks fits price bill of those nations. Both these conduits to success require a private equity or an external turnaround interference.

#### **4.2.2 India – Aviation (Jet Airways), 2019**

Jet Airways once was the second-largest airline in India after IndiGo, with a 17.8% passenger market share. Owing to new entrants in the market offering low price flights causing Intense pricing competition, the company piled up losses and was reported to have a negative financial outlook in November 2018. The following states the compendium of events:

1. January 2019 – For the first time, Jet Airways defaults on debt payment to banks. Reasons: Intense pricing competition, compounded with a weak INR and rising fuel costs.
2. March 2019 – 25% of Jet Airways' aircraft grounded due to unpaid lease rates. Owners stepped down from the board of directors.
3. April 2019 - Fuel supplier to Jet Airways stopped supplying fuel to the airline, citing non-payment of dues. Jet Airways suspended all flight operations.
4. June 2019 - With no acceptable offers from Etihad Airways and Hinduja Group, lenders to Jet Airways decided to refer the company to National Company Law Tribunal (NCLT) for bankruptcy proceedings with debt of \$1.2 billion.

Jet Airways grounded is set to have a ripple effect on competition, fares and customers as rival airlines scramble to fill up the void. The loss of job of every employee on the rolls of Jet Airways also costs five others indirectly involved in the value chain. Considering Jet has more than 15,000 employees, that would mean loss of work for about 75,000 people.

This is a classic story of not realizing the need to measure how fast a financially sound business can disintegrate and give rise to a NPA of \$1.2 billion, just because of a pricing disruption at the core of the reasons for its collapse.

#### **4.2.3 Sri Lanka – Aviation, 2019**

Sri Lankan Airlines, owning about a third of Sri Lankan aviation market share, tumbled down from the growth path since 2008 and matters have worsened with time till 2019, when Sri Lankan Airlines defaulted on loans backed by government. The Government now bears contingent liabilities over the provision of guarantees for loans defaulted.

The reasons for the spree of losses are reported to be inability to deal with competition in a rapidly self-disrupting aviation industry, operational hassles, inability to hedge exchange rate risks and contract noncompliance issues causing imposition of fines.

Though the state-owned enterprise (SOE) has been pondering over privatizing the enterprise to an outside investor, what makes the case a part of this study is the fact it is currently unable to garner interest from potential outside investors. This is where the Outside Investor Lag has been evident due to unavailability or paucity of the apt outside investor and the deficiency in the markets to signal the right information to the right set of investors through market prices at the right time.

Looking at this instance, the outside investor lag has run into several years. Its ripples are not just localized to the enterprise or the banking labyrinth but is now a fiscal concern as well because the loans defaulted sit as a contingent liability on the balance sheet of the government.

#### **4.2.4 India – Telecomm, 2016-17**

The mobile phone industry in India accounts for 6.5 per cent (\$ 140 billion) of GDP, and employs over 4 million people direct and indirectly. India's telecom industry suddenly started contributing to total NPAs of infrastructure sector from 5% in 2015-16 to 8.7% in 2016-17.

In 2016, Jio, a relatively new entrant in the market forced incumbent telecom firms to cut voice call and data rates due to its competitive pricing scheme. The introduction of cheap call and data eventually translated as what started being termed as the Internet Revolution in India as it exploded the data consumption to world's highest data usage per smartphone at an average of 9.8GB per month.



For existing players of Indian telecom., cost of 1GB data had to be brought down to average \$1.9 during January-March 2017. Despite the expansion of potential market for network providers, adjusted gross revenue of the then top three telecom companies in India - Bharti Airtel, Vodafone India and Idea Cellular – fell sequentially by 7.98 per cent, 5.14 per cent and 4.91 per cent respectively in the FY17 Q3.

The price war and competition trapped the telecom sector into a high leverage with interest coverage ratio turning less than 1 since 2016-17 Q3. The fear that the competition and inability of telecom companies to service debt obligations will cause defaults has very much been there and is extant in the Indian banking sector.

This is a case which exhibits how a genuine disruption in the industry also inadvertently pushed the existing players of the sector into debt overhang and despite 3 years having passed by, how the afflicted firms remain parched for innovation, cost effectiveness, strategic direction and most importantly, funds to meet the said objectives.

#### **4.2.5 Thailand – SME - Manufacturing and Commerce, 2018**

SME sector accounts on average for around 75% of national employment, but still contributes significantly high Non-performing assets of the Thai banking system.

The increase in NPLs of manufacturing and commerce sectors can be attributed to tougher competition from the e-commerce business and modern trade filtering into provincial markets.

Hit by slowing domestic consumption and falling exports, particularly to China, limited internet use and few international quality certifications have hampered Thai small businesses' access to foreign markets.

The requirement was to pave the way for targeting reforms where they are most needed and not just a broad-brushed bouquet of policy reforms, applied commonly to all industries. As an example, for SME sector, why invest more in expensive broadband infrastructure when what companies really need are the business skills to create websites and use email? This gap steepened and has

now been patent in the rising NPAs of 6.63% in SME Commerce sector vis-à-vis 2.8% in Large Scale Commerce sector. (Bank of Thailand, 2019)

Doesn't the story resonate with the anatomy of the typical industry specific outside investor lag model for banks?

#### **4.2.6 Malaysia – SME, 2017-18**

SME sector contributes to 37% of Malaysia's GDP and yet has close to 4% sector specific Non-Performing Loans ratio. Some long unsolved issues faced by the sector are challenges of obtaining business loans, being unable to attract or retain talents and being slow to adopt new technologies.

Experts also find the need to assist SMEs by pushing forth Malaysian products to the global stage and bring on board potential foreign partners to work with local SMEs and encourage technology transfer. There is a strong gap and hence the need for the Malaysian government to offer SMEs with business consultations to help them in better decision making, as well as allow local SMEs to participate in mega projects or economic master plans moving forward.

The way and sequence in which these facts have transpired alludes to the chronology of Outside Investor Lag Model, eventually surfacing as NPAs in the banking system and strongly indicating the unfulfilled need of the right outside investor.

#### **4.2.7 Brazil – SME, 2017**

Brazil's ailing industry and stunted industrial production was attributed to decreased productivity. Access to finance was ascribed to limit productivity growth. Finance for long-term projects and for small-and-medium enterprises was constrained - except for a small group of preferred enterprises with access to government subsidized credit. Investments-to-GDP ratio remained at or below 20%. Foreign direct investment in Brazil was mostly aimed at accessing Brazil's large domestic market, rather than seeking efficiency in production. (World Bank, 2016). It was known that Brazil also faced a growing base of bad loan inventory, which is causing banks to raise provisions up to 7% of Brazil's outstanding bank loans despite abatement in default-risk in 2017.

This evinces reduced market making despite a lowered default risk as a combined impact of piling up of a bad loan inventory with banks and absence of capital flows to resurrect SME industry.

#### 4.2.8 Private Equity – Outside Investor Lag, India, 2014-16

1. In Indian banks, growing NPAs in Steel, Infrastructure and power sectors in India has been causing tremors to the respective industries and the banking sector. The risks in loans was evident from 2013 with mounting bad loans in the banking sector. According to data released by Reserve Bank of India (RBI), there has been a sharp rise in NPAs reported by banks.

The RBI has been keen on hawking bad loans and pursuing ARCs by

- i. marking fee to recovery of bad loans than linking it to outstanding value of Srs.
- ii. reducing recovery strategy planning duration to six months from a year.

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, hindrances in its implementation augmented Outside Investor Lag.

2. In India, Kohlberg Kravis Roberts (KKR & Co.), a PE contender had to **wait for two years** to get a license in India for establishing an ARC. These two years were a potential outside investor lag. On a temporal continuum, it is three years which took KKR to quench the parched ARC with capital.
3. In India, 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, reduced market making manifests as **reduced risk appetite** of banks' lending especially lending to the sectors which are still stressed. For example, banks in India have made steel and power sector wait for credit.

These are a few instances where Outside Investor Lag has been conspicuous due to its prominent manifestations. There are several others either in making or hiding in small sectors of emerging economies where disruption is the norm but outside investing is still rudimentary.

## **5. Research Findings and Implications**

In absence of a value-based trader, a bank, as a dealer hesitates to carry inventory and prevent providing market liquidity. This causes Outside Investor Lag which is deduced as the time for which banks are forced to wait to lay off the inventory of bad loans.

Aftereffects of Outside Investor Lag manifest as reduced market making from banks. The impact of stunted market making is manifold: ranging from rising interest rates to an unpromising investment outlook and from a passive industry to potential reduction in GDP of economy.

In practice, the outside spread is assumed to be non-existent or is considered ignoring the Outside Investor Lag. The distance OM (Figure 6) in the Economics of Dealer Function is often perceived narrow until a mild stagflation becomes conspicuous. Even then, the link between economic lethargy and the outside spread remains unattended and is let free to recur when the conditions are palatable for it to breed. This makes looking at industry life cycles with reference to Economics of Dealer Function essential to prevent economic slowdown.

In light of Economics of Dealer function model for banks, we see that though, manifestations of Outside Investor Lag are seen in banking sector, a pivotal factor lies in inefficiency of capital markets. If markets are efficient for passage of information to deep pockets in the market, Outside Investor Lag can be reduced.

Monetary pass through of interest rates is likely to lose impact during outside investor lag (region QM, Figure 6). Though the region of Outside Investor Lag witnesses high interest rates, high interest rates are not the governing reason for suspended business activity. The reason is reduced willingness of banking industry to lend to the diseased sector or set of companies.

In 'economic' context, Private Equity, as an outside investor, serves the purpose suitably than the way served by bail-outs, resolution funds or bad banks. It is because 'value investing' is their business and their investment horizon is long enough to engender changes in a declining business.

If an economy has even a few sizeable capital-intensive industries which may experience decline and create susceptibility to loan failures, caused by technological obsolescence and foreign competition, it is advisable to have financial infrastructure agile enough to accommodate outside investors in form of Private Equity. Though it is not mandatory to have FDI, Private Equity, in form of FDI could serve the purpose better than local investors, especially in Emerging Market Economies. This calls for prudent and timely policy changes.

A free flow of capital rests on free flow of market information. Thus, a convergence of bank financial systems with capital markets is a crucial need to stem Outside Investor Lag. This would help attend the determinants of interest rates in bank-debt markets.

## **6. Conclusion**

Through Economics of Dealer function for Banks, we acknowledge differences between policy steps intended to sustain banks as stand-alone entities and steps aimed to sustain market-making ability of banks as dealers. The two may not always be the same and a step to ensure sustenance of banks as stand-alone entities can be agnostic towards their market making ability.

Measuring and reporting industry specific 'Outside Investor Lag' along with NPA ratios shall work as a predictive scale to measure how far is the banking sector of the economy to revive its market making ability. Based on the outside investor lag, international capital flows can be encouraged or discouraged through policy tools.

Appreciation of the significance of 'Outside Investor Lag' is expected to influence policy-makers to shift from a 'reactive' and 'pro-cyclical' policy response towards capital flows to a 'pro-active' and 'counter-cyclical' response when situation is ripe to encourage Foreign Direct Investment.

## 7. Direction for Further Analysis

We have discussed Outside Investor Lag on the scale of cash and loan inventories as a percentage of position limits. The next step is to measure it, in units of time. A parameter could be reported to analysts and policy makers that for a given sector in a given economy, which if currently debt stressed, would take '*x*' years for banks to lay off bad loans to an outside investor **and resume market making**. Translation of units would entail factors idiosyncratic to a sector or an economy.

It is conceptually certain, that NPAs mar banks as market makers (and not just as businesses). This causes loss of liquidity in bank debt markets. This is required to be measured in numbers. Since our focus is on the impact of a beleaguered sector on banks, the response variable is one which indicates 'Liquidity' of 'Debt Markets' with participants as '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.

At present, there is no established parameter which reveals sector specific 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. Liquidity of a stock can be gauged by variance in bid-ask spread over a continuous period of time and variance in volume of trade over the same period of time.

Analogically, in a bank loan market, to measure liquidity, we would need to consider a wider time span and pick data points spread across months or quarters. The response variables required are:

1. 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.
2. Outstanding credit: A parameter closed to the 'volume of stock market trades' would be the 'Outstanding credit grouped by industry', arranged by the same interval as the interest rate.

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