# Modern Banking: Some Differing Perspectives & the Issue of NPA

## Satya Prasad Padhi

*The present paper argues that if banks and central banks are sensitive to growth prospects that create both good assets (for banks) and better macro fundamentals (for the central bank), NPAs as a percentage of advances would be low. The argument rests on an endogenous money thesis that supports higher growth of advances that in turn permits expansions, expansion-led learning by doing and further investment opportunities that are more productive. Rate of interest policy that best attends to this growth prospects and bank advances nexus best manages monetary prospects, including, of course, NPAs issues.*

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**Introduction**

The present paper holds that the issue of non-performing assets (NPA) plaguing the banking sector in India is one that pertains mainly to how banks adjust to growth prospects. A hypothesis can be: the degree of freedom that monetary policy gives to the banking sector; greater the freedom, which permits banks to be more sensitive to growth prospects related issues, the lower would be the incidence of NPAs. Here, it would be argued that the issue is one of low versus high interest rate policy adopted by the central bank; the former, for instance, would give more freedom to banks, permitting it to be more sensitive to growth prospects. Still it is not monetary policy issue per se; though it plays an important role in actualizing growth, the prospects depend primarily on generation of better supply responses ( Padhi, 2018; 2018a), which can have autonomous characteristics. It is all about how banks align to growth prospects per e. The freedom to banks, or any viewing of low versus high interest rate debate, depends on different views on modern banking, which can broadly be interpreted in two ways. This follows,

in economics discourse, different views on money supply thesis. There is the traditional exogenous money thesis, which gives banks less freedom, as opposed to the endogenous thesis.

Given the above picture, the paper is organized as follows. It begins with an overview of both exogenous and endogenous money thesis, with an emphasis on how the role of banks fundamentally differs. Next it starts with how the different views on banking relate to the low versus high interest rate policy, and how this policy debate defines the banks' sensitiveness to growth prospects; it then relates how this debate sheds light on the NPA issue. Finally it provides the concluding note.

**Exogenous Money**

This particular focus should start with the mainstream neo classical perspective, in which an economic system starts with some output flow. Policy makers would be choosing the money supply corresponding to the requirements of output. This induces the exogenous view of money supply (Dasgupta, 1997): monetary authorities (say, as the basic source) define issuing of government borrowing through bonds that takes place when the central bank creates a new reserve fund, which is when spent by the government. This partly circulates among the public in terms of coins and currency. Rest of the reserves (with the central banks), the deposits with the commercial banks, can be lent out. That is, banks expected that not all deposits would be withdrawn by borrowers, and a fraction of deposits can be kept reserved for the cash requirements. Rest can be lent; if lending also creates new deposits, the process of lending can further resume after the reserve requirement. This process then adds to the magnified increase in demand deposits – the credit multiplier process. The credit multiplier would equal 1/reserve ratio (RR) and through this the banks, if credit multiplier and money multiplier equals, can add to the supply of money (for the exact processes, see, Gupta, 2000).

Then, taking circulating currency and reserves of banks with the central bank as the base money, the money supply would be higher. It is true that not all lending and money generated so translates into demand deposits; for instance, there can be savings and other long term deposits, which call for a broader definition of money supply created by the credit multiplier.

This view of money also is specific to an institutional view of a central bank. The banks are supposed to keep a percentage of reserves with the central bank, or the central bank can also stipulate an overall RR (and credit multiplier). If so, given some base money, there is the regulation of the aggregate money supply.

What should be the required stock of money, and how it is to be generated in each stage? The equation MV = PT says that if money supply (M) times the velocity (V) equals the transactions related demand for money (T), and if so, the policy focus should be price (P) stability

(i.e. zero inflation). More or less money supply would imply inflation or deflation and policy would manipulate aggregate money supply to avoid these events.

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It should be stressed that banks in the process also do another important economic job. If money supply enabled output flow is partly saved, and is kept in the banks, banks should translate them into investments i.e. lending for investment purposes should just equal the willingness to save (or the savings that the output flow generates). Here, Friedman (1957) would also add that the output flow (or, T) is also inclusive of some demand and supply of financial assets, through which savings and investment are mediated. If bank rate of interest equals the (marginal productivity-based) real rate of interest, the financial market would clear with a given "currency/demand deposits" to financial assets ratio. Then, corresponding to MY = PT, the savings investment equality can be attained. The central bank can manipulate the base money, the reserve requirements, and the rate of interest, to regulate the money supply that ensures price stability.

Higher money supply, given the income flow, would result in inflation. Why this is a problem? It should be noted that the additional income flow is actualized by the savings that anticipates the income flow. If the income flow has a real rate of interest (i.e. marginal productivity theory), this, after bank intermediation costs, determines the deposit rate of interest i.e. the income flow to savers. However, this income flow, like the lending rate of banks, is contractual. Inflation, though keeps the real returns of the businesses, reduces these contractual rates denominated in terms of money. Inflation reduces the incentives to save and bank intermediation. It redistributes income that transfers part of real income of savers and bankers to the businesses that constitute their pecuniary income (and does not contribute towards further income generation processes).

## Additional Developments

It should be noted that Friedmanian understanding broadly (or implicitly) encompasses an ISLM framework (always clearing the potential output though) in which rate of interest determines the simultaneous money and real market equilibrium (i.e. financial assets are in sync with real assets' performances, or corresponding to the real marginal productivity-based rate of interest, the demand and supply of financial assets equals, without any monetary disturbances; bank lending should confirm to it). This comes with the proviso that potential disturbances, say, output level and growth not confirming to their potentials, arise from monetary mismanagement; Friedman (1960) suggests that this source of disturbances can be eliminated if money stock and its growth follows the potential growth – the k- percent rule, to achieve price stability (or a definite in-

flation targeting) that in turn permits the real market (and rate of interest) stability. Then, ISLM comes with a somewhat vertical Phillips curve. Any sign of inflation is bad.

However, it has been noted (Orphanides, 2007) that broad money aggregates (especially M2) highlight fair degree of instability in response to bank deregulation (and MI to technological changes). In the language of ISLM, there is instability of LM curve that shows that monetary disturbances arise from the side of rate of interest (Poole, 1970). In particular, Wicksell (1898) had noted that if rate of interest is low in relation to the normal one (given normal output), bank credit-led money supply, reflecting aggregate demand outpacing normal output, results in higher inflation. But he remains silent on output configurations. Real world experience suggests that monetary disturbances have real consequences. This aspect has been attended to by New Keynesians' Taylor rule (see, Lavoie, 2006 for a critical review of the rule). There are rigidities, say price rigidity. If money supply and aggregate demand increases, say in a low interest rate regime, firms lag behind, and the increases in monetary aggregate demand translates into short run output increases i.e. short run non-neutrality of money (Sims, 2004). Taylor rule is so formulated that this can permit transition of output towards potential output, which comes with some inflation i.e. targeted inflation. That defines the upward sloping Phillips curve. Beyond a limit, say targeted inflation that corresponds to normal output, policy makers should not permit more credit-led money expansion i.e. policy rate should be raised. It should be stressed that this rule also acknowledges that if rate of interest achieves stability, there is the stability with respect to money supply growth that would be sync with potential output growth. So, there is the Taylor's rule that aims at interest rate management, to confer stability to monetary aggregates.

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**Comment**

This perspective explicitly assumes that there is a rate of interest adjustment that makes savings equal to investment; more specifically, it is sensitive towards inflation because it is sensitive towards savings; higher savings lead to higher investment. Banks also favour this view, to safeguard their monetary contracts. However, the criticism is that investment acquires autonomous characteristics. Investment is guided mainly by profitability, and if sensitiveness towards inflation is very high, and induces a high rate of interest, banks, in this context of monetary constraints, may have to forgo investment opportunities. Do banks forgo such opportunities? The neo classical theory that hypothesizes that higher savings permits higher investment would suggest increases in rate of interest to generate more savings. However, the higher rate of interest can come in the

way of otherwise profitable opportunities (and negate them). Here, MacKinnon (1973) and Shaw (1973) would hold that higher rate of interest not only promotes higher savings, but also permits the choosing of investment projects that are highly productive. However, the projects do not grow in thin air. There is a process involved, most of the improvements initially take place via informal small improvements (and credits at low interest rate – ease of finance); however if profitable, later on, aided by learning by doing, they translate into further improvements and so on. This process can be at risk.

**Endogenous Money**

There is another perspective of modern banking (and fractional reserve system) that holds banks have autonomy in lending i.e. they never refuse a profitable lending opportunity; even when the lending is not backed up by prior savings. Savings follow: for instance, it is not increases in base money that translate into higher money supply, but the causality is just the opposite ( Kydland & Pescott, 1990); banks lend, the process induces the base money – and adds to money supply (see below). Similarly, taking the opposite case, banks do not lend even if they are flush with funds. It should be noted that Taylor's rule also recognizes that bank lending has independence, and directly regulates money supply (i.e. it is endogenous); however, if the rule views it as mismanagement that induces inflation, the Keynes's perspective led endogenous money thesis (see below) recognizes it as a necessary aspect of reality that accompanies higher growth prospects (Padhi, 2018).

The theoretical support for this independence can come from Keynes (1936)'s theory. It does not assume a predetermined output flow as such. The focus is on the output and income determination that is taking place in any short run. The focus is on new investment, independent of prior savings that induces production, which again takes place prior to receipts. Commercial banks play an important role. Their lending brings forth the real investment flow (i.e. the production of investment goods), which in turn induces a magnified consumption goods production flow (Davidson, 1986). These are to be actualized by payments towards production (that are prior to the receipts). This can get reflected by the actions of commercial banks, who lend towards the investments (and productions), independent of prior deposits. They lend first, and then they search for deposits. This forms the basis of the endogenous money thesis (Rochon, 2004 that builds on Kaldor, 1970; Lavoie, 1984). What is important is that any liquidity constraints (i.e. bank lending at higher rate, or regulation of money supply), also affects costs, and can constrain production.

When banks lend, and create new deposits, there has to be the equivalent reserves in the central bank. Central bank would generally accommodate this demand, if investment climate is favorable. That is, it, like banks, would hold that investments generate an additional income flow. Of course, the reserve requirement is attained (again) by purchase of gov-

ernment bonds; however, such increased government spending (and aggregate demand) reinforces favorable investment climate. In any case, the increased income (and taxes) justifies such government borrowing and central bank accommodation.

The present article holds that the central bank accommodates by way of changes in policy rate, which in turn affects bank lending rate. The policy rate should take into account the principle of Keynes's liquidity preference that lends itself to an expectation-based rate of interest (also see, Padhi, 2018; 2018a). That is, the rate of interest of central bank should be adjusted to prevailing expectations that in turn determine the aggregate demand conditions (and induced expected production).

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It should be stressed that if favorable long run expectations prevail, and higher investment induced higher expected production demands higher bank credits to actualize production, banks lend; if this lending does not take place (i.e. money supply is not in tune with demand originating in the real sector), the pressure on V would increase (or money substitutes would appear) (Kaldor, 1970). Then, the policy rate should take into account the implicit pressure on V (or the implicit state of liquidity preference). If policy rate is low, and higher money supply comes forth in line with higher expected production, V would be stable (Padhi, forthcoming).

To elaborate, the maintenance of stability of V requires that policy rate (and bank lending rate), to actualize investment and production should be consistent with Keynes's liquidity preference theory of rate of interest. In Keynes (1936), there is a normal rate of interest in line with prevailing long run expectation that guides investment (and production). If expectation is favorable, but interest rate is "high", it is normal to expect that rate would go down. That is, people would expect that bond preference would be high, and willingness to hold or purchase bonds would be high (i.e. lower liquidity preference). In other words, it is normal that favorable expectation would be associated with lower liquidity preference and lower interest rate. The converse is also true. If the expectations are unfavorable and is expected to continue, the incentive for bond holding would be low that would be associated with higher rate of interest. In a period to period analysis, change in expectation brings about change in normal rate of interest.

The implication is: if the current period is characterized by favorable, long run expectation i.e. higher demand for bonds or low liquidity preference, the policy rate should be low. That is, policy rate should be aligned to favorable development in the bond market (that captures favorable investment climate, Padhi, 2018a). This would lend itself to

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maintenance of the value of V (and liquidity preference), or its stability (Padhi, forthcoming).

To put it differently, if the policy rate, and bank lending rate is low, the higher investment, and the induced multiplier would work out. This is important in endogenous money thesis. If banks lend independent of prior savings (and deposits), and create new deposits in the process, the realized income of the firms, based on the multiplier, permits the repayments – reflux of loans (or destruction of lending related deposits). On the other hand, if policy rate is higher, and lending at higher rate constrains investment (and expansion), and macro expansions can be constrained, this reflux may not take place.[1] A low rate on bank loans removes such constraints - indicates easy availability of finance.

Endogenous money thesis implies absence of liquidity preference, but this absence is when supply always adjusts to the demand for money that is generated by expected production; if the latter is guided by the state of expectation, the rate of interest guided, again, by the expectation[2], brings the supply of money in line with demand. One implication is that the rate of interest that guides the supply of money, say, the loan rate, should be in sync with the expectation-based bond rate. Then, money supply that actualizes potential production (i.e. in line with the working out of multiplier) provides stability to V (and monetary prospects).

This understanding of the role of liquidity preference in endogenous money thesis gives importance to the role and expectations that guide banks and central bank (Padhi, 2018). To elaborate, the basic of endogenous money thesis (see, Rochon, 1998) relies is: in a given state of expectations, if investment and production were to take place, bank credit is important; however, if banks lend, independent of prior savings and deposits, and create new deposits (and money), it has to be supported by reserves in the central bank (and adjustment of base money). Here, banks would be willing to lend so only if the assets refer to good assets ( Padhi, 2018); Trifonov and Trifonova (2012) maintains that central banks would also set a lower rate if macro fundamentals are favorable. In the

[1] In some discussions (Arestis & Howells, 1999), both the issue of liquidity preference and reflux of loans are discussed in an ad hoc manner. It is hypothesized that even if one allows for independence of bond preference (and liquidity preference), independent of a given state of expectations, the purchase of bonds (and the income of the firms issuing bonds) would permit the repayment of loans – soreflux would take place. However, this can interfere in the working out of multiplier (Padhi, forthcoming for further elaboration), and the output expansion-led learning by doing based growth processes.

[2] Wrey (1997) also discusses the role of liquidity preference in an endogenous money thesis; however, the discussion at best can be viewed as adjustments to a given state of expectation , and shows why

present paper, if good assets are associated with the scope of increases in income, central banks would be willing to change the base money (and reserves). Then, the expectations (and liquidity preference) that guide production guide banks and central bank (Padhi, 2018).

**If favorable expectation guide macro investment (and expansions), both banks and central bank would be more willing partners.**

In other words, if favorable expectation guide macro investment (and expansions), both banks and central bank would be more willing partners. That is, central bank would set a low policy rate, which determines low bank lending rate, and these facilitate larger expansions; the reserve (and base money) adjustment is higher. On the other hand, if favorable expectations are missing, bank rate would be higher, and lending would be higher, which comes to the accommodation of reserves (base money) being lower. Then adjustment of base money (and government expenditure) is in sync with expected growth prospects.

This view of endogenous money enjoins an understanding of investment opportunities that visualizes an ever increasing assets base of banks (and increases of their capital base). To elaborate, Keynes does not close the model with the assumptions of full employment, best technology and corresponding to it, the optimal decisions, etc. His autonomous role of investment can define the scope of individual decisions to initiate new things/improvements. It is far better to visualize that in every economy, there is the expansion possibilities. There are always the endeavors to bring further new investment. It is not how to allocate resources amongst alternative uses; it is the creation of more resources. New firms come up, and in an informally (in developing countries) or formally (in advanced countries), search for new sources of raw materials (or produce alternative materials), produce new machines in a novel way, and undertake trading activities that add to search for new markets, etc. (Stigler, 1951). It can be assumed that there is always some slack in the economy; it can use unattended/unexploited resources (say, mining or irrigation), unemployed labor force; or, it can induce the resources to flow (especially labor force) from less productive to more productive, say via higher wages, etc. These activities are guided by higher profits, but require money to get them actualized; before the actual flow of the new supply (and income). This is the job of endogenous money, created by banks.

There is another important consideration. As new investments induce a static output expansion, the anticipated better supply responses, with higher market reach, also change the competitive environment; others would also follow, bringing forth further improvements (i.e. further new investment opportunities). This means there is no such thing as a given output flow with a given supply of money. Any output flow would be associated with inbuilt investment opportunities, and

higher endogenous money supply. Expansions then always would be associated with the growth of endogenous money supply, which also implies that bank assets would always outpace its liabilities (that previous lending induces). Then, if aggregate demand outpaces existing supply, there would be some inflation. Keynes's scheme also visualizes an upward sloping Phillips curve. Here, unlike Taylor rule, the growth of endogenous money that permits aggregate demand to exceed (and enjoin some inflation), anticipates better supply responses in the economy, and is one to be promoted!

There is another source of inflation, which, now, is due to the nature of expansions i.e. Keynes' perspective would hold that in the income determination process, the evolution of costs determine the evolution of prices. As growth momentum is picking up, some traditional sectors lag behind, and would define macro decreasing returns. This would be associated with increases in prices and wages (Padhi, 2018; 2018a).

However, growth momentum is the source of learning by doing (Padhi, 2014a), which generates better supply response; as aggregate demand (and supply of money) outpaces the existing supply conditions (and the required supply of money); this would actualize better supply response, which have cumulative characteristics. This would be associated with higher fiscal borrowing, but this source of effective demand can have a sanguine effect. For instance, when macro expansions take place initiated by better supply responses in some sectors, some traditional sectors would lag behind i.e. macro deceasing returns. The growth of demand, here, supports these sectors, and permits them the opportunity to transform themselves, generate better supply responses. If so, even when decreasing returns (as a macro phenomenon) prevails, and some higher short run inflation, if there are indications of growth momentum, and new investment opportunities, money supply should adjust. In other words, monetary constraints, if it comes into being, targeting absence of inflation (or low inflation), constrain the state of the economy.

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The important rider is: endogenous money should be indexed to real expansions, which are to be guided by growth of aggregate demand. In this case, the policy should have to target a real response in which there is a generalized attempt to bring about improvements, creation of new resources, etc. – an investment begetting further investments that transforms the real sector in a generalized way i.e. the real response should induce higher generalized increases in labor productivity so that the wage demands are indexed to such improvements, with a lag. If so, even if there is necessarily a long view, the key insight of Keynes's short run prevails: endogenous money supply has to be linked to "new employment creation" and its determination!!! So far, so Keynes.

**Issue of NPAs**

The difference between exogenous and endogenous money is one of relating to bank rate. The traditional exogenous money perspective holds that there is output flow, and the general price level is specific to a particular stock of money (MV = PT). It looks suspiciously at rising prices, per se, and advocates monetary control (and higher bank rate). As a policy, high bank rate is the option when the policy makers are sensitive towards higher savings (with the assumption that they define corresponding investment opportunities).

Keynesian endogenous money perspective, on the other hand, holds that investment is autonomous, independent of any pre-existing savings. More specifically, if it embodies better supply response, investment needs to outpace savings, and high bank rate would reduce the scope of endogenous money supply, reducing the scope of higher output, and such output-led new investment opportunities, in turn. It advocates a lower rate of policy, which facilitates freedom of banks to lend, which in turn promotes new investment opportunities-led higher expansion of output and employment that also induces an investment begetting further investment process. This policy stance is more permissive towards inflation, if the growth prospects are favorable. It permits the increases in real income and stable inflation, in the long run (Padhi, 2018; 2018a).

The main point is: the endogenous money thesis says that freedom of banks, to increase advances induces the growth of continuous advances by banks to keep up the long run profitability of firms to whom the banks lend. This calls for a look at NPAs when the problem could mainly be due to lack of long run profitability of firms.

**Advances & NPAs**

First, the endogenous money thesis, allowing for larger output realization, and higher growth prospects (albeit with some inflation), implies both higher scale and growth of advances by banks. This has important implications for the management of NPAs. For example, there would always be some bad loans. The calls for larger issues: the issues of project evaluation by banks (in the face of asymmetric information), frauds, lack of proper corporate governance issues, etc. However, it would be presumptuous to maintain that the main culprit is the bad corporate governance (and the issue of deliberate frauds), and it is specific to Indian case. The present paper would hold that corporate governance issue may not be country specific, but the lower ratio of NPAs to advances in other countries should mainly be due to how banks are positioned vis-a vis growth prospects, which in turn is the issue of the freedom of banks with respect to advances. Still, banks in India, especially public sector ones, are new to assets management, especially with new exposure to private corporate sector; the management practices, based on learning by doing, would be slow to put in practice. There will be bad loans per se, say, which boil down to lack of experience in the evaluation of

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business proposals, and their risks. What is important is the percentage of these NPAs in relation to total assets/advances (and the prospect of income flow of banks that can back up the NPAs). Banks would generally manage the percentage via increasing their total assets/advances. A system of endogenous money is permissive of higher growth of advances (and growth possibilities) and lower ratio of NPAs to advances.

This possibility could be referring to the law of large numbers. One explanation could be that: as advances increase, there is the possibility of learning by doing to improve on the evaluation of advance related business proposals.

Second, higher growth of advances by banks also forms the basis of introduction of division of labor in manpower, which permits higher efficiency in the better evaluation of different inter-linked specialized aspects of business, such as production, marketing, etc. (see below – the sub section on growth prospects conundrum). Such division of labor, and the induced learning by doing, reduces the scope of NPAs. More freedom towards advances also permits the banks the option of taking advantage of a diversified assets portfolio, which in turn confers financial stability (Clarke, 1988). The neo classical perspective (and Taylor rule), with implicit regulation on money supply, and favoring high rate of interest, can reduce the scope of the management of the NPAs.

**Micro Dimensions: Bank Structure**

NPA would also differ from bank to bank. If there are monetary restrictions, and higher central bank rate, a bank with higher reserves, the ability to create more assets via loans, would be better off; the extent of NPAs, as a scale parameter can be higher, but the percentage would be lower.

They can resort to a lower rate of interest on loans, as a strategic conduct to maintain their market share, especially when other smaller banks depend on higher interbank and central bank rate, in an exogenous money policy environment.

The strategic conduct is not limited to the price of credit. Larger banks with better higher reserves permit them to lend long i.e. participate in supply responses that embody in larger investment project off; it is not large investment per se, but participation in vertical integration, diversified firms, etc. that gives them more secure long term base. This also adds to their capital base and the process can be cumulative. At the same time, they occupy the space in which larger firms adjust to productivity shocks better.

Larger banks would have a more di-

versified base. Bigger presence, with fast mover advantage, permits them larger institutional tie ups, which in turn permits not only (i) institutional advances, but also (ii) better information on secure advances, (iii) larger personal loan base, etc.

Smaller firms, for the same reasons, would lag behind; if they lose out in market share, the NPA percentage would be higher. To put it differently, exogenous money view puts smaller banks in a disadvantageous position; the endogenous money view, on the other hand, enjoining more freedom to banks with respect to "advances", and rate of interest, provides a more level playing field.

**Advances & Growth Prospect Conundrum**

It can be argued that advances would increase, endogenous or exogenous, but if growth is taking place, but then participation in high growth phase has its dimensions.

In fact, exogenous money view is more concerned about inflation in the growth process, which indicates overheating possibilities. If multiplier and expansion is associated with some higher inflation, the money view does not permit it; it possibly can constrain macro expansions.

On the other hand, endogenous view is directly linked to macro expansions of output and employment; more important, perhaps, the expansions permit learning by doing that creates new investment opportunities and so on. That is, there is the possibility of creation of good assets for the banks that would reduce the percentage of NPAs.

In the Indian literature, however, there is less appreciation of understanding of advanced growth processes. It is guided by investments, but investment that manifests itself in division of labor (Young, 1928; Kaldor, 1972). This initially takes place as within the firm specializations – in production sub tasks, trading, storage, finance, etc. Firm targets larger profits, but all depends on larger market access, and if the specialized labor force permits it. Then there are both learning by doing to perfect the sub tasks and generalized adoption of the division of labor; this in turn permits larger market for specialized tasks and specialized firms come up, and has cumulative tendencies i.e. the process supports learning by doing and growth of formal science that results in constant arrival of new tasks, new products, new industries, etc. (Padhi, 2014; 2015b). Success of firms depends on the effective inter-linkages between the tasks and coming up with such new developments.

One implication is that banks, in the process of advancing loans, should have complementary specialized employment base, in different tasks, to study the effectiveness of the project. It gives the larger banks with larger employment base, to initiate division of labor within it, to effectively process the information. It should be stressed that the requirement is of highly specialized manpower with scarcity value, and larger banks can take advantage of

economies of scale with respect to this employment (viewed as fixed costs).

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Evidence suggests that this growth process is lacking or is slowing down in India (Padhi, 2013; 2014; 2015; 2015a; 2016). At the same time, the advanced growth processes elsewhere would have their impacts (call it international shocks). Firms would adjust to it via adapting investments, but with greater exposure to foreign exchange risks (Padhi, 2015a; 2016a). That is, if domestic learning by doing would be lacking, the exposure to new developments, as shocks, would be greater. In India, there are firms who have to adjust to new products, new tasks, etc., - the growth impulses emanating in developed countries.

These changing conditions make some investments unprofitable, others more profitable. Who adjusts depends partly on organizational slacks, partly on resource diversion possibilities. The larger firms, have these organizational slacks, and would be in a better position to adjust. Still, the dependence of foreign exchange dominated imports (to adjust) would be high – as a scale factor as growth pans out.

In these circumstances, banks' nature of exposure to the growth phase is also important. The need for infrastructure (and of the more modern types), in a high growth phase, would increase. However, advances towards infrastructure need utmost caution. Empirical studies (Padhi, 1987; 2002) show that infrastructure does not induce higher investment per se; though the incidence of higher pace of investment makes investment in infrastructure economical/profitable. Infrastructure becomes important, and induces higher investment pace, when it is associated with strong manufacturing bases. In other words, banks exposure to investment in infrastructure can be highly risky, unless they follow growth impulses (say, growing states/regions with an emphasis on extent and growth of manufacturing bases).

Similarly, it is already mentioned that firms adjusts with organizational slacks, which is specific to larger firms. In addition, in a fast changing scenario, for instance, asymmetric information that plagues the retail depositors-banks-businesses link should not be discounted. Banks, when processing business proposals, may not have all the dynamic demand/supply side information on raw materials, other inputs, new developments in transport, marketing, etc. They may take a cautious stance in lending only to established larger scale based firms, who have the managerial abilities, to process information, and make necessary adjustments.

However, larger firms per se need caution. Particular mention must be made of larger firms that underline larger fixed costs based larger scale economies, such as iron and steel, cement, construction,

etc.; they make larger profits only if demand conditions are favorable. Moreover, they do not add to growth prospects i.e. they are once for all realizations of higher scale, as such.

The main point is: this type of banks' exposure is susceptible to overall demand conditions (or any other factor that increases unit fixed costs). If demand is low, profitability becomes low (and risk of loans goes up sharply) when fixed cost is very high i.e. working capital requirement would be low, but loans against fixed costs cannot be recouped (and when profitability is low with higher units fixed costs, the resale value of fixed costs (reflecting lack of demand) would be low.

**The learning by doing is best captured by smaller firms.**

A particular focus can be on small and medium scale firms. The literature shows that small firms have the propensity to come as new ventures, new business proposals in response to new changes; they do face technical and economic problems, but this is the source of learning by doing to improve, which is the main long term source of growth. The learning by doing is best captured by smaller firms (Arrow, 2000).

In addition, small and medium firms' base provides the opportunity of improvement that adds to higher growth prospects. They participate more in tradable goods sector, which also provides the greatest of all opportunities to improve.

These have ideas and cope for improvements, but banks may not provide loans, due to complete liability of the firms i.e. proprietorships. However, if one looks at the more dynamic ones, say industrial districts, the ones that define industrial differentiation with higher growth prospects, there is the small-large firms nexus. Then, larger banks are in a better position to take advantage of them. However, (i) the smaller banks focus can be on some aggregates, which would be the focus of advances, and (ii) initial improvements depend on growing market size, which is provided by few growing regions, or by fiscal support.

Here, endogenous money, which has to be backed up by reserve support by central bank, hence increases in base money (importantly, fiscal borrowing), provides the aggregate demand support. However, higher growth has to be actualized; banks exposure to scale factor, which does not add to the growth prospect, has to be minimized. Of course, the state of the economy is important, but if there is monetary constraints, state of the economy would be constrained. If on the other hand, monetary constraints are removed, and higher fiscal deficits target traditional sectors, and individualistic small and micro units, smaller banks can recuperate by providing matching loans for any own investment/assets creation by the units. There has to be an institutional arrangement (aggregates?) whereby banks can provide loans to these, without collateral i.e. guided by income prospects of the additional assets created by the units (which in a growing market case would have higher resale value).

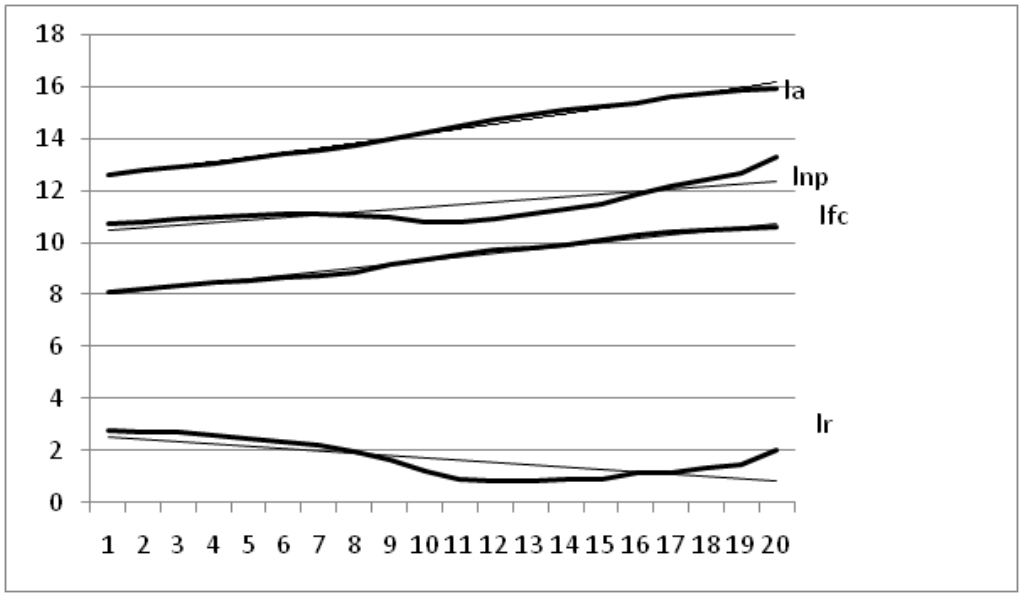
**In Lieu of a Conclusion**

The basic hypothesis is: higher growth of advances permits lower growth of ratio of NPAs to advances. There is a basic constraint; advances should relate to growth prospects, say, the growth of gross capital formation; if advances grow when rate of investment is slowing down, the incidences of NPAs, as a percentage of advances would grow; higher growth with respect to fixed capital formation in Keynes's spirit, would lower the percentage.

Given the above observations, some empirics are in order. Taking the period 1997 to 2016, and log values of (i) gross advances (la), (ii) gross NPAs to gross Advances ratio (lr), and (iii) gross fixed capital formation (lfc), the correlation coefficient between (i) and (iii) is 1 (almost perfectly and positively correlated), shows that gross advances are quite in line with the evolution of gross fixed capital formation (all these despite some possible mismanagement issues with respect to evaluation of projects, as discussed earlier).

More important perhaps, the correlation coefficient between la and lr is -.77, which indicates support for the basic hypothesis advanced in this paper i.e. higher pace of advances would be the clue to management of the NPA ratio. Fig.1 depicting the evolution of the three variables, with respective (linear) trend lines, supports the hypothesis. Particularly, it can be seen that phases of high growth of advances (the graph on top) reduces the ratio (the graph at the bottom), and the recent increases in the ratio is associated with a phase that marks decline in the pace of advances.

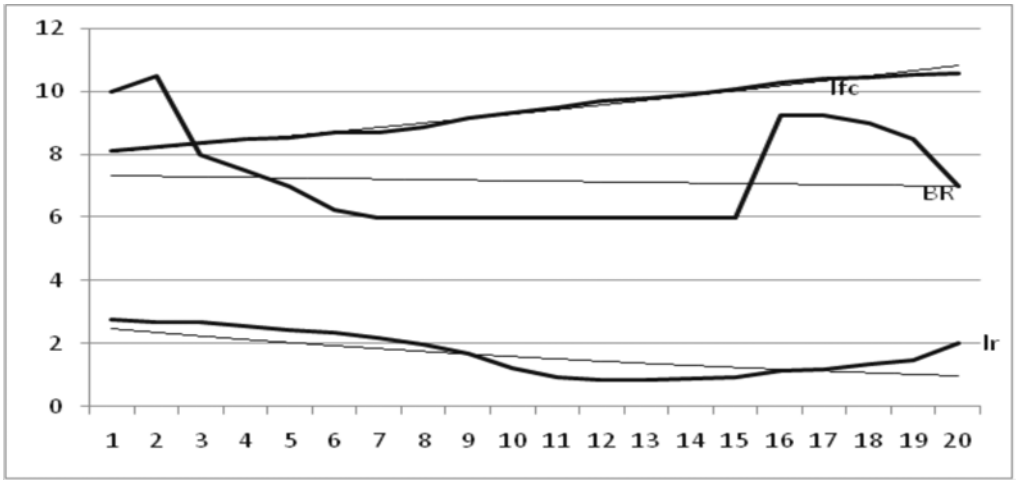
**Fig 1 Pattern of Advances and NPAs**



It can be stressed that the growth of advances in line with that of the growth of fixed capital formation (lfc – the second graph above and the first graph below) can be true of both exogenous and endogenous money thesis. However, money thesis can also matter, and the basic difference would be the evolution of bank rate, as the policy variable; for instance, higher bank rate phases could be viewed as exogenous money phases.

Fig.2 shows that a period that marks a decline in the bank rate (the graph in the middle) is associated with lower lr (the graph at the bottom), given the advances growth. Lower and stable bank rate could be the key; a tendency towards somewhat higher bank rate marks the recent phase of higher ratio

**Fig. 2 Pattern of NPAs and Bank Rate**




It can be argued that the results are too macro. Still, the point is: if banks are aligned to growth prospects, the money perspective i.e. the bank rate, matters. It should be stressed that endogenous money thesis generally would be associated with higher pace of aggregate demand. Higher bank rate, given the growth of advances, banks, especially those who have exposed themselves to projects with higher scale based fixed costs that comes with higher ex-ante profits, would be expected to experience higher NPAs in this score. It was already discussed that in high bank rate phase, smaller banks would suffer the most. Growth of demand also supports traditional firms, and provides the opportunity to smaller ones to improve. High bank rate phase negates these sources/avenues to the smaller banks; their NPA percentage, ex post, can be higher. Here, one can refer to that

**Recent NPA "crisis" also highlights that the more the exposure to higher fixed costs, the higher incidence is the banks' stressed assets, and smaller banks are facing the heat most.**

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