

A Review of the Theoretical Framework for Non-Performing Loans and their Determinants

Dr. Shailesh Singh Thakur
Assistant Professor
IPS Academy IBMR, Indore MP

CS Kshema Shrivastava
Assistant Professor
IPS Academy IBMR, Indore MP

Abstract

Empirical academic literature has ample body of scholarship on Non Performing Assets of banks. However the conceptual body of knowledge related to Non Performing Assets and its Determinants is scattered and has intertwined scholarship in economics and bank financial management. This paper is an attempt to organize the conceptual scholarship and literature related to Non Performing Assets and its Determinants.

1 Introduction

Non-performing assets are an intrinsic part of any lending and credit business, be it banks or other financial institutions. The real challenge nonetheless is to attempt and keep the levels of such non-performing assets within a comfortable and productive range, similar to attempts which try to balance between growth and inflation in an economy. Thus the task is to have a satisfactory level of non-performing assets, if not completely eliminate it.

One of the basic requirements of a well-functioning financial system is the proper management and maintenance of non-performing assets (NPA) and keeping it within a comfortable and satisfactory range. NPAs beyond a certain level cause concern because a non-performing loan affects recycling of credit and credit creation. It impacts profitability, requires higher provisioning and concerns not only bankers but regulators and policy makers alike who are entrusted with fuelling the economic growth.

Vast body of literature exists on the empirical aspect of Non-performing assets. Although very few and scattered literature exists on the real theoretical concepts and notional determinants of Non-performing assets. This paper is an attempt to summarize the conceptual and notional theories pertaining to Non-performing assets in any banking sector. The paper is divided into four parts. First part is the introduction, the second part discusses the Debt Maturity Theory, The Multiple Lending Theory, Soft Budget Constraint Theory and the theory of financial intermediation. The third part discusses the Free Rider Problem, The Adverse selection problem and The Moral hazard problem. The fourth part discusses the amalgamation of these theories and their culmination in non-performing assets.

Part-II

2 Debt Maturity Theory and Risk of Default (Diamond and He -2012)

Diamond and He (2012) disseminate that debt maturity has influence on debt overhang. They propagate that decreasing maturity can increase or decrease debt overhang even when shorter term debt's value depends less on firm value. Further, they suggest that in comparison a future overhang is more volatile for shorter term debt. This makes future investment incentives volatile and influences immediate investment incentives.

Long-term debt causes overhang, because it prevents equity from receiving any payoff from investment when the ex-post payoff is low enough that there is a default. Short-term debt with the possibility of default can impose even greater overhang, simply because there is less uncertainty resolved over the shorter time until it matures, and as a result most part of the initial increase in value (due to investment or bailout to avoid default) will not result in any payoff to equity. Short-term debt shares less risk (which includes both losses and gains) with equity than long-term debt does. As a result, short-term debt then imposes either no overhang (if riskless it leaves all marginal returns to equity) or large overhang (if likely to default, it leaves very little marginal returns to equity). This implies that a given issue of risky short-term debt has an overhang effect that fluctuates more than that of long-term debt as assets in place fluctuate in value after debt is issued.

The timing of debt maturity can have a major impact on investments, especially on investments that can help avoid default. The problems caused by large impending debt maturity go beyond the risk of runs and limited access to liquidity. The timing of repayments, access to lines of credit, and the pricing of credit lines all combine to either amplify or reduce the risks of potential default.

3 Multiple Lending Theory and Creditor Rights (Bennardo, Pagano, & Piccolo - 2008)

When a customer can borrow from multiple banks, lending by each bank increases customer's risk of default. When a customer can borrow from several competing banks, multiple lending raises default risk. If creditor rights are poorly protected, this contractual externality can generate novel equilibrium with strategic default and rationing, in addition to equilibrium with excessive lending or non-competitive rates. Information sharing among banks about clients' past indebtedness lowers interest and default rates improves access to credit (unless the value of collateral is very uncertain) and may act as a substitute for creditor rights protection. If information sharing also allows banks to monitor their clients' subsequent indebtedness, the credit market may achieve full efficiency.

4 The Soft Budget Constraint Theory (Janos Kornai -1979)

In many segments of contemporary economies a remarkable trend can be discerned: the budget constraints of economic units become 'soft'. The phenomenon appears in mixed economies and is conspicuously apparent in socialist systems. The 'soft budget constraint syndrome' is usually associated with the paternalistic role of the state towards economic organizations and private firms, non-profit institutions and households.

The trend toward the softening of the budget constraints has many interrelated consequences. Kornai discussed three of them: the impact on price responsiveness, on efficiency and on the creation of excess demand. The scope of the current research limits us on the second aspect which Kornai has discussed as under: The most important issue is dynamic adjustment. If the budget constraint is hard, the firm has no other option but to adjust to unfavourable circumstances by improving quality, cutting costs, introducing new products or processes, i.e. it must behave in an entrepreneurial manner. If, however, the budget constraint is soft such productive efforts are no longer imperative. Instead, the firm is likely to seek external assistance, asking for compensation for unfavourable external circumstances. The State is acting like an overall insurance company taking over all the moral hazards with the usual well-known consequences; the insured will be less careful in protecting his wealth.

5 The theory of financial intermediation

The basis of theories on financial intermediaries is the economics of imperfect information. Financial intermediaries reduce information asymmetry and costs of transactions between lenders and borrowers. Financial intermediaries ensure efficient markets, channeling credit to those entities which require economic capital.

The role of financial intermediaries as per the literature is two-dimensional. One is an intermediaries' provision of liquidity and the other one is its ability to tweak and transform the risk characteristics of assets. Both the dimensions tend to reduce the transaction costs or the cost of channeling funds between borrowers and lenders. This leads to an efficient allocation of resources; which in general has been considered a primary objective of financial intermediation.

Diamond and Dybvig (1983) study the provision of liquidity by such intermediaries, particularly banks. In their model, the depositors are risk averse and not certain about the timing of their need for money or consumption. Thus in absence of an intermediary, investors lock themselves into illiquid investments of long-term yields and thereby ensuring high returns only to those depositors who consume late. But for those who use money early must receive lower returns as early consumption would prematurely liquidate long-term investments. The entire basis of banks Asset Liability Management is this principle of financial intermediation which suggests that banks offer better risk distribution among causes who need to devour at un-alike times. An intermediary ensures risk sharing and welfare by ensuring that depositors receive a higher payoff for early consumption and a lower payoff for late consumption compared to absence of intermediated cases.

Financial intermediation causes transforming risk characteristics of assets by dealing with a market failure and answering the information asymmetries. Information asymmetry in lending arises as borrowers know more about their investment projects than lenders. An ex ante information asymmetry is when a lender miscalculates the risk profiles of borrowers with different credit risks before lending and leads to an adverse selection. An adverse selection problem is when increase in interest rates leaves a comparatively higher risk profile borrowers in the credit market. Financial intermediaries are then more likely to be lending to high-risk borrowers, because those who are willing to pay high interest rates will, on average, be worse risks.

An ex post information asymmetry arises when only borrowers can foresee and calculate actual returns after project completion, but not lenders. This leads to a moral hazard problem. Moral hazard arises when a borrower engages in activities that reduce the likelihood of a loan being repaid. An example of moral hazard is when firms' owners "siphon off" funds (legally or illegally) to themselves or to associates, for example, through loss-making contracts signed with associated firms.

If costly privately-produced information can subsequently be used at less cost by other agents, there will be inadequate motivation to invest in the publicly optimal quantity of information (Hirshleifer and Riley, 1979). When banks receive information they should relay information advantage to lenders without losing information advantage. Financial intermediaries get information at a lower cost than individual lenders as it avoids duplication of efforts in gathering information. Also increasing returns to scale to financial intermediation makes the costs still lower. Intermediaries thus develop expertise in evaluating prospective borrowers and capital investments.

Leland and Pyle (1977) show how an intermediary can communicate information to investors about potential borrowers at a lower cost than can individual borrowers. In Leland and Pyle's model intermediaries can solve the moral hazard problem by monitoring the actions of firms.

Diamond (1984) argues that a moral hazard problem and subsequent default may arise even if a project is successful if the outcome of the project is not known ex post to lenders. However if information is gathered to assess the outcome it may be otherwise but this would result in costly information gathering. Diamond delegates the costly task of monitoring loan to financial intermediaries in his model. Thus an intermediary has to choose a loan in such a way that it has reasons and returns to monitor the project, and make sufficient returns to depositors to attract such deposits.

Adverse selection problem and the moral hazard problem may result in in some circumstances where lenders would rather not make a loan. A situation of 'lazy banking' as described by some experts on banking sector. This may result in credit rationing, where some loan applicants do not receive full amount applied for, or they may be denied a loan.

When an applicant applies for a loan, the lender considers him coming from a pool of applicants for whom the lender has decided the risk premium ex ante and similarly the probability of default has been taken into account on an aggregate. This may result in borrower with good credit profile paying premium for lesser credit quality borrowers. Also they are accepting lower sized loans arising out of credit rationing. The good credit profile borrowers may accept this credit rationing of lower ticket size loans if this results in aggregate lowering of risk premium.

Financial intermediaries engage in more efficient resource allocation and reduce the transaction costs of routing capital between depositors to such users and uses which require higher degree of information and difficult pay-off evaluation. Thus intermediaries must and does have expertise in information gathering, project payoff evaluation, performance appraisal and risk sharing.

Part - III

6 Free Rider Problem

A free rider problem occurs when people can enjoy a good or service or even a resource without paying for that good or service or resource. It also occurs when people pay anything or do not make a comparatively smaller contribution towards the benefit which they have received. The adverse effect of a free-rider problem is under-provision or no provision of that benefit or resource. Many authors see a debt waiver program creating free rider problem and thus creating unsustainable expectations for the future.

7 Adverse Selection Problem: Information asymmetry prior to the financial transaction

Adverse selection problem is a risk management notion dealing with the idea of rigged trade. It arises ex ante to a financial transaction as a result of information asymmetry between buyer and sellers or vice-versa. If a buyer has access to private information about the advantage, benefit and quality of a product more than the seller and some of the fellow buyer as-well, he will surely engage in such a trade because he knows that he will benefit most from such a deal or trade. When such a situation arise the market will be adrift with such bad customers only who are looking for a one-sided beneficial deal. Thus bad customers only apply for services or goods.

The remedy to adverse selection is adequate due-diligence and screening of the customers. In credit markets the terms use are credit appraisal and credit quality. Usually a more often used remedy to deal with adverse selection is rationing or higher prices, in financial terms to limit coverage and increasing premiums. Thus consequences of remedies to adverse selection may further create more problems. If prices are increased then prime quality customers may not want to buy at all and leave the market. This in-turn will leave the market with bad and worse customers only. Even if prime customers choose the product they pay higher prices compared to their low risk profile and receive a lower portion of product due to rationing.

8 Moral Hazard Problem: Information asymmetry /inability to control behaviour after the financial transaction

Moral hazard is a situation in which one person involves in a more risky behaviour or affair with the knowledge that he has protection or insurance against the risk and that he will not incur costs at the event of realization of the risk i.e. in event of negative outcome. The person engages in a risk loving behaviour only because he does not have to bear the costs of those risks in event of failure. Moral Hazard problem arises when a transaction has taken place and the first has changed his behaviour thereby bringing the other party at a dis-advantageous position. In credit intermediation a borrower post disbursement of a loan may show

such behaviour which could culminate in loan default. It may occur when the borrower has knowledge that someone else will be responsible for the loan default or wilful default and diversification of funds is possible.

In cases of willful defaults, frauds, siphoning off funds and diversification of funds the borrower may hide its true intention. The future defaulting party has already en-cashed the situation and starts behaving inappropriately after disbursement of loan.

Part – IV

The emergence and accumulation of non-performing loans on banks' balance sheets is often thought-about a micro-prudential issue. NPAs come back to the eye of macro-prudential authorities once they weaken a major a part of the economic system, threatening its stability or impairing one or a lot of of its core functions, like the availability of credit to the important economy. On an abstract level, numerous imperfections might concern policy actions on the management of NPAs. These embrace unaddressed externalities, economies of scale and coordination failures, institutional distortions (stemming from the accounting, regulative and tax treatment of NPAs or the judicial and market structures required for his or her economical resolution) and financial loss vis-à-vis the suppliers of the banks' safety web.

Until the beginning of the 1990's the state of financial sector in India could be described as a state of financial repression. Lack of commercial considerations in credit planning and weak recovery culture resulted in large accumulation of non-performing loans (Mohan, 2005). The crisis in debt recovery in many countries in the Asian and Pacific region has profound implications for their economies and economic institutions. Effective credit allocation and debt recovery are central to the proper functioning of an economy. Managing asset quality is always very important and becomes a prominent objective especially during a period of economic downturn.

'Loan Recovery' is the main factor that determines the quality of loan assets of banks and that lower recovery indicates erosion of banks' profitability and blocking of bank credit to developmental projects of the area. Thus, the success of the commercial banks rests on improvement in their assets quality.

The financial strength and viability of banks should really be measured in terms of the quality of their assets and the good rate of growth of their deposits year after year (Narasimhan Committee on Financial Systems-1991). Asset quality is one of the parameters that define the strength and resilience of the banking sector (Gandhi, Feb 2016). Meeker & Gray (1983) review bank asset quality in the form of non-performing asset information and suggest that the non-performing asset information can be useful aid in analysing the asset quality of banks.

It may appear that the problem of asset quality, loan recovery and eventually NPAs is an individual balance sheet question for the banks; but analysis links the seemingly micro and individual commercial situation to condition of the economy as a whole, creating a contagion like circumstances.

Non-Performing Assets indicate weakened asset quality and hence weakened future income generating prospects. This requires provisioning which has implications with respect to capital adequacy. Declining capital adequacy adversely affects shareholder value and restricts the ability of the bank/institution to access the capital market for additional equity to enhance capital adequacy. If this happens for a large number of financial intermediaries, then, given that there are large inter-bank transactions, there could be a domino kind of effect. Low capital adequacy will also severely affect the growth prospects of banks and institutions. With weak growth outlook and low functional efficiency, the sector as a whole will not be able to perform its role and will adversely affect the savings investment process. Once we realize this, it is evident that a micro problem of a bank translates into a macro problem of the economy. Capital market development takes a back seat and GDP growth rate weakens. The adverse effects of

fiscal deficit loom large and a balance of payments crisis also cannot be ruled out. Banking crisis and foreign exchange crisis get interlinked.

The NPAs of banks is an important criterion to assess the financial health of banking sector. It reflects the asset quality, credit risk and efficiency in the allocation of resources to productive sectors. Since the reform regime there have been various initiatives to contain growth of NPA to improve the asset quality of banking sector.

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