INTRODUCTION

The Background

In 1991 India started a vigorous transition process from a centrally planned economy to a market oriented one with the launching of a programme of economic reforms. In the pre reform period, India followed administered financial regime with a view to channel resources in to desired investment. It has been argued that, administered interest rate ceilings suppress the savings rate, thus reducing the availability of loanable funds and investments, and also leads to inefficient allocation of resources. Therefore, financial sector liberalisation is recommended (McKinnon 1973; Shaw 1973; World Bank 1989a). The motivation underlying economic liberalisation in India was the recognition that central planning fostering state controls failed to work and that the private sector could play an important role in boosting investment and spurring economic growth. The changes in economic policies led to reversing the roles of the public and private sector, with private sector being given a pivotal role in the growth of the economy. With this, private corporate sector (here after corporate sector) acquired a lead role in the economy. Thus rate of capital formation or investment of corporate sector became central to the economic performance of the country.

1 Since public sector investment in most developing countries is effectively a policy variable, economists have focused on private sector investment as being susceptible to extensive analysis. Also contributing to the interest in private investment activity is recent research suggesting that private sector investment has been more directly related to economic growth in developing countries than has public sector investment (Khan and Reinhart 1990). In recent years, there have been several studies about the determinants of private investment in the context of policy changes in developing countries. See Wai and Wong (1982), Blejer and Khan (1984), Greene and Villaneuva (1991), Chibber et al. (1992), Serven and Solimano (1993) etc. among others.

2 In this study, the corporate sector is defined as non-financial, non-government join stock companies. The corporate sector consists of closely held (private limited) and publicly held (public limited) companies, with approximately 6.19 lakh registered companies as of June 2003, about slightly less than half of them are engaged in manufacturing. As a percentage of GDP, the estimated paid-up capital of the non-government companies constitute 12.1 per cent (Government of India 2003).

3 Coen and Eisner point out, “classical and neoclassical economists have stressed the role of investment in providing for the future. Maintaining the current level of output requires keeping up the existing means of production. Economic growth, or the increase in the rate of output, is then seen as depending considerably on the acquisition of additional means of production, that is investment in excess of the wearing away or depreciation of existing capital” (1987: 981). The empirical literature on economic growth consistently showed that accumulation of physical capital or investment is an important determinant of economic growth.
The broad objective of financial sector liberalisation in India was to ensure that the market oriented financial sector contribute positively to economic growth by providing access to external funds and by channelling investment towards growing profitable industries and firms. In the new milieu of financial reforms, market forces increasingly govern the allocation of funds and this has implications for the availability, cost and quantum of funds, which *ceteris paribus* will enable the corporate sector to make an optimum combination of sources of funds for industrial investment and its pace. Financial sector liberalization, it was expected, will alter the parameters of investment functions because of the relaxation of credit constraints and influence of reduced borrowing costs on investment decisions (Guncavdi et al. 1998).

During 1950s, studies on corporate finance argued that under perfect financial market setting, financial structure does not affect the investment decision of firms. In other words, the role of financial intermediaries was ignored till the late 1960s. The neutrality of financial factors, however, confronted with criticisms after the emergence of theoretical and empirical studies with results inconsistent with earlier models. The thrust of the literature opted to move away from the traditional theories and placed emphasis on the role of financial sector, since it is argued that changes in the financial factors will have its influence on the allocation of capital. These studies emphasise the relationship between finance and investment, and provide a framework for analysing the financing patterns and investment behaviour of corporate sector. Though financial liberalisation is still on the way, based on the theoretical argument of financial liberalisation and its limitation in the context of asymmetric information, it is pertinent to analyse the impact of financial

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4 A firm can mobilise resources mainly from two sources viz., internal and external. While internal sources are retained earnings and depreciation, external sources include borrowings (Banks and Development Financial Institutions) and equity capital.


6 This is because in recent times, the neo-liberal paradigms of financial development and the McKinnon-Shaw argument of financial liberalisation are limited by certain micro economic arguments based on market failures and information asymmetries in financial markets. The neo-liberal approach of financial liberalisation is based on perfect competition, which says that all information is freely available to all economic agents in the market. However, in reality information failures in loan markets and the consequent credit rationing may occur between the buyers and suppliers of productive capital (Stiglitz and Weiss 1981). We provide a detailed discuss on this in our theoretical underpinnings.
liberalisation on financing choices and investment of firms. However, there are hardly any studies, which have empirically examined the impact of financial liberalisation on the financing pattern and capital structure of corporate sector in the Indian context. A perusal at the Indian corporate financing scenario in the post financial liberalisation period reveals that there is a reversal in the roles of internal and external resources towards the later period of reforms. The private corporate sector has placed increased dependence on internal resources than on borrowed funds (debt and equity). After a boom in equity resources in the initial years, capital market resources met with a drastic decline after reforms. With regards to bank borrowings, it has been stagnant, but with an upward bias. However, this upward bias is seen in the context of a declining share of external sources of funds of firms. Against this dismal performance\(^7\), it is to be analysed that in spite of a substantial decline in interest rates and stock market boom after liberalisation, why is the Indian corporate sector depending more on internal resources than on external resources from financial markets? Against the above background, the present study focuses on the analysis of financing patterns, determinants of capital structure and investment of the Indian private corporate sector with specific reference to financial liberalisation. The need for such a study is relevant both for its theoretical and policy implications, particularly in the context of financial reforms in India.

The present chapter presents the analytical framework, review of empirical studies, objectives of the study, methodology, and chapterisation. The chapter is divided into four sections. Section 1.1 provides a brief account on the policies of financial liberalisation and its implications for financing choices and investment. Section 1.2 discusses the analytical framework of the study. We focus on recent theoretical arguments of information asymmetry, which limits the expected advantages of financial liberalisation for the corporate sector. Section 1.3 reviews the empirical studies related to the financial market development and financing choices of firms in the corporate sector. Section 1.4 states the objectives of the study. In section 1.5 a brief description on the methodology and data sources is given. Chapter scheme of the study is given in section 1.6.

\(^7\) A detailed analysis of these trends is carried out in the second chapter while analysing the financing pattern of the corporate sector in India.
1.1 Financial Liberalisation

During 1970s and 1980s, there emerged a consensus that “government failure” is a feature of planning and consequently a neo-liberal view has emerged on the working of financial markets. Goldsmith (1969) and later McKinnon (1973) and Shaw (1973) persuasively challenged financial repression. Goldsmith (1983) also presented a case of higher marginal productivity of capital due to financial liberalisation. McKinnon analysed an economy with very limited possibilities of external finance for the vast majority of investors. He argued that, because of the lumpiness of capital, savers might find it convenient to accumulate funds in monetary assets until they have enough resources to invest in higher-yielding physical assets. In McKinnon’s words, deposits may serve as a “conduit” for capital formation, making deposits and capital complementary assets. The availability of deposits with positive real rates of return may thus encourage both saving and capital accumulation. Shaw also stressed the importance of positive real deposit rates as an inducement to save in financially repressed economies; but, unlike McKinnon, he emphasised external rather than internal financing possibilities as the effective constraint on capital formation. Focusing on the role of deposits as a source of funds for financial intermediaries, Shaw argued that high deposit rates may stimulate investment spending by allowing supply of credit to expand in line with the financing needs of the productive sectors of the economy.

McKinnon and Shaw (1973) explicitly focused on important financial intermediation elements like deregulation of interest rates, reduction in reserve requirements, phasing out of directed credit programmes, and removal of interest rate ceilings. According to McKinnon, high rates of interest for borrowers introduce dynamism that one wants in development, calling forth new net savings and diverting

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8 The government have long intervened in the financial sector not only to preserve financial stability and protect the public from unexpected losses, but also to limit concentrations of wealth and monopoly power. The experience of many developing countries showed considerable deterioration in their allocation of capital under financial control. Financial systems contracted or remained small and the efficiency of their lending (and collection) and of their proportions was low, eventually leading to widespread bank insolvency. See Voridis (1993), Fry (1980), Galbis (1977), Mathison (1980), Demetriades and Luintel (1997) etc. among others for discussion on financial repression.
investment from inferior uses so as to encourage technical improvement. High interest rate would encourage mature borrowers to seek equity finance instead of bank loans. Liberalisation of interest rates will bolster up savings and encourage new private investment.

The financial sector in developing countries had undergone radical changes over the 1990s—both domestically and internationally. Reforms focussed on creating a deregulated environment and enabling free play of market forces while at the same time strengthening the prudential norms and the supervisory system. What are the requirements for effective financial intermediation, and what challenges arise in the process of financial reform? In the subsequent sub sections we discuss various aspects of financial liberalisation in India.

1.1.1 Liberalisation of Interest Rates

The work of McKinnon (1973) and Shaw (1973) offered a theoretical and empirical foundation for the relationship between monetary factors and investment. It was argued that there is a strong and positive correlation between financial development and economic growth of a country (McKinnon 1973; Shaw 1973). The McKinnon-Shaw hypothesis highlighted the negative impact of 'financial repression'. Financial repression means government controls in the formal financial sector, which may thwart the development process. For example, the government may have a monopoly over the banking system and restrict the growth of financial institutions. Private sector banks may have to keep high reserve requirements and lend compulsorily to the government to finance its deficits. The central bank may impose credit rationing on the commercial banks, or insist that banks lend to certain priority sectors. Nominal interest rates may be kept artificially low, so that with inflation the real interest rate is negative, discouraging the acquisition of interest-bearing financial assets (Warman and Thirwall 1994). It is argued that regulations in financial markets lead to distorting incentives of savers and investors in such an economy. Regulations such as deposit interest rate ceilings, minimum/maximum lending rates, quantity restrictions on lending etc cause real interest rates to be
negative and unstable, especially in the presence of high inflation in an economy.
The policy prescription of McKinnon-Shaw for financial repression was financial
liberalisation. They argued that the market clearing interest rates and reduced
government intervention by financial liberalisation could raise allocative efficiency
through higher savings and investment.

According to McKinnon, since the real deposit rate of interest positively influences
saving, a high real deposit rate due to liberalisation will encourage investment on
the basis of the assumption that ‘savings determine investment’. Shaw (1973) also
emphasized the significance of positive real deposit rates in inducing savings in
financially repressed economies; but in contrast to McKinnon, he gave special
emphasis to external financing possibilities as the effective constraint on capital
formation. Focusing on the role of deposits as a source of funds for financial
intermediaries, Shaw argued that high deposit rates might stimulate investment
spending by allowing the supply of credit to expand in line with the financing needs
of the productive sectors of the economy. Because, increased role of financial
intermediaries, will enable them to reduce transaction costs between savers and
investors through economies of scale and risk diversification etc. and hence, can
offer more attractive deposit accounts to savers and lower loan rates. Evidence in
support of the McKinnon-Shaw hypothesis was generally missing and mixed at
best. However, studies in this direction has helped subsequently the researchers to
incorporate availability of credit or finance as a main determinant of private
investment in developing countries instead of relying only on interest rates which
are administratively regulated.

The liberalization of interest rates could affect the real interest rate, the volume of
intermediation and banking sector efficiency by permitting greater competition. For
instance, the level of the real interest rate would have an impact on the interest cost
of capital, the volume of savings, and possibly the distribution of funds through
adverse selection incentives.9 The existence of a very low or negative real interest
rate would result in the support and expansion of unproductive, non-viable

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projects, and the channelling of funds in to consumption rather than investment, which would be detrimental to the growth process. Sufficiently positive real rates can improve the efficiency of investment, while very high real rates can affect the soundness of the banking system and adversely affect allocative efficiency. The unusually high real interest rates may also affect the factors like lack of credibility, a country risk premium, or fragility of the banking system. The theory of financial liberalization argues that rising real interest rates at the market clearing levels induces more saving and investment and therefore acts as a positive stimulus to economic growth. The neo-liberal approach argued for a liberal financial system where the interplay of market forces rather than government intervention is the desirable goal of public policy, as pointed out by Gertler and Rose (1994):

Suppose that perfect competition exists, that information is freely available and that individuals can credibly commit to honouring all agreements...implies that everyone is able to borrow or lend at risk-adjusted rates of interest. Market forces consequently allocate income efficiently between savings and consumption, and then in turn, allocate saving efficiently across investment projects. Each individual adjusts his saving to equalise the marginal utility of future consumption. The total funds furnished from saving, flow to equalise risk-adjusted marginal returns across investment projects. Competitive forces ensure that lending and borrowing rates adjust to clear markets and no one earns extra-normal profits. And the entire process is costless (p.15).

1.1.2 Capital Account Liberalisation

Domestic financial sector reforms generally necessitate external sector or the capital account liberalization to yield the best results. Domestic liberalization can lead to a re-flow of capital flight and improvements in capital accounts, especially if accompanied by external sector liberalisation. Capital account liberalisation can improve a country’s ability to tap global savings (at a lower cost than using only domestic savings); allow economic agents the freedom to chose how and where to

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Demirguc-Kunt and Detragiache (1997) empirically demonstrate the connection between financial liberalization and financial fragility.
borrow, invest, or exchange assets; improve resource allocation through increased competition for financial resources; and increase the availability of resources to support investment, finance trade, and boost other significant economic sectors (Johnston et al. 1999: 245). The liberalization of capital flows can be viewed as one aspect of a broader program of financial sector liberalization. Financial capital has become highly mobile across countries as a result of the gradual globalisation of financial markets that followed from widespread deregulation and innovations in communication and transaction technologies. As capital mobility increases, the flow of resources to the specific country increases, making provision for increased investible resources.

Eichergreen (2002) pointed out two perspectives on capital flows. The first shows international capital mobility as an engine of growth through the relaxation on resource mobilization for investment and the second one sees capital mobility as a source of instability since international capital movements are volatile due to information asymmetries when lenders and borrowers are separated by physical and cultural distance. In the cross-country growth literature the two channels that produces growth through capital account liberalization are the impact on investment and impact on the depth of and development of financial markets, though the studies about the impact of capital account liberalization on investment generally does not give a clear evidence of any impact (Rodrik 1998; Kraay 1998). But in the case of interest rates and financial depth (investment depends on these factors), it is noted by many, that capital controls are associated with lower real interest rates. Klein and Oliveli (1999) showed financial depth due to capital account liberalization, but the relationship dissolves when the OECD countries are removed from the sample. This forced them to argue that the capital accounts openness would do more in the advanced industrial countries by stimulating the well-developed financial markets. However, Levine and Zervos (1996) criticized this

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11 See Obstfeld (1986), Eichergreen (2002) etc. for both theory and measurement of capital mobility.
13 Financial depth is measured in terms of change in the ratios of liquid liabilities to GDP, claims on the non-financial private sector relative to GDP, deposit money and bank domestic assets relative to the sum of these and central bank domestic assets.
argument by showing evidences of increased liquidity for 16 developing countries after the capital account liberalization. This may be due to the deregulation of the stock market; especially the operation of the new issues market and relaxation of restrictions on the entry of foreign portfolio investors will boost investment in these countries. It could also be that banking systems typically are already relatively well developed when capital accounts are opened, so that the main effect of capital mobility is on stock markets whose development is still at an earlier stage.

1.1.3 Devaluation

Devaluation aimed at reducing external imbalances and promoting tradable goods activities is another important ingredient of most adjustment programs associated with external reforms that affects investment. In recognition of the high import content of intermediate and capital goods in developing countries as well as the universality of devaluation in adjustment programs, the real exchange rate is often included in the investment model. A real depreciation affects investment through three main channels: the real cost of capital goods, the real interest rate, and real output. In the long run, real devaluation is expected to lead to an increase in investment in the traded goods sector and a decrease in the non-traded goods sector with ambiguous overall effect (Buffie 1986; Branson 1986). In the short run, an expected real devaluation under restricted capital mobility and high import content of capital goods is supposed to lead to an investment boom as the expected depreciation lead to a switch to foreign goods. Such a boom must also subside after the actual devaluation due to the associated increase in cost of imported goods. However, the result for aggregate investment is uncertain. Devaluation affects the profitability of investment through real interest rate. If unanticipated, devaluation raises the price level through its impact on the cost of imported intermediate inputs and wages under indexation. If monetary policy does not fully accommodate the increase in the price level, real money balances fall, pushing up the real interest rate (user cost of capital) for a given rate of (anticipated) inflation, which would reduce

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15 For a detailed analysis of this issue see Lizondo and Montiel (1989).
investment. But, if the devaluation was anticipated which succeed in eliminating the
devaluation expectations, it may result in rise in investment, since the required
return on capital would tend to fall reflecting the reduction in the anticipated rate of
depreciation (Serven and Solimano 1993).

1.1.4 Current Account Liberalisation

As in the case of capital account liberalization, changes in the current account
policies also affect investment behaviour. Current account liberalization consists of
policies like sustained relaxation of import controls mainly for capital goods,
reductions in customs tariff rates, abolishment of licensing systems etc. These
policies aimed at greater openness of the economy that can contribute to the growth
of aggregate investment in the economy.

It is argued that a liberal trade regime is superior to a restrictive trade regime in
achieving greater development of an economy. This has led to the emergence of
discussion on the issues involved in a shift away from a controlled and hence
distorted trade regime toward a more liberal one. One among these is the
complementarity between trade liberalization and domestic financial markets.
According to McKinnon, “trade liberalization and financial liberalization are the
two measures that will lead to increase in investment” (1991: 366). In other words,
they are complementary. Financial liberalization complements trade liberalization
on both demand and supply side. On the demand side, interest rate deregulation
gives opportunities for those earning increased income from a trade liberalization to
hold financial assets as alternatives to non-tradable. Now, if we consider the supply
side, financial sector reform augments the loanable funds stimulated by trade
liberalization.

Trade liberalization sparks investment led growth by lowering the prices of traded
goods and services to those of non-traded goods and services16. This price change
induces an inter-sectoral expenditure shift that favours the capital-intensive sector.

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16 Many studies in this direction have shown that openness to trade raises investment rates in a wide
range of countries. See Barro (1991), and Baldwin and Seghezza (1996). Baldwin and Seghezza (1996)
argued that trade liberalization promotes growth only by promoting investment. That is, if the
investment rates are controlled for, openness has no additional impact on growth.
As a result, rate of return to capital accumulation rises, thus triggering investment led growth. The logic behind this rests on the fact that traded goods and services are capital intensive relative to non-traded goods and services, and the reciprocal trade liberalization encourages expansion of traded sectors at the expense of non-traded sectors. Apart from the capital-intensities, key assumption is that the optimal expenditure share on traded sectors rises as the price of traded goods falls relative to that of non-traded goods (Baldwin and Seghezza 1996: 8).

There are three links driven by the procompetitive mechanisms\textsuperscript{17} that induce growth through investment under trade liberalization. The first one is the pro competitive effect in the investment goods sector. According to this, more competition through trade liberalization means a lower price of capital, which raises the steady state capital stock, there by triggering investment led growth. The second procompetitive mechanism forces an increase in the output of the traded goods sector and, in turn, it boosts the derived demand for capital. This will trigger the process of capital formation. This link is based on the assumption that capital is used in the manufacturing of trade goods. The last link is the role of financial intermediation under trade liberalization. If banks are imperfectly competitive and financial services are traded, the wedge between the rate savers receive and investors' pay is endogenous and affected by trade policy reforms. In particular, reciprocal liberalization of trade in financial services leads to a pro competitive effect that reduces this wedge and thereby boosts the steady state capital stock in both countries\textsuperscript{18}.

To sum up, the above theoretical arguments put forward a strong case of liberalisation in countries with repressed and underdeveloped financial structure. During the last three decades domestic financial markets in developing countries have become less segmented and more integrated with world financial centres (Kincaid 1988). Financial liberalisation has diminished the segmentation of domestic financial markets and increased the access of domestic institutions to international

\textsuperscript{17} This is a mechanism by which reciprocal trade liberalization lowers prices and expands output in all liberalizing countries.

\textsuperscript{18} For a detailed description about each of these procompetitive mechanisms see Baldwin and Seghezza (1996).
sources of finance. Liberalisation has proceeded along two basic lines: relaxation of price and quantity restrictions and easing of controls on certain types of financial activities. Liberalisation measures have either eased relaxation on the right of establishment (such as entry of new foreign banks, new domestic banks and finance companies) or it has allowed financial interaction with certain sectors of economy and diversification of the portfolios held by financial institutions. However, there are different arguments about the failures of financial liberalisation. In what follows we discuss our analytical framework explaining imperfections in the financial markets that limits the positive outcomes of financial liberalisation.

1.2 Market Imperfections, Financing Choices and Investment:

Theoretical Considerations

Though financial liberalisation was introduced in 1970s in developing countries, the aspects of market imperfections in financial markets were somewhat ignored during that period. However, the failed liberalisation attempts in many developing countries forced the neo-liberal school to reconsider the question of financial liberalisation. As a result a new analytical framework including the problems of imperfect information and moral hazard that characterise lending activities in the financial markets came in to the discussion on financial liberalisation. The works mainly included that of Stiglitz and Weiss (1981), Diaz-Alejandro (1985), Cho (1986) and McKinnon (1981, 1991) etc. McKinnon (1981) in a significant departure from his original position on the issue suggests controls on interest rates, but only in cases of moral hazard.19 In short, the neo-liberal paradigm and the McKinnon-Shaw argument of financial liberalisation underwent a rethinking in recent years.20 The

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19 Ceilings on interest rates are justified when to prevent further interventions, the monetary authorities impose a lower and more secure interest rate than the banks are willing to charge. According to McKinnon, the authorities' failure to recognise the need to limit interest rates was partially responsible for the financial collapses in the Southern Cone of Latin America. The challenge is to set a rate of interest that solves the moral hazard problem incurring the inefficiencies.

20 The most basic tenet of economics is that market equilibrium entails supply equalling demand; that if demand should exceed supply, prices will rise, decreasing demand and/or increasing supply until demand and supply are equated at the new equilibrium price. So if prices do their job, rationing should not exist. However, credit rationing in fact exist. They seem to imply an excess demand for loanable funds (Stiglitz and Weiss 1981).
notion of financial liberalisation has also been under criticism from Neo-structuralist (Taylor 1983; Van Wijnbergen 1983; Buffie 1984; Lim 1987) as well as modern economists because it has implicit assumptions about perfect information and perfect markets. Neither of these prerequisites existed in developing countries at the time of liberalisation. Thus new literature on corporate finance looked at the neo-liberal approach and financial liberalisation on the basis of the cost disadvantages of external finance due to asymmetric information.

1.2.1 Asymmetric Information

The new Keynesian approach, which emerged during 1980s, gave a new environment to investment research by emphasizing the features of a decentralized market activity that prevents the system from reaching the efficient general equilibrium. During 1980s and 1990s, many studies linked the financial structure and investment behaviour based on the firmer theoretical background originated from the economics of information asymmetry and incentives. These fundamental market problems centered on asymmetric information between buyers and sellers in markets that prevents some of the efficient exchanges that would occur in equilibrium if all agents were fully informed. The assumption of the neo-liberal view that individuals and firms can costlessly write and enforce richly detailed financial contracts can be questioned since the completeness of financial contracts is not possible, if information or the ability to enforce contracts is severely limited (Gertler and Rose 1994: 20). Instead of complete contracts, individuals will write incomplete contracts, which will be revised and renegotiated as the future enfolds.

The information asymmetry and incomplete contracts will raise the monitoring costs of borrowing. Then for a firm, internal resources like profits and retained earnings and external resources through bank loans is no longer equivalent. Because, firms' managers have full information about the value of the firm's existing assets than any external agent, raising external funds is more difficult for the firm than utilising its retained earnings. Thus the firm substitutes the external finance

\[21\text{ In the literature of asymmetric information Akerlof (1970) is a seminal paper. But the views he expressed in his writings could not attain the desired importance in macro policy till the emergence of new Keynesian ideas.}\]
with internal resources since the latter is less costly (Myers and Majiiluf 1984). Thus the prevalence of market failures and information asymmetries has serious implications for financial markets since they distort the benefits of the financial liberalisation of the neo-liberal paradigm.

**Three Approaches of Information Asymmetry**

Three approaches can be identified under condition of information asymmetry, namely, moral hazard, adverse selection, and signalling (Macho-Stadler and Perez-Castrillo 1997). First approach in this direction is the signalling of debt. **Signalling** is a situation where a firm sends signals that could be observed by investor with a view to distinguish themselves as a set of firms of higher value. The crux of signalling effect is that the choice of capital structure signals to outside investors the information of insiders. As Ross (1977) puts it, managers (insiders) know the true distribution of firm returns, but investors do not. As a result, investors generally treat larger levels of leverage as a signal of higher quality. On the basis of the logic one may argue that debt and equity differ in an important way that is crucial for signalling insider information. This theory suggests that adding debt to the capital structure can be interpreted as a credible signal of high future cash flows and manager’s confidence about their own firm. Thus investors take large levels of debt as a signal of higher quality and that profitability and leverage are thus positively related. ²² Due to proprietary and since revealing information regarding their growth and investment opportunities is costly, firms resort to signaling to reduce information disadvantage of investors. Second is **moral hazard**, which is a situation, where the action of firms is unobservable or where the investors have no control over the action of agents. This implies that projects that are risky could be undertaken after investors have positively responded to the issues. So moral hazard is related to end use of funds. Thirdly, **adverse selection** situation prevails where firms have private information but they do not fully dispense it while entering in to contract (issuing equity). In order to avoid adverse selection problem, investors

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²² This holds true only if lower quality firms will not imitate higher quality firms by issuing more debt because they have higher bankruptcy costs at any level of debt.
would try to minimize information disadvantage by utilizing available information. Evaluation of value of firm is thus, very important while responding to equity issues. "Market imperfections" represent a general term for these problems.

When there is asymmetric information, there will be adverse effects even in the case of neoclassical optimizers. Activities such as credit rationing will disturb the balance between supply and demand for funds. Then the buyer's preference for funds may depend on their financial environment. Stiglitz and Weiss (1981) among others, pointed out that in credit markets, asymmetric information may lead to credit rationing. In a credit market the interest rate charged on the loan, is different from the expected return to lenders. Because, the expected returns to banks also depends on the repayment probability of borrowers. The interest rate affects this repayment probability of borrowers and, hence, the expected return to banks through adverse selection and moral hazard (adverse incentive). In the credit market adverse selection means, due to asymmetric information, lenders may select risky borrowers, the "lemons". Moral hazard refers to a situation where, after a loan is given, the borrower may take actions that reduce the probability of repayment.

There are two effects of an increase in interest rates on the expected return to the bank. First, there is a direct effect that as interest rates rise, the expected return to the bank increases, if other things remain the same. Second, there will be an adverse

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23 Another facet of criticism related to financial liberalisation is the volatile financial market in developing countries. Financial institutions and markets have become principal channels through which national sovereignty is being challenged. Corporate finance system have been vulnerable to speculative investments creating huge problems of non-performing loans and vanishing of listed companies from stock markets. Moreover, many developing countries are increasingly under surveillance of international financial institutions that is creating impediments to their national and societal development goals.

24 Credit rationing shows circumstances in which either among loan applicants who appear to be identical, some receive a loan and others do not, and the rejected applicants would not receive a loan even if they offered to pay a higher interest rate; or there are identifiable groups of individuals in the population who, with a given supply of credit, are unable to obtain loans at any interest rate, even though with a larger supply of credit, they would. Another form of rationing is that banks make the provision of credit in later periods contingent on performance in earlier period; banks may then refuse to lend even when these later period projects stochastically dominate earlier projects, which are financed.

25 "Lemons" problem arises from the fact that the buyer of a used good does not have the same information about the quality of the good as the seller does, so the buyer is willing to pay only an average price for it. The owners of the above average quality goods will then leave the market because the average price is too low for them. This leaves the market with a supply of only less than average quality goods, which are called "lemons". Moral hazard refers to a situation where, after a loan is given, the borrower may take actions that reduce the probability of repayment.
selection effect that if a lender raises interest rates, the pool of applicants increasingly contains high return, high-risk projects. This is because those borrowers who are willing to pay high interest rates usually have high return, high-risk projects, and borrowers with low return, low risk projects will drop out of the applicant pool because they may be unable and/or unwilling to pay high interest rates. This result in a pool, having only applicants with lower repayment probability and thus, the expected return to the bank declines as interest rate rise. Stiglitz and Weiss also show that increase in interest rates may adversely change the behaviour of borrowers. Increase in interest rates raises the relative attractiveness of riskier projects. Because increase in interest rates will lower the expected return to the borrower from lower-risk, lower-return projects by more than it lowers the expected return from higher-risk, higher return projects. Consequently, the expected returns to the bank get lowered. As a result banks have an incentive to ration credit instead of raising interest rates in response to excess demand for funds.\(^{26}\)

1.2.2 Asymmetric Information and Capital Structure

As far as the corporate sector is concerned, the theory of asymmetric information based their analysis on the assumption that investments are influenced by the availability of internal funds. This is because, changes in profit should convey some new information about the future profitability of a firm, and possibly increasing expected future output and boosting the optimal future path of capital stock. Internal funds could be less costly than external finance, if the market for borrowed funds is imperfect, perhaps because of differences in information about the riskiness of new investment. Thus the central and common theme is that, informational asymmetries may introduce inefficiencies in financial markets that make external funds more costly than internal funds, and hence may affect the firms' investment decisions.

\(^{26}\) Jaffee and Russell (1976) and Stiglitz and Weiss (1981) also showed that asymmetric information and uncertainty about borrower quality could bring credit rationing in the credit market, even in the presence of perfect credit markets.
Following Myers and Majluf (1984), it is well established that issuing equity is more expensive when there is asymmetric information between the firm insiders and outsiders. Therefore, a firm for which this information asymmetry is large should issue debt. Informational asymmetries lead to different perceptions of risk. If investors perceive the risk to be higher than managers then cost of external finance via debt is higher than that of internal finance via retained earnings. Information problem is an integral part of contracts, where information available to one party is not fully divulged to another party (Macho-Stadler and Perez-Castrillo 1997).\(^{27}\) In financial markets, information gap exists when the insiders of firms (managers) possess information about the future streams or investment opportunities of the firm but do not dispense it fully with the outsiders (investors). A firm can obtain benefits of asymmetric information by representing it as one of higher value. This has two outcomes: one is all issues would be subscribed to and the other is higher premium could be charged.

The problem of information asymmetry was thus used to develop theories of capital structure and investment\(^{28}\). There will be informational problems in the credit and equity market, if a firm cannot disperse its future streams or investment opportunities, to the providers of funds. If the capital market is perfect, a firm's financial structure is irrelevant to investment because external funds provide a perfect substitute for internal capital (Hubbard 1998). In other words, if the capital market is perfect, a firm's investment decisions are independent of its financial conditions.

However, in reality, contrary to the 'pecking order' theory\(^{29}\) of finance in industrialised countries, developing countries mainly depend on external sources of finance for investment, with a significant share generating both from equity and debt markets (Joseph, Nitsure and Sabnavis 1999). Because if they need external

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\(^{27}\) The parties are called agents and principal. Agents are engaged by principals. They act in the best interest of principal in order to maximize the wealth of the latter. In the corporate finance literature, these agents are management of firms and principals are the investors.

\(^{28}\) See for example, Jensen and Meckling (1976) and Leland and Pyle (1977). Another facet of criticism is related to financial liberalisation and globalisation of finance has been unexpected volatile financial markets in developing countries (Demirguc-Kunt and Detriache 1998). Corporate finance system have been vulnerable to speculative investments creating huge problems of non-performing loans and vanishing of listed companies from stock markets.

\(^{29}\) This theory says that firms prefer internal funds to external funds because external funds are more expensive due to asymmetric information. See for example Bernanke et al. (1996), Schiantarelli (1996), Agung (2000), Gelos and Werner (2002).
funds after exhausting internal funds, they will start with the least risky and cheapest security i.e., debt and equity is ultimately below as a last resort. Firms are in favour of debt over equity because debt has lower information cost than equity (Myers 1984; Myers and Majluf 1984). The issue of optimal capital structure and investment depends on the development of capital markets (equity and bond market) and banks (commercial and development). The financial system mobilizes savings and facilitates intermediation between savers and investors. This will result in investment in the economy. The information asymmetry is likely to affect both credit based financial system and securities market based financial system. In a credit market system, since banks have long-term association with firms, their cost may be less in obtaining information, monitoring and enforcing repayment. On the other hand, in security based financial system, the monitoring actions of public are costly, making the informational problems more acute. Thus, to improve, the allocation of resources, financial intermediaries are needed to reduce market imperfections. Because, in imperfect financial markets with asymmetric information, external funds are more expensive than internal funds and firms have to follow a hierarchy in which cheaper funds are preferable to more expensive ones and internal funds are the most preferable ones.

The hierarchy in sources due to cost differentials under imperfect markets is used to explain the investment behaviour. Perfect Competition Capital Markets acts like an umbrella over the whole theory of investment leading to the conclusion that since the market value of any firm is independent of its capital structure which implies that if equity is not sufficient to finance a firm, debt can be contracted without affecting the value of the project, that means it is irrelevant to investment because external funds provide a perfect substitute for internal capital. However, there are alternative views due to market imperfections in financial markets that consider internal and external finance as not perfect substitutes, thus investment may depend on financial factors.

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30 See Bethelemy and Varoudakis (1996), Singh and Hamid (1992), Singh (1995) etc.
31 Though the empirical tests of various models including the most widely accepted neo-classical flexible accelerator model have been successfully used, its application in the developing countries context is rather difficult due to the inherent assumptions of the model and the inadequacy or non-availability of data for certain variables (Sundararajan and Thakur 1980). As a result, investment research has moved in many directions in a process to identify the proper economic variables that might be expected to affect private investment. In recognition of the limitations to adopt the above theoretical models in their macro economic context, developing countries moved from traditional theories to focus on the role of economic policies, especially financial sector policies in determining investment.
such as the availability of internal finance, access to new debt or equity finance (external finance), or the functioning of particular credit markets leaving space for the pecking order (or financial hierarchy) theories to be developed.\textsuperscript{32}

It is recognised that the way the mainstream literature treats investment is not satisfactory since it leaves out factors that are identified as crucial for the explanation of investment behaviour of firms, and this is evident from recent and past empirical research in the field. For example, Fazzari et al. (1988) have empirically shown that while capital market informational problems arise at the level of the firm, financial constraints have a clear macroeconomic dimension because fluctuations in firms' cash flow and liquidity are correlated with movements of the aggregate economy over the business cycle, and that in general unlike the neoclassical investment theory, financial factors do affect investment decisions\textsuperscript{33}. In other words, financial structure of firms in terms of cash flow and debt affects investment when there exists a wedge between the costs of external and external finance in an imperfect financial market.\textsuperscript{34}

The theoretical review we have undertaken on market imperfections and information asymmetry raises an issue to be addressed in the context of Indian corporate financing. The most important question therefore is how do the expected benefits of the liberalisation and promotion of stock market and banking sector translate into better financing choices at firm level? What is the influence of exogenous financial sector development on financing choices (debt structure)? How does the financing pattern relate to investment of firms? These can be only solved

\textsuperscript{32} Internal finance is earnings that are retained within firms. External financing is either through issuing new stocks and bonds (equity), that is funds that are collected from other savers or funds that are borrowed from financial intermediaries or through bank loans (debt), that is banks make loans to firms without being subject to preliminary savings, thus in fact issue money.


\textsuperscript{34} Asymmetric Information and credit constraints are unobservable in nature. The theoretical and empirical literature in corporate finance used various segmenting variables (Group affiliation, size, export orientation) to identify unobservable financial constraints. Because, degree of information asymmetry depends on firm level characteristics (financial structure). Certain firms may be more sensitive to financial factors than others. In the present study also use some segmenting variables to test the presence of imperfect markets and credit constraints using firm level data.
through empirical investigation. Before going to the specific objectives of the study and methodology, we undertake a brief review of the empirical studies on financial liberalisation and corporate financing.

### 1.3 Review of Empirical Literature

During the last many years literature has shifted from macro economic perspective to micro aspects of finance, because of the availability of firm level data that takes in to account various measurement problems. In the present review we intend to concentrate on studies on capital structure that takes in to account the impact of financial liberalization on the financing choices of firms. We review the studies related to the financial sector liberalization and capital structure that forms the prime objective of our empirical analysis. Though literature recognizes differences in financial systems, only a limited number of studies have attempted to formally model the effect of financial market development on firm’s financing choices. The recent urge for financial liberalization in most developing countries has been spurred by the belief that the existing financial structure was not adequate to promote and assist growth in real economy (Schiantarelli et al. 1994). The empirical capital structure research results confirm liberalization theory. Many earlier studies like Mayer (1989, 1990) found that non-financial firms in developed countries use more internal finance and retentions are less important for firms in developing countries. This suggests liberalization effect on financial intermediation in developing countries is through banking channel. Demirguc-Kunt and Maksimovic (1995, 1996) compared financial intermediation effect with stock market development effect and found that stock market development does not lead to lesser leverage. They have used many measures of financial system development both activity and size indicators in the index form for every country. They argued that development of stock market leads to increase in their borrowings. Stock market development is not

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an obstacle on the way to obtaining debt; on the contrary, it promotes the increase of
debt in the capital structure of the firms. These conclusions again confirm the impact
of financial liberalization through banking channel.

In a study by Ramamurti and Vernon (1991) they showed that there are significant
variations in capital structures among emerging market economy firms. They
pointed out that equity financing seems to be high in Brazil and Malaysia, but low
in India and Pakistan. Samuel (1996a) suggests that these variations in debt-equity
mix depend on the macroeconomic environment as well as on controls and
interventions in domestic capital markets. He pointed out that there may be a pre­
disposition toward debt when interest rates are controlled and the real after-tax cost
of debt is negative in developing countries.

In a more recent empirical study Schmukler and Vesperoni (2001) found that
liberalization has uneven advantages for developing countries firms. This research
has focused on globalization of finance and firm level financing choices. They
concluded that financial liberalization leads to reduction in debt maturity and
increased use of foreign debt markets. It is often pointed out that countries with
better accounting and legal protection to shareholders and creditors have accessed
foreign equity and bond markets (Domowitz et al 2000). However, this study does
not provide direct statistical tests of the links between the nature and level of
financial intermediary and the firm’s financing decisions.

In recent times significant attention has been given to the different transmission
channels of monetary policy affecting the capital structure. There are different
classes of models in this regard. The first set of studies analyse the impact of
monetary innovations within an Auto Regression (VAR) framework (Bernanke and
Blinder 1992). These studies imply that banks actively reshuffle their asset portfolio
following a change in the monetary policy stance. Another school of models
analyses the response of corporate financial structure to changes in monetary
regimes. These studies empirically examine the existence of a loan supply (bank
lending) channel of monetary policy transmission for the US economy (for example,
Kashyap et al. 1993, 1996). Their findings suggest that tighter monetary policy tends to induce firms to rely more on financing through issuance of commercial paper and less on bank loans. The net effect of monetary policy in this study is an overall decline in loan supply. The issue of financial liberalization and capital structure relates to the second school of models. In a distinct study by Agarwal and Mohtadi (2002), the role of financial market development in the financing choice of firms in developing countries using a dynamic-panel approach for firm level data is undertaken. The study using measures like market capitalization ratio, turn over ratio, M3/GDP ratio etc are used. The results suggest that equity market development favours firms' equity financing over debt financing, while banking sector development favours debt financing, as one would expect.

In the context of India very few studies have considered the issue of firms' financing choices in the context of financial liberalization. A number of studies are related to the analytics of monetary policy (Rangarajan 1998a, 1998b; Reddy 2002), the financing pattern of corporate houses (Cobham and Subramanian 1998), the role of large shareholders in corporate governance (Sarkar and Sarkar 2000), and the different corporate governance pattern in public versus private banks (Jalan 2002). However, studies that specifically model the impact of financial liberalization on the financing choice of corporate sector are scarce. The studies in this direction are that of Prasad and Ghosh (2005), Shirai (2004) etc. Prasad and Ghosh (2005) analysed the monetary policy and corporate behaviour in India. They have examined the impact of monetary policy on corporate debt structure in India. The findings suggest that a contractionary monetary policy lowers overall debt including bank debt, although the lagged response is positive, and listed firms increase their short-term bank borrowings, after monetary tightening. A disaggregated analysis of responses of firms according to size and leverage largely validates these findings. The policy implication of this study is that the interest rate transmission channel has strengthened since 1998, and, second, corporates in India seem to exhibit relationship lending.36

36 Relationship lending means long term relationships whereby banks develop multiple lender-customer interactions over time and across products. Such relationships serve to maintain a supply of funds to constrained borrowers with few alternatives.
In another study for the Indian corporate sector, Rajakumar (2001) showed that conditions which obtained in capital market in terms of asymmetry between investors in equity and firms was favourable for firm to adopt equity financing to debt financing in early years after liberalisation. He pointed out that it is not the relative cost which induced more of equity financing but was the result of information asymmetry as seen through moral hazard, adverse selection and signalling. Though the study does not capture a measure of financial liberalisation it tends to conclude that imperfect markets are still a problem in corporate financing of India.

In Shirai (2004) an attempt is made to analyse the impact of financial and capital market reforms on corporate finance in India. The study found that while some high-quality firms (large firms) have substituted bond finance for bank loans, this has not occurred to any significant degree for many other types of firms (for example, old and export oriented firms). The study concluded that banks remain major financiers for both high and low quality firms. The study concluded by arguing that India should build an infrastructure that will foster sound capital markets and strengthen bank’s incentives for better risk management. One may criticize this study on the ground of absence of a measure for liberalization. Instead, the strategy adopted by Shirai is to divide the sample firms in to two periods (1993-98 and 1998-2003) to see changes after liberalization.

From the review of literature on the impact of financial liberalisation on financing choices, it is important to reiterate that empirical models capturing an explicit measure of financial liberalization has not been employed in India, especially in the context of firm level financing patterns. Though financial liberalisation is still on the way the theoretical arguments asymmetric information and the resultant imperfections makes it pertinent to analyse the impact of financial liberalisation on financing choice and investment of firms. Such a study, it seems to be relevant and pertinent to draw some conclusions on the ongoing financial liberalisation process. Since the existing studies are not addressing empirically the underlying mechanism in an isolated fashion, the impact of financial liberalisation on the financing choice of firms and its impact on investment remains an issue that needs further research.
The firm level data base employed in the study for the post-liberalisation period we hope will provide more incisive evidence on financing pattern of firms and the implications of this on investment. To specify, the present study empirically examines the impact of financial liberalisation on financing choices of forms (choice between debt and equity) and its implications for investment in the Indian private corporate manufacturing sector. One may argue that a firm’s financing policy is not only influenced by trade off between the tax advantage of debt financing, investment opportunities, profitability etc (Mauer and Triantis 1994) but also by exogenous financial sector development due to liberalisation. The exogenous financial liberalisation represents continuous events of deregulation in financial market activities. The experiment of financial liberalisation provides an opportunity to study capital structure as a function of firm level characteristics and financial liberalisation measures. An essential step in understanding corporate finance in India is to examine how the changes in capital structure has been influenced by financial liberalisation policies and what are the implication of these changes for corporate investment.

1.4 Objectives of the Study

The specific objectives of the study are the following:

1. To provide a broad overview of financial reforms and its implications for corporate financing patterns and investment.

2. To analyse the changes in the financing patterns of Indian private corporate sector with reference to financial liberalisation.

3. To assess the impact of financial liberalisation on capital structure of firms in the private corporate manufacturing sector.

4. To empirically analyse the relationship between financing patterns and investment of firms in the private corporate manufacturing sector.
1.5 Methodology and Data Sources

To study the above stated objectives, we make use of both aggregate time series data and firm level information. We have used a financial liberalisation index (FLIN) constructed using principal component analysis (PCA) method. To analyse the impact of financial liberalisation on financing patterns and investment decisions, we use firm level panel data. We have analysed the determinants of debt structure by applying fixed effects model to panel data. For analysing the impact of financing patterns on investment we estimated an augmented investment model using Generalised method moments (GMM) estimator using Dynamic Panel Data method. The details of each of this methodology are given in the respective chapters.

Regarding database of the study, we are providing only a very brief description here. The Study makes use of firm level panel data obtained from (Centre for Monitoring Indian Economy’s (CMIE) electronic database PROWESS. We have used a panel of 2269 firms with 19852 observations for the period 1993/94 to 2003/04. Another important data set includes National Accounts Statistics (NAS) for time series data on investment statistics. For analysing the financing pattern of firms we had used data from various sources like Industrial Development Bank of India (IDBI), Hand Book of Statistics on Indian Economy published by RBI, and CMIE reports. For constructing financial liberalisation index we have used the data provided by RBI Annual Reports on changes in Policies in a chronological order.

1.6 Organisation of the Study

The study is organised in to five chapters including this introductory chapter. Chapter 2 is titled financial liberalisation and corporate financing patterns. This chapter is divided in to three main sections. Section I discusses the outcomes of financial liberalisation policies and its implications for corporate investment. In section II we analyses financing pattern of the corporate sector at the aggregate level
both in the pre and post liberalisation periods. Section III provides details of sample data used for the study. An analysis of financing pattern of these sample manufacturing firms and its variation across different size groups is also undertaken in this section.

Chapter 3 empirically analyses the determinants of capital structure in the context of financial liberalisation. In this chapter, section 3.1 gives the theory. In section 3.2, we explain the empirical model and variables used in the estimation. A detailed description of the methodology of construction of financial liberalisation index (FLIN) used in the study is also given in this section. Section 3.3 discusses the issues in estimation and results. Section 3.4 concludes the chapter.

Chapter 4 analyses the relationship between financing patterns and investment of firms. The chapter is divided into five sections. Section 4.1 analyses the investment behaviour of the manufacturing sector both aggregate manufacturing sector and at the firm level. The theory is given in section 4.2. In section 4.3 we have undertaken a review of empirical literature on determinants of investment. Section 4.4 describes the empirical model, data and variables used for the estimation. In section 4.5, issues in estimation and results are discussed. A conclusion is given in section 4.6.

The concluding chapter 5 provides summary, conclusions and policy implications of the study. It also highlights some of the important issues that need further research.