# CHAPTER-1

# METHODOLOGY AND PLAN OF STUDY

## 1.1 INTRODUCTION AND BACKGROUND

The Indian Economy has accomplished almost four decades of planning and this has been a period in which the economy has achieved varying degrees of success and failure and this has also been an era of experiment which has taught some hard lessons to the policy makers. It is no denying the fact that in the course of the last four decades there has been a constant need to arrange and rearrange priorities between developement objectives to adjust to circumstances as they evolved, some of these circumstances reflected policy failure while others were a reflection of Micro-economic inefficiences and structural imbalances prevailing in the economy. The issue is whether the Indian Economy has shown the much needed resilience in combating both the Exogeneous and Endogenous Economic crises as they evolved; Whether the Micro-Economic performance has been sustained to the extent it was desired in view of constantly changing economic environment and also changing priorities between development objectives.

This experience of almost four decades has compelled policy makers to re-evaluate and to give a fresh consideration to ideologies, approaches and methods of organising production, consumption and exchange in the Indian economy. All these efforts of policy makers have resulted into the process of economic liberalization. The Indian economy has been experiencing the winds of liberalization. Since the early eighties the measures to this effect have been implementd in the areas of trade, taxation and industrial policies. However, it should be noted that these delibrate conscious attempts are more specifically aimed at augmenting the long-term real growth of the economy through improving the resource allocation, strengthening resource mobilization and eliminating structural imbalances in the Indian Economy.

Recently there has been resurgence of interest, inspired in large part by the works of Mckinnon and Shaw[1,2] in the role of money and finance as a means of accelerating economic growth of the developing countries.

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[1] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.
[2] Shaw E.S. (1973) : Financial Deepening in Economic Development, Oxford University Press, New York.

In fact, Money and Finance as instruments of financial development are crucial to the process of economic growth.

The contemporary Macro theory has taken a peculiar stand on the role of the institution of money and the financial system in the economic processes of a market economy. Though it has paid a great deal of attention to the functioning of the money and the financial market and also its implications to the short-run stabilization policies, it had divorced the problems of the economic growth and development from the analysis of the problems of the monetary and financial development of a society. This is probably why the growth models are cast in physical terms and the growth path is shown to be neutral to the changes in the monetary and financial structure.

Attempts are recently being made to generalize the theory of economic growth and development and overcome the drawback. Tobin and other economists have tried to accommodate real money balances in the neo-classical and Keynesian growth models. Gurley and Shaw and others have emphasized the importance of financial intermediaries in the saving-investment process.

During the 1960s, the question of how the domestic financial structure (consisting of the whole range of existing financial institutions, financial markets and financial instruments) could contribute to economic growth started to receive some attention. The extent to which financial development-defined as the growth of domestic financial institutions, markets and instruments could improve the process of financial intermediation-became important for raising domestic savings and improving the quantity and quality of investment. Improving financial intermediation was of crucial importance, according to these early contributions, since high savings and more efficient investment would increase the overall growth performance of a country.

There are some important ways, though limited by which society can mobilize its savings to accelerate economic growth;

1). Central planning in which a part or whole economy surplus of individual spending units as pre-empted and distributed by the state on pre-determined criteria among those spending units which need investible resources.

2). The second method is implementing the fiscal policy in which the state appropriates part of the economic surplus of society and invests in state-susponsered enterprises or private- enterprises.

3). Inflation, essentially is a fiscal device since it is a uniform tax-subsidy system.

4). Elaborate financial system, a debt-asset system, which brings about specialization of the functions of savings and investments.

This last method for mobilizing savings viz. an elaborate financial system, is the major theme of this purposed research. It is contended that apart from being an economically efficient system of mobilizing savings to promote efficient capital accumulation, an elaborate financial system enjoys huge external economies in a decentralised economic system.

The external economies of the system of finance are mainly of two types. The evolution of a rudimentary financial system is marked by a financial claim, money which by being universally acceptable at a fixed nominal exchange rate for real goods reduces considerably the real costs of conducting exchange and promotes the development of organised commodity markets. It also reduces the risks of economic transactions and makes the cost of information about exchange possibilities cheap. The emergence of money brings huge windfalls of efficiency and welfare in a barter economy and subsequent increases in the supply of these instruments keep adding to the overall economic efficiency of society, though at a slower rate, either by monetization of the hither to non-monetized regions or greater accumulation and use of money instruments by the public. This form of external economy of finance is the subject matter of our first hypothesis.

Second, in a decentralized world without finance, absence of proper conduits to hold savings is a constraint on the intertemporal utility functions of the individuals. The desired time pattern of consumption of the society will probably be skewed for present consumption and against future consumption. The well developed financial system offers the savers a wide array of financial assets which are superior to the physical assets as conducts of saving in terms of risk-return-liquidity characteristics and which can remove the institutional constraints on the intertemporal utility functions and result in a higher proportion of income saved.

The neo-liberal view appeared in the early 1970s mainly with the work of Ronald McKinnon. It places the financial constraint discussed by the structuralists at the centre of the analysis. 'Financial Repression', caused by monetary mismanagement in the form of excessive

growth of the money supply and erroneous selective credit policies, is the major factor contributing to the structural problems, lack of investment, and inflation in TWCs. The main indicator of financial repression is the prevalence of negative real interest rates (Galbis, p33).[3]

The neo-liberal model is essentially an incomplete neo-classical model in disequilibrium. The assumptions are key : The first is that the economy is fragmented, so agents are faced with different prices for factors of production, some factors are at times immobile, and agents have differential access to technology, misallocation of resources is the result, and this misallocation represses accumulation. Market imperfections mean that factors cannot be treated symmetrically as in orthodox analysis. Instead, the capital market and its special problems is emphasized. the capital market must be improved before other liberalizing policies can be carried out. The second assumption is that money and real assets are not substitutes but complements in the money demand function (McKinnon, p5).[4]

Money is an important difference between the neo-liberal and neo-classical models. What is similar in the two is that the price level is determined by the demand for and the supply of nominal money, individuals' expectations about future price movements are influential in determining real cash balances held, and the monetary authorities determine the real return on holding money by controlling the nominal money supply. M, and the nominal rate of return to holders of money. But, the fragmented economy changes the demand for money function.

McKinnon's money demand function is based on two assumptions about conditions in TWCs. Due to the lack of organized finance, all economic units are assumed to be confined to self-finance, so that saver's are equivalent to investors and there is no private sector borrowing. The second assumption is that the small size of firm/households makes indivisibilities in investment important. These assumptions mean that cash balances are the only financial instrument available that can be accumulated. Also, the restraint on external borrowing means that individuals cannot make the 'best' investments embodying the 'best' technology. Rates of return on physical capital are thus dispersed. It is the imperfection of capital markets which causes the misallocation of resources, the use of inappropriate technology, and consequently unemployment. Government fiscal policy is assumed not to

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[3] Galbis B. (1982) : 'Analytical Aspects of Interest Rate Policies in Less-Developod Countries', Savings and Development.

[4] McKinnon R.I.(1976) : Money and Finance in Economic Growth and Development, Marcel Dekker Inc. New York.

affect aggregate capital accumulation directly, so the only way public policy can affect accumulation is through the real return on holding money d-p. (McKinnon, pp56-57).[5]

Important to MacKinnon's model is the complementarity theorem. The money demand funtion (which is really the demand for money held in savings accounts since in an inflationary economy the opportunity cost of holding cash would keep it at a minimum) is (M/P)d=f(Y,I/Y,d-p). Real money demand is a function of income, The ratio of investment to income (investment demand), and the real return on holding money. All partial derivatives are positive. I/Y does not enter the neo-classical money demand function, and it reflects McKinnon's idea of complementarity, Because investors must save to invest, the demand for real money balances is strongly affected by the propensity to save (invest). If the desired rate of capital accumulation increases, the average ratio of real balances to income will also increase. Therefore money demand is positively related to investment. The more discrete invetments are, the more money has to be held. As the average rate of return on capital is increased, and desired investment increases, so does the demand for money. This is the complementarity relationship between money and physical capital. Money and physical capital are not competing assets; money is a conduit through which accumulation takes place (McKinnon, pp-59-60).[6]

The policy implications are clear. Interest rates should be responsive to the market rather than fixed by the authorities. Negative real interest rates, caused by fixing the interst rate at a low level to encourage investment in an inflationary economy, actually discourage investment by discouraging the saving that necessarily precedes it. High, or at least positive interest rates, are necessary because they will increase the return on holding money, increasing saving. McKinnon realizes that at very high real interest rates, investment would then be discouraged as in the usual model because after interest rates were set free, borrowing to finance investment would take place; this is the point of freeing interest rate. Higher real interest rates ensure Investment is allocated to areas of high return, so efficiency and productivity will increase. Borrowing will allow 'best' investments to take place so that indivisibilities will be less significant and technology will become more appropriate. Overall, the greater degree of financialization will encourage more investment and improve resources allocation, thereby increasing growth rates.

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[5] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.

[6] McKinnon, R.I. (1973) : Op. cit.,

A rise in real interst rates should come from two sources : A non-inflationary monetary policy, and the gradual liberalization of financial markets. Removing interest rate ceilings must be gradual to prevent short-run problems of bankruptcy of financial institutions as they pay higher interest rates to depositors while stuck in long term low interest lending arrangements. (A problem pointed out by Mathieson, pp 359-60).[7] As loan portfolio of financial firms change, both real lending and deposit rates can rise.

A survey of the theoretical literature is needed to find plausible hypotheses to explain the ralation between financial development and economic growth. Although others have surveyed this literature recently (see, among others, Fry, 1988;[8] Gertler, 1988;[9] and Pagano, 1992[10]), this chapter reviews the most important contributions to the topic, in a chronological context, explicity contrasting the ideas of different economic schools and their relevance for developing countries. It reviews the empirical evidence supporting these ideas and includes a discussion on the recent attempts to incorporate financial development aspects in endogenous growth models.

The literature on issues of development economics expanded rapidly after World War II. One inmportant issue was the problem of financing economic development (Prebisch, 1950;[11] Nurkse, 1953;[12] and Lewis, 1954[13]). Initially, much attention was paid to the issue on how the accumulated financial resources could be used most efficiently to stimulate economic growth. Less thought was given to how national savings could be mobilized and how thase savings could be transmitted into efficient investment.

During the 1960s, the question of how the domestic financial structure (consisting of the whole range of existing financial institutions, financial markets and fianancial instruments) could contribute to economic growth started to receive some attention. The extent to which

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[7] Mathieson, Donald J.(1980) : "Financial Reform and Stabilization Policy in a Developing Economy", *Journal of Development Economics*, Vol. 7, No.3.

[8] Fry M.J.(1988) : Money, Interest amd Banking in Economic Development, Johns Hopkins University Press, Baltimore, 1988.

[9] Gertler, M.(1988) : "Financial Structure and Aggregate Economic Activity : An Overview", *Journal of Money, Credit and Banking*, Vol. 20, No. 3, pp. 559-588.

[10] Pagano, M.(1992) : Financial Markets and Growth : An Overview, Paper Presented at the Seventh EEA Conference, Dublin.

[11] Prebisch, R.(1950) : The Economic Development of Latin America and its Principal Problems, UND, New York.

[12] Nurkse, R.(1953) : Problems of Capital Formation in Underdeveloped Countries, Basil Blackwell, Oxford.

[13] Lewis, W.A. : "Economic Development with Unlimited Supplies of Labour", *The Manchester School*, Vol. 22, 1954, pp. 139-191.

financial development could improve the process of financial intermediation, became important for raising domestic savings and improving the quantity and quality of investment.

Basically, the early contributions to the analysis of the role of financial development in the process of economic growth centred around the following three major themes:

1) Analysing the process of financial intermediation and stressing its importance for economic growth performance.

2) Analysing the nature of the causal ralation between financial development and economic growth.

3) Finding empirical evidence for the relation between financial developement and economic growth.

Gurley and Shaw (1955[14], 1960[15] and 1967[16]) explicitly stressed the importance of financial intermediation in the process of economic development. They argued that financial intermediation increases the amount of funds available for investment by providing credit through financial institutions. The more efficiently these institutions execute their credit-supply function to finance investment, the higher the economic growth performance of a country.

Other authors have expanded on the ideas of Gurley and Shaw, in showing that a more efficient system of financial intermediation contributes to higher mobilization of domestic savings and to a more efficient allocation of financial resources into investment projects (Patrick, 1966;[17] Proter, 1966[18]). These aspects were central in later discussions of the importance of financial development in economic growth, led by McKinnon (1973)[19] and Shaw (1973).[20]

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[14] Gurley, J.G. and E.S. Shaw(1955) : "Finanical Aspects of Economic Development", *American Economic Review,* Vol. 45, No.4, pp. 515-538.

[15] Gurley, J.G. and E.S. Shaw(1960) : Money in a Theory of Finance, The Brookings Institution, Washington D.C.

[16] Gurley, J.G. and E.S. Shaw(1967) : "Financial Structure and Economic Development", *Economic Development and Cultural change,* Vol. 15, No. 3, pp. 257-268.

[17] Patrick, H.T.(1966) : "Financial Development and Economic Growth in Underdeveloped Countries", *Economic Development and Cultural Change,* Vol. 14, No. 2, pp. 174-189.

[18] Porter, R.C.(1966) : "The Promotion of the Banking Habit and Economic Development", *Journal of Development Studies,* Vol. 2, No.4, pp. 346-386.

[19] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.

[20] Shaw E.S. (1973) : Financial Deepening in Economic Development, Oxford University Press, New York.

Patrick (1966)[21] introduced the concepts of demand-following and supply-leading, to describe the nature of the causal relation between financial development and economic growth. He described demand-following as the situation where financial development is a result of developments in the real sector; the demand for financial services from this sector automatically creates financial institutions and instruments. In the case of supply-leading, financial development precedes and stimulates the process of economic growth; the supply of financial services and instruments creates the demand for them.

Several authors have tried to find evidence for the direction of causation between financial development and economic growth. Patrick (1966, pp. 176-177)[22] suggested that in the early stages of economic development, a supply-leading relation is more likely since a direct stimulus is needed to collect savings to finance investment for growth while, at a later stage, when the financial sector is more developed, the demand-following relation will be more prevalent. He illustrated this point by describing the economic development process and experiences of Japan during the period between 1868 and 1914 and stated that: "The modern financial system was not only created in advance of Japan's modern industrialization, but... contributed significantly to the initial spurt" (Patrick, 1966[23], p. 177; and Patrick, 1967)[24].

A more advanced econometric approach was taken by, among others, Gupta (1984)[25], Jung (1986)[26] and St. Hill (1992)[27] who tried to find empirical evidence for the direction of the causal relation by using the Granger causality test. Gupta found support for the supply-leading hypothesis in a study of 14 developing countries. Both Jung and St. Hill, using data on 56 countries, of which 37 were LDCs, found a moderate support for this hypothesis in LDCs, while the demand-following hypothesis appeared to fit more closely the situation in developed nations.

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[21] Patrick, H.T.(1966) : "Financial Development and Economic Growth in Underdeveloped Countries", *Economic Development and Cultural Change,* Vol. 14, No. 2, pp. 174-189.

[22] Patrick, H.T.(1966) : Op. cit., pp. 176-177.

[23] Patrick, H.T.(1966) : Op. cit., pp. 177.

[24] Patrick, H.T.(1967) : "Japan, 1860-1914", in Banking in the Early Stages of Industrialization : A Study in Comparative Economic History, by Cameron, R., O. Crisp, H.T. Patrick and R. Tilly, Oxford University Press, New York, pp. 239-289.

[25] Gupta, K.L.(1984) : Finance and Economic Growth in Developing Countries, Croom Helm, London.

[26] Jung, W.S.(1986) : "Financial Development and Economic Growth : International Evidence", Economic Development and Culture change, Vol. 34, No.2, pp. 333-346.

[27] St. Hill R.L.(1992) : "Stages of Banking and Economic Development", *Savings and Development,* Vol. 16, No. 1, pp. 5-21.

Although the question of causality remains unresolved until now, the answer to this question has far-reaching policy implications and has, therefore, been a recurring subject in the literature on financial markets and economic development. One could argue that only in the case of supply-leading, is there a need to direct attention to developments in the financial sector leading to adoption of active financial policy to stimulate financial development as part of a development strategy. In the case of financial development arising spontaneously as the economy grows, these developments are less important, thus, the concentration is more on developments in the real economy.

To circumvent the problem of establishing the direction of causation between financial development and economic growth, many authors have simply assumed that financial development leads to economic growth. However, the demand-following hypothesis cannot be rejected, at least not on theoretical grounds.

In reality, the financial and the real sector will interact during all the stages of development. In other words, there is, at no stage, only a one-way relation between the financial structure of a country and its economic performance. This observation recognizes that analysis of developments in the financial sector is still relevant and that financial sector policy can be an important and valuable element of any development strategy. Some authors, among them Gurley and Shaw (1967)[28], seem to prefer this approach, describing the relation between both financial development and economic growth as two-way causation.

Goldsmith (1969)[29] was one of the first to study financial development, using time-series analysis. He studied financial structures in 35 (developed and developing) countries over the 1860-1960 period. His study is especially relevant, since he constructed useful measures of Financial Interrelations Ratio(FIR), measuring the ratio of total financial assets to total real assets of an economy, as a proxy for size of the financial sector.

Accordingly, the development process is characterized as follows. First, the FIR rises as the real economy grows, indicating growing size of the financial sector. Second, the ratio of financial assets owned by financial institutions to total financial assets increases, reflecting the growing institutionalization of savings and investment. Third, during the early stages of development, banks are of major importance in the financial structure of a country while, at

[28] Gurley, J.G. and E.S. Shaw(1967) : "Financial Structure and Economic Development", *Economic Development and Cultural change,* Vol. 15, No. 3, pp. 257-268.

[29] Goldsmith, R.W.(1969) : *Financial Structure and Economic Development,* Yale University Press, New Haven.

later stages, their importance decreases as more specialized institutions develop. On the basis of his analysis, Goldsmith concluded that financial development and economic growth were somehow interrelated. However, he could not establish the causal direction between the two (Goldsmith, 1969)[30]. Nevertheless, Goldsmith's work provided useful insights on the development of size and structure of the financial sector in developed as well as developing countries.

Several authors have elaborated on the analysis of Goldsmith. Basch and Kybal (1970)[31] and Rietti (1979)[32] used similar methods to study the financial sector of Latin American countries. Gupta (1984)[33] and Cole and Park (1983)[34] analysed financial sector developments in Asian countries, while Kwarteng (1984)[35], Abebe (1990)[36] and Ikhide (1992)[37] did the same for African countries.

Neal (1990)[38] used a cross-section analysis of financial sector indicators for 117 developed and developing countries. In some of these studies, new measures of financial development were suggested to analyse aspects other than the size and structure of the financial sector. These measures described the distribution of credit through the financial sector, its effectiveness in attracting savings and financial sector distortions.

Recently, some studies have appeared, using the above-mentioned measures to econometrically establish the relation between financial development and economic growth (King and Lewine, 1992[39]; and Roubini and Sala-i-Martin, 1992)[40]. These studies confirm earlier work which established a close relationship between the two. A major problem in

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[30] Goldsmith, R.W.(1969) : Financial Structure and Economic Development, Yale University Press, New Haven, pp. 48.

[31] Basch, A. and M. Kybal, (1970) : Capital Markets in Latin America : A General Survey and Six Country Studies, Praeger Publishers, New York.

[32] Rietti, M.(1979) : Money and Banking in Latin America, Praeger Publishers, New York.

[33] Gupta, K.L.(1984) : Finance and Economic Growth in Developing Countries, Croom Helm, London.

[34] Cole, D.C. and Y.C. Park,(1983) : Financial Development in Korea 1945-1978, Harvard University Press, Cambridge, Massachusetts.

[35] Kwarteng, K.(1984) : "Banking and Finance in Africa : A Review Article", Saving and Development, Vol. 6, No. 3, pp. 247-263.

[36] Abebe, A.(1990) : "Financial Repression and Its Impact on Financial Development and Economic Growth in the African Least Developed Countries", Savings and Development, Vol. 14, No. 1, pp. 55-85.

[37] Ikhide, S.I.(1992) : "Making a Leading Sector of the Banking System : The Nigerian Example", Internationanl Journal of Development Banking, Vol. 10, No. 1, pp. 75-84.

[38] Neal, C.R.(1990) : Macrofinancial Indicators for 11 Developing and Industrial Countries, (Policy Research and External Affairs Working Papers No. 58), The World Bank, Washington D.C.

[39] King, R.G. & R. Levine,(1992) : Finanacial Indicators and Growth in a Cross Section of Countries, (Policy Research and External Affairs Working Papers No. 819), The World Bank, Washington D.C.

[40] Roubini, N. & Sala-i-Martin,(1992) : "Financial Repression And Economic Growth", Journal of Development Economics, Vol. 39, No 1. pp. 5-30.

interpreting their results, however, is that these studies analysed data for over 100 developed and developing countries, making conclusions about *specific* developing countries difficult. Therefore, more country-specific analysis, using Goldsmith's approach, might be useful.

Financial repression policies were strongly criticized during the 1970s by several authors of the so-called 'financial liberalization school' (McKinnon and Shaw, 1973)[41,42]. These authors, using the theoretical framework of Gurley and Shaw and strongly favouring the Neo-classical proposition of price-clearing markets as the best mechanism of resource allocation in the economy, argued that financial repression discouraged the development of a domestic financial sector and was detrimental to economic growth.

McKinnon (1973)[43] stressed the need for financial liberalization in LDCs in the context of a model which incorporates specific elements of the finacial sector of those countries. According to him, production units in less-developed economies are, to a large extent, confined to self-finance for investment since finacial markets are almost non-existent or are highly fragmented and, therefore, unable to intermediate efficiently between savers and investors. The underdeveloped state of financial markets also means that cash balances are the only financial asset available to wealth holders. McKinnon also assumes that investment is characterized by indivisibilities. Production units, thus, have to accumulate a considerable amount of cash balances to be able to self-finance these investments.

In McKinnon's model, the demamd for cash balances from individuals is positively related to income, real interest rates and average rate of return on capital. If average rate of return increases, the demamd for capital increases resulting in a higher demand for cash balances to finance the enlarged capital stock8. Similarly, if real interst rates increase, individuals are encouraged to hold cash balances, rising the possibilities for self-financing investment projects. The increased holdings of cash balances may lead to higher savings with banks since cash balances have to be accumulated to the point where they are large enough to finance investment and the opportunity costs of savings declines with rise in real interest rates,

[41] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.
[42] Shaw E.S. (1973) : Financial Deepening in Economic Development, Oxford University Press, New York.
[43] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.

(Simmons, 1992[44], p.32). Thus, rising interest rates, the outcome of financial liberalization, contributes to higher savings with banks, higher investment and stronger growth performance even in countries with highly underdeveloped financial markets.

If, according to McKinnon, individuals can be stimulated to hold more of their cash balances with commercial banks by liberalizing financial markets, the reliance on self-finance will gradually decrease, the financial sector will grow, both quantitatively and qualitatively, stimulating domestic savings, investment and growth.

Both McKinnon and Shaw believed that an increase in the amount and efficiency of investment would follow from financial liberalization. They explicitly point out that financial repression not only means lower investment, but also that investment is far less productive. With underdeveloped markets, financing unproductive investment, such as inventories or excess capacity in plant and equipment, occurs frequently (Show 1973[45], pp. 71-72; McKinnon, 1973[46], pp. 31-32). In repressed markets, non-rational criteria for credit rationing are at work to distribute resources for investment resulting in financing of less efficient investment projects (Shaw[47], p. 86). The non-existence of well-functioning financial markets results in resorting to informal markets which are far less efficient. Informal markets are, in most cases, small and scattered and they, therefore, lack the information and resources to be efficient in intermediating savings into investment.

Various attempts have been made to test the hypotheses of the financial liberalization school. The central hypothesis of this school, i.e., savings and real interest rates are related positively, has been tested frequently. Empirical studies of this hypothesis show mixed results (Table-1). Although several studies come up with positive signs for the coefficient of the real interest rates, it appears to be statistically insignificant.

Several factors may explain this result. First, data on savings of developing countries are inaccurate. Second, in many developing countries, the regime of financial repression may have limited the positive effects of real interest rate changes on savings. Third, the influence of foreign interest rates on domestic savings behaviour has not been accounted for in the studies reviewed here. Finally, these studies do not take into account the time lag between

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[44] Simmons, R.(1992) : "The Mobilization of Domestic Resources for Development : Some Current Theoretical Issues", in *Savings for Economic Recovery in Africa,* edited by Frimpong-Ansah, J.H. and B. Ingham, African Centre for Economic Policy Research, Curry-Heinemann, London, pp. 29-59.

[45] Shaw E.S. (1973) : Financial Deepening in Economic Development, Oxford University Press, New York.

[46] McKinnon, R.I. (1973) : Money and Capital in Economic Development, Brookings Institution, Washington, D.C.

[47] Shaw E.S. (1973) : Financial Deepening in Economic Development, Oxford University Press, New York.

interest rate changes and adjustments of savings decisions. Whatever the exact reason, it may be concuded from Table - 1 that empirical evidence on the hypothesis of a positive relation between savings and the real interest rates does not appear to be very strong.

Other studies tried to test the hypothesis of a positive relation between real interest rates and the quality as well as quantity of investment (Table-2). The relation between real interest rates and the quantity of investment was examined by relating the availability of domestic credit to increases in total investment. Other studies investigated this relation by testing McKinnon's Complementarity hypothesis. While the first interpretation of the hypothesis was generally confirmed by empirical investigation, tests of the complementarity hypothesis gave mixed results. Studies investigating the relation between higher real interest rates and increased efficiency of investment, by regressing real interest rates, on the incremental capital output ratio, found a positive and significant relation between the two.

**Table 1**

**Empirical Testing of the Hypotheses of the Financial Liberalization School :**
**Positive Effect from Higher (Positive) Real Interest Rates on Domestic Savings**

| Study (year) | Sample | Result |
|---|---|---|
| Williamson (1968) | 6 Asian countries | 0 |
| Gupta (1970) | India | + |
| Abe et al., (1977) | 6 Asian countries | + |
| Fry (1977) | Portugal | + |
| Fry (1978) | 7 Asian countries | + |
| Fry (1979) | Turkey | + |
| Fry (1980) | 61 developing countries | + |
| Fry & Mason (1982) | 7 Asian countries | + |
| Giovanninai (1983) | 7 Asian countries | 0 |
| Gupta (1984) | 12 Asian countries | 0/+ |
| Yusuf & Peters (1984) | Korea | + |
| Giovannini (1985) | 7 Asian countries | 0 |
| de Melo & Tybout (1986) | Uruguay | 0 |
| Leite & Makonnen (1986) | 6 African countries | 0/+ |
| Gupta (1987) | 10 Asian countries | + |
| Gupta (1987) | 13 Latin American countries | 0 |
| Fry (1988) | 14 Asian countries | + |
| Khatkhate (1988) | 64 developing countries | 0 |
| Rossi (1988) | 49 developing countries | + |

Notes : "+" indicates that the hypothesis was confirmed and that the coefficients found were statistically significant by usual standards.

"0" indicates that the hypothesis could not be supported since the coefficients were not statistically significant by usual standards.

**Source** : Niels Hermes (1994), "Financial Development and Economic Growth ; A survey of literature", International Journal of Development Banking, Vol. 12 No.1, January.

## Table - 2

**Empirical Testing of the Hypotheses of the Financial Liberalization School :**

**Positive Effect form Higher (Positive) Real Interest Rates on Investment**

| Study (year) | Sample | Result |
|---|---|---|
| Hypothesis 1 : Higher real interist rates increase credit availability and, thus, stimulate higher investment | | |
| Fry (1980) | 61 developing countries | + |
| Fry (1981a) | 12 Asian countried | + |
| Fry (1981b) | 7 Pacific Basin countries | + |
| Fry (1986) | 14 Asian countries | + |
| Hypothesis 2 : Complementarity Hypothesis of McKinnon (1973) | | |
| Akhta(1974) | Pakistan | - |
| Abe et al., (1975) | 6 Asian countries | + |
| Fry (1978) | 10 Asian countries | - |
| Harris (1979) | 5 Asian countries | 0/+ |
| Fischer (1981) | 40 developing countried | + |
| Thornton (1990) | India | + |
| Hypothesis 3 : Higher real interest rates increase efficiency of investment | | |
| Fry (1979) | Turkey | + |
| Asian Development Bank (1985) | 11 Asian countries | + |

**Notes** : "+" indicates that the hypothesis was confirmed and that the coefficients found were statistically significant by usual standards.

"0" indicates that the hypothesis could not be supported since the coefficients were not statistically significant by usual standards.

"-" indicates that the hypothesis was not confirmed and that the coeffiecients were statistically significant by usual standards.

**Source :** The same as Table-1

Some studies explicitly tested the hypothesis of a positive relation between real interest rates and financial intermediation (Table 3). All these studies used the level or the growth of the ratio of money stock of money supply to GNP (or GDP) through time as an indicator for

the development of financial intermediation. The outcomes, generally, confirm this hypothesis.

Finally, tests have been applied to find empirical evidence for hypothesis of a positive relation between real interest rates and economic growth, via increased savings and investment (Table-4). The results of these studies show, with only two exceptions, (e.g., Gupta, 1984[48]; and Khatkhate[49], 1988) that higher real interst rates are indeed associated with higher growth rates in developing countries.

## Table 3

**Empirical Testing of the Hypotheses of the Financial Liberalization School :**

**Positive Effect from Higher (Positive) Real Interest Rates on Financial Intermediation**

| Study (year) | Sample | Result |
|---|---|---|
| Lanyi & Scaracoglu (1983) | 21 developing countries | + |
| Fry (1988) | 10 Asian countries | + |
| Chemley & Hussain (1988) | Thailand, Indonesia and the Philippines | + |
| Gelb (1989) | 34 developing countries | + |

**Note** : "+" indicates that the hypothesis was confirmed and that the coffiecients found were statistically significant by usual standards.

**Source :** The same as Table-1

In general, it seems that empirical studies tend to confirm the hypothesis of the financial liberalization school, with the exception of the central hypothesis of the positive relation between interest and savings. This latter qualification is important in appraising the result of these empirical studies. If this relation cannot be confirmed with strong evidence, the positive contribution of financial liberalization to growth may altogether fail. the crucial step in the path from liberalization to growth, i.e., higher savings leading to higher intermediation, leading to more efficient investment and, therefore, higher growth, may then turn out to be weaker than expected. This is especially critical for developing countries.

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[48] Gupta, K.L.(1984) : *Finance and Economic Growth in Developing Countries*, Croom Helm, London.

[49] Khatkhate, D.R.(1988) : "Assessing the Impact of Interest Rates in Less Developed Countries", *World Development*, Vol. 16, No.5, pp. 577-588.

During the early 1980s, the analysis of the relation between financial development and economic growth was enriched with alternative theories which attacked some of the fundamental underpinnings of the financial liberalization school. One strand of this literature, based on a new Keynesian approach to economic theory, stressed the importance of imperfect information in financial markets and its effects on the allocation of resources and on overall economic growth performance. Another, embedded in a structuralist framework, pointed to the importance of informal financial markets in intermediating and allocating resources in LDCs.

## Table 4

**Empirical Testing of the Hypotheses of the Financial Liberalization School:**

**Positive Effect from Higher (Positive) Real Interest Rates on Economic Growth**

| Study (year) | Sample | Result |
|---|---|---|
| Fry (1980) | 7 Asian countries | + |
| Lanyi & Scaracoglu (1983) | 21 developing countries | + |
| Gupta (1984) | 25 Asian and Latin American countries | - |
| Gupta (1986) | India and Korea | + |
| Fry (1988) | 14 Asian countries | + |
| Khatkhate (1988) | 64 developing countries | 0 |
| Gelb (1989) | 34 developing countries | + |
| Polak (1989) | 40 developing countries | + |

**Notes** : "+" indicates that the hypothesis was confirmed and that the coefficients found were statistically significant by usual standards.

"0" indicates that the hypothesis could not be supported since the coefficients were not statistically significant by usual standards.

"-" indicates that the hypothesis was not confirmed and that the coeffiecients were statistically significant by usual standars.

**Source** : The same as Table-1

Jaffee and Russell (1976)[50] and Stiglitz and Weiss (1981)[51], among others, showed that the concept of informational problems was also relavant for the operation of financial markets. Both papers provided an analysis of how credit rationing can arise resulting from existing imperfect information in financial markets about the quality of potential borrowers.

The analysis of Jaffee and Russell and Stiglitz and Weiss showed that demand constraint in the financial market may exist independently of any kind of interventionist policy. In such a situation, fiancial liberalization will have no effect on the extent of credit rationing in the market.

The basic assumption of the Stiglitz-Weiss paper is that the perception of risk of investment projects by borrowers is not evident since the costs of acquiring information are high. They also assume that lenders provide loans to borrowers and that the loan contracts allow for the possibility of bankruptcy. Thus, if the investment project financed fails, the lenders' overall return on lending decreases. Under this assumption, if interst rates on loans increases, borrowers will increasingly undertake investment projects which have a higher rate of return, but, at the same time, there will be higher uncertainty concerning recovery of loaned funds (the incentive effect). Thus, the risk of bankruptcy increases and the expected return on the loan portfolio of a lender may reduce.

Several other studies pointed to this credit rationing effect of imperfect information in financial markets. In most cases, These studies vary in their assumptions about the exact nature of the imperfect information and on information asymmetries between lenders and borrowers.

A second alternative approach to the Neo-Classical financial liberalization school was that followed by structuralist economies.

Van Wijnbergen (1982)[52] and (1983)[53], one of the most influential proponents of the structuralist critique, shows that this need not be the case in the presence of a widespread network of informal financial markets.

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[50] Jaffee, D.M. and T. Russell,(1976) : "Imperfect Information, Uncertainty, and Credit Rationing", *Quarterly Journal of Economics*, Vol. 90, No. 4, pp. 651-666.

[51] Stiglitz, J.E. and A. Weiss, "Credit Rationing in Markets with Imperfect Information", *American Economic Review*, Vol. 71, No. 3, pp. 393-410.

[52] Wijnbergen, S. Van,(1982) : "Stagflationary Effects of Monetary Stabilization Policies : A Quantitative Analysis of South Korea", *Journal of Development Economics*, Vol. 10, No.2, pp. 133-169.

[53] Wijnbergen, S. Van,(1983) : "Interest Rate Management in LDCs", *Journal of Monetary Economics*, Vol. 12, No. 3, pp. 433-452.

In several developing countries, these requirements are rather high for banks in formal financial markets. Under these circumatances, shifting resources from informal to formal financial markets, following freeing of interest rates, may actually lead to less financial intermediation. A crucial assumption here is that banks in informal markets provide an (almost) one-for-one intermediation, whereas banks in formal markets provide only partial intermediation due to reserve requirements (Van Winjbergen, 1983, p. 439)[54].

Van Winjbergen, furthermore, assumes that if formal interst rate are liberalized, economic subjects will substitute their assets in informal markets for bank deposits in the formal market thus leading to decreased intermediation after financial liberalization. Thus, the structuralist analysis shows that the policy implications of the financial liberalization school may lead to unexpected adverse effect on overall economic growth performance.

The assumptions used by structuralist models to describe the efficiency and working of informal financial markets in developing countries may be questioned. The efficiency of informal financial markets in intermediating financial resources to investment projects is a moot question. As the proponents of the financial liberalization school observed, informal markets are, in most cases, small-scale in operation and extremely scattered through the economy which must lead to less efficient allocation of resources in the economy. It may, therefore, be unreasonable to assume that loans from the formal and informal financial sector lead to investment projects which have comparable rates of return (Balassa, 1990[55], p. 60).

The early contributions of Gurley and Shaw on the role of financial intermediation were highly descriptive. In recent years, several authors have tried to explain the role of financial intermediation in real economic activity in the context of a formal model. These recent contributions emphasized different aspects of financial intermediation. Diamond (1984)[56], Fama (1985)[57], Boyd and Prescott (1986)[58] and Moore (1987)[59] explain the existence of financial intermediaries by pointing to their role in furnishing information on financial

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[54] Wijnbergen, S. Van,(1983) : Op. cit. p. 439.

[55] Balassa, B.(1990) : "Financial Liberalization in Developing Countries", *Studies in Comparative International Development,* Vol. 25, No. 4, pp. 56-70.

[56] Diamond, D.(1984) : "Financial Intermediation and Delegated Monitoring", *Review of Economic Studies,* Vol. 91, No. 3, 1983, pp. 410-419.

[57] Fama, E.(1985) : "What's Different About Banks ?", *Journal of Monetary Economics,* Vol. 15, No. 1, pp. 29-40.

[58] Boyd, J. and E. Prescott,(1986) : "Financial Intermediary-Coalitions", *Journal of Economic Theory,* Vol. 38, No. 2, pp. 211-232.

[59] Moore, R.(1987) : *Three Essays on Assymetric Information and Financial Contracting,* PhD Thesis, University of Wisconsin.

market circumstances. These circumstances are, in the extreme case, unknown and cannot be observed by individual savers and investors because of high monitoring costs. In contrast, financial intermediaries are better informed since they have special relations with one or both market participants and they may specialize in acquiring market information and channel this information to market participants. In this way, they contribute to smoothen the process of shifting financial resources from savers to investors.

During the last few years, the analysis of economic growth processes has changed, stimulated by the development of models in which the growth process becomes endogenous. These models emphasize the intial conditions of a country and policy issues which influence their development through time as determinants of the differences in economic growth rates between countries. One important issue, studied extensively in these models, is the influence of the intial stock of human capital on long-run economic growth.

Greenwood and Jovanovic (1990)[60] emphasize the role of financial intermediation in stimulating output growth in an endogenous growth framework. They assume that financial institutions have better access to information on the profitability of investment projects than individuals since they specialize in attracting financial resources and allocating them to projects with the highest yields. Under this assumption, savings contribute to higher economic growth if they are channelled through a well-developed financial sector which is able to select the most efficient investment projects.

Bencivenga and Smith (1991)[61] stress the fact that financial intermediaries stimulate savers to hold their wealth increasingly in productive assets, contributing to productive investment and growth, in the context of an endogenous growth model. They explicitly point out that individuals are willing to hold wealth in financial assets, as long as these assets can be easily liquidated. commercial banks issues these liquid assets to savers in the form of (term and savings) deposits. At the same time, they use these savings to finance high-technology investment projects locking up capital for longer periods to yield high returns. This stimulates overall economic growth performance. These projects would not have been easily financed by individual savers since financing them would make their wealth less liquid. Levine (1991)[62]

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[60] Greenwood, J. and B. Jovanovic,(1990) : "Financial Development, Growth and The Distribution of Income", *Journal of Political Economy,* Vol. 98, No. 5, pp. 1076-1107.

[61] Bencivenga, V.R. and B.D. Smith,(1991) : "Financial Intermediation and Endogenous Growth", *Review of Economic Studies,* Vol. 58, pp. 195-209.

[62] Levine, R.(1991) : "Stock Markets, Growth, Tax Policy", *Journal of Finance,* Vol. 46, No. 4, pp. 1455-65.

follows more or less the same time of thought, but stresses the financing of investment in less liquid investment projects.

Levine (1992)[63] goes back to the question of causation between financial development and economic growth and constructs and endogenous growth model in which a two-way relation between financial markets and economic growth is explicitly modelled.

Saint-Paul (1992)[64] also concentrates on developing stock markets as an important factor in stimulating economic growth. Saint-Paul explicitly points to the contribution of these markets in sharing the risks of enterpreneurship. He suggests that productivity increases if the enterpreneur specializes in certain production processes. At the same time, risks of fluctuations in income may increase, since output is now sold in just a few markets. If stock markets are able to reduce hazards by risk sharing, more enterpreneurs are willings to invest and, thus, overall productivity and economic growth increses.

Finally, Roubini and Sala-i-Martin (1992)[65] try to link financial market policies to economic growth performance. In an endogenous growth model, they show that fiancial repression policies are used by governments to provide them easy access to resources to finance budget deficits. This, however, has adverse effects on overall economic growth.

Several studies try to empirically investigate some of the relations suggested by the endogenous growth models. Roubini and Sala-i-Martin(1992)[66] use cross-section analysis of 98 countries (based on data of the Barro study of (1991)[67]) to analyse whether financial repression, indeed, contracts economic growth performance. Their analysis suggests that for Latin America this hypothesis can be confirmed. Atje and Jovanovic(1992)[68], using a theoretical framework based on the paper by Greenwood and Jovanovic(1990)[69], try to test the hypothesis that stock markets have a positive impact on growth performance and find evidence

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[63] Levine, R.(1992) : Financial Structure and Economic Development (Policy Research Working Papers No. 849), The World Bank, Wahington D.C.

[64] Saint-Paul, G.(1992) : "Technological Change, Financial Markets and Economic Development", E*uropean Economic Review,* Vol. 36, No. 4, pp. 763-781.

[65] Roubini, N. & Sala-i-Martin,(1992) : "Financial Repression And Economic Growth", Journal of Development Economics, Vol. 39, No 1. pp. 5-30.

[66] Roubini, N. & Sala-i-Martin,(1992) : "Financial Repression And Economic Growth", Journal of Development Economics, Vol. 39, No 1. pp. 5-30.

[67] Barro, R.J.(1991) : "Economic Growth in a Cross Section of Countries", *Quarterly Journal of Economics,* Vol. 105, No.2, pp. 407-443.

[68] Atje, R. and B. Jovanovic,(1992) : "Stock Markets and Development", Paper presented at the Seventh EEA Conference, Dublin.

[69] Greenwood, J. and B. Jovanovic,(1990) : "Financial Development, Growth and The Distribution of Income", *Journal of Political Economy,* Vol. 98, No. 5, pp. 1076-1107.

for this. Ghani(1992)[70], based on an empirical study for 50 developing countries, which start with a more developed financial structure, have higher growth perspectives since such a financial structure contributes to a more efficient allocation of financial resources. King and Levine(1992)[71], finally, use data for over 100 (developed and developing) countries and come to copmparable conclusions since they find that financial development and economic growth are highly correlated.

However, the endogenous growth models remain silent on the question of how financial development occurs and how financial development and economic growth are interrelated, questions not answered in the literature of the 1960s and 1970s. As in earlier work, they basically assume that financial development leads to economic growth, without showing the mechanics behind this supply-leading relationship. Moreover, empirical test of these models remain a problem. In all cases, simple regression methods are used based on cross-section or pooled data analysis. Such analysis does not tell much about the exact relation between financial development and economic growth (Pagano,(1992)[72], p.9). According to Renelt(1991)[73], pp. 26-27), empirical testing of endogenous growth models and models taking of account of financial development issues, in particular, is still a problem, since "... (they) have not yet been distilled into a standard empirical framework".

## 1.2 OBJECTIVES :

The main objectives of this study are :

1. To provide the rationale and theoretical underpinning regarding the role of financial development as a means of accelerating economic growth of Indian economy.
2. To provide an enlightened treatment of the fundamental theoretical issues involved in the relationship between finance and economic growth.
3. To assess empirically and analyse relationships between the following :
   a. Financial repression and financial deepening.
   b. Financial intermediation, financial repression and capital accumulation.
   c. Financial intermediation, interest rate and resource allocation.
   d. Financial intermediation and aggregate savings.
   e. Financial repression and aggregate savings.
   f. Rate of return, financial intermediation and the structure of savings.
   g. Money (real balances), production function and technical change.

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[70] Ghani, E.(1992) : How Financial Market affects long-run Growth : A Cross-Country study, Policy Research Working Papers, WPS 843, The World Bank Washington, D.C.

[71] King, R.G. & R. Levine,(1992) : Finanacial Indicators and Growth in a Cross Section of Countries, (Policy Research and External Affairs Working Papers No. 819), The World Bank, Washington D.C.

[72] Pagano, M.(1992) : Financial Markets and Growth : An Overview, Paper Presented at the Seventh EEA Conference, Dublin.

[73] Renelt, D.(1991) : *Economic Growth : A Review of the Theoretical and Empirical Literature,* (Policy Research and External Affairs Working Papers No. 678), The World Bank, Washington D.C.

4. To develop and estimate an econometric model of the Indian economy to exmine the pattern of simultaneous interaction between monetary and financial deepening and economic development.

## 1.3 HYPOTHESES :

1. Real money balances are akin to other productive factors such as labour and capital and therefore, should be included as a productive factor in the aggregate production function. Increase in the absorption and use of real balances results in an efficient organisation of the production and market system; as a resullt labour and capital are retired form the function of exchange and are available for use in the production process itself.

   In essence, real balances have a marginal productivity which is positive and which decreases as the intensity of their use increases. The extent of their substitution for other productive factors depends, as in case of other inputs, upon their marginal productivity and the opportunity cost of holding them. However, the holding, by the public, of balance defined as M/P (where M is the nominal money stock and P, the general price level) can not be increased by increasing M, which is by and large, a policy variable. The demand for real balance is completely endogenous; irrespective of the level of M, the public can - and usually does - adjust its holdings of real balances by changing P.

2. The development of the financial structure leads to specialization in the functions of saving and investment and thereby, to channelization of investible resources from less productive investment opportunities (in which the surplus units would be compelled to invest in the absence of a financial system) to more productive investment opportunities. This would increase the marginal productivity of the aggregate capital stock.

3. Financial development would result in increase in the saving propensity in economically backward societies. This thesis is based on the premise that savers are not always the best investors; further, they are not always ready to make their savings directly available to the investors because of the difference in their risk aversion, desired maturity pattern, etc. Thus in a society without a financial system, the savers would have no incentive to save more than they can efficiently invest and the investors

would not be able to save enough to self finance all their desired investments. The surplus units would therefore tend to over-consume and investors would be forced to under invest. The development of an efficient financial system would encourage and help the savers to save to their desired level by offering to them a wide range of financial instruments to match their risk, return and liquidity preferences with those of the investors. Further, by the sheer size of their portfolio, the financial institutions can pool the risk and minimize the spread between the lending and deposit rates, thereby making saving more attactive.

4. There appears to be a two way causality between financial development and economic growth. In this context, two apprroaches are indentified :

(i) **DEMAND FOLLOWING :** In this, the creation of modern financial institutions, their financial assets and liabilities and related financial services is in response to the demand for these services by Investors and savers in the real economy. Thus the evolutionary development of the financial system is a continuing consequence of the pervasive sweeping process of economic development. The nature of the demand for the financial service depends upon the growth of real output and on the commercialization and magnetization of agriculture and other traditional subsistence sector; thus the more rapid the growth of real national Income, the greater will be the demand by enterprises for external funds and financial intermediation.

(ii) **SUPPLY LEADING APPROACH :** This approach states that the creation of financial institution and supply of their financial asssets, liabilities and other services is always in advances of demand for them. That means supply of financial infrastructure precede economic development, supply leading has two functions :

1. To transfer resources form traditional sector to modern sector.
2. To stimulate an enterpreneurial response in this modern sector.

Supply leading approach implies an opportunity to induce real growth by financial means.

5. The orthodoxy of the fifties and sixties was that interest should be kept low to stimulate investment. Rising world inflation in the late sixties and seventies focused intention on the detrimental effect of the negative interest rate on the allocation of the

resources, the distribution of resources and mobilization of the savings, As a result, policy recommendation is that lending and deposit rates should be positive in real terms and Intermediation spread should provide an adequate return to the financial institution.

6. The rate of physical capital accumulation has always been accorded a major role as a source of economic growth. Regarding the determinants of physical capital formation, two approaches can be identified, the first is the "financial structurralist" view which maintains that a widespread network of financial institutions and a diversified array of financial instruments will have a beneficial effect on saving investment processes and hence, on growth. The other is the 'financial repressionist' view which considers low real interest rates, caused by arbitrarily set ceilings on nominal interest rates and high and variable inflation rates, as being the major impediments to financial deepening, capital formation and growth. According to Mckinnon, in a self-financed economy where indivisibilities in investment are important, real cash balance serve as a 'conduit for capital formation. The basic idea is that in such an economy, accumulation of real cash balances must precede accumulation of physical capital. But since the demand for real cash balance is postulated to be positively and significantly related to the real rate of return on such balances, it immediately follows that capital formation is a positive function of this rate of return and this is the 'complementarity hypothesis' of Mckinnon.

The Neo-Liberal school emphasize that increased degree of financial intermediation will make allocation of resources more efficient. This will require an examination of the allocative implications of financial intermediation. One approach would be to estimate rates of return of capital in different sectors and then try to ascertain the extent to which these differencs can be ascribed to financial intermediation.

An alternative approach would be to use the marginal capital output ratio as a proxy for resource allocation efficiency and statistically, it should be regressed on variables reflecting financial intermediation and repression.

**1.4 METHODOLOGY :**

Secondary data pertaining to both financial growth variables and indicator variables for economic growth are utilized for the Indian economy for a period of forty five years starting

with 1951-52. The major variables included and analysed in the study are : real net domestic product, savings, capital stock, capital output ratio, money stock, labour force, wholesale price index, real net investment, real deposit rate, real lending rate, total government borrowing, total priority sector credit by scheduled commercial banks.

For empirical analysis, the ordinary least squares procedure of estimation is used in fitting equations to basic data. In order to avoid the simultaneity basis in the econometric macro-model, the estimates will be arrived at by two stage least-squares method. The criteria adopted in judging the goddness of fit are those employed in any quantitative exercise, namely, the magnitudes of the co-efficient of multiple determination, the standard error of the estimate, the statistical significance of the measured effects of exogenous variables, and even more importantly, signs expected for them in terms of received economic theory and the order of the Durbin-Watson statistic.

In order to assess empirically the extent to which real balances effect real Income and also to ascertain whether marginal productivity of real balances is positive or not, a Cobb - Douglas type production function is proposed and estimated. A detailed sector-wise and instrument-wise analysis of flow of funds is made which would involve an analysis of volume of savings, pattern of savings. Its sectoral composition and also pattern of capital formation. The present study proposes the following financial ratios as Indicators of financial development :

1) Finance Ratio (FR)
2) Financial Intermediation Ratio (FIR)
3) Financial Inter-relation Ratio (IR)
4) New Issue Ratio (NIR)

The present research also proposes to ascertain and empirically assess the casusation between financial development and economic development, that is to say, the approaches of demand following and supply - leading will be econometrically assessed and for this purpose causality test procedure proposed by Granger would be utilised.

## 1.5 SOURCES OF DATA :

The major sources of data used in this study are the following :

1. The national Account Statistics CSO publication, Government of India.
2. Various issue of Reserve Bank of India Bulletin. Publication Reserve Bank of India.
3. Report on currency and finance. Reviews and publications department of economic analysis and policy for the Reserve Bank of India.

4. Economic survery.
5. Centre for Monitoring Indian Economy (CMIE). Publication Economic Intelligence Service.
6. International Financial Statistics.(Publication of international monetary fund.)

**1.6 CHAPTERIZATION :**

The study is divided into six chapters.

Chapter one is Introductory. It covers rationale of the study, Research Methodology, Review of the Literature, Proposed hypotheses and chapterization scheme.

Chapter two Reviews and surveys the financial development in India since 1950-51. This will be accomplished with the help of flow of funds and the financial ratio analysis.

Chapter three analyses thoroughly following relationships empirically :

1. Financial repression and financial deepening.
2. Financial Intermediation, financial repression and capital accumulation.
3. Financial intermediation and aggregate savings.
4. Financial repression and aggregate savings.
5. Rate of return, financial intermediation and structure of savings.
6. Financial Intermediation, interest-rate and resource allocation.
7. Money (Real Balances), Production function and technical change.

Chapter four will empirically evaluate the direction of causality between financial development and economic growth.

Chapter five will assess the role of money and finance assessed within a macro-economic model which will involve estimation or simultaneous equations and though twostage least square method.

Chapter six will provide the summary, the major conclusions and policy - recommendation.