Chapter - I

INTRODUCTION

India opted for holistic economic reforms in 1991, and over the last quarter of a century, several reforms followed in her macroeconomic management. The process, indeed, began with the financial sector reforms. A general curiosity is then: Why should the financial sector reforms precede the overall economic reforms? Its answer explains the *raison de etre* of this dissertation. Belonging to a broader genre of efficiency issues in commercial banking, our line of argument is that the financial sector crucially promotes economic development in a country so that, prior to thinking about economic prosperity, the policy-makers should seek for efficiency of financial intermediaries. This is, indeed, the subject matter of Section I in this chapter. Keeping this backdrop in mind, we proceed to examine in Section II whether India's commercial banking system subserved the growth interest of the country prior to the days of reforms. This establishes the rationality of the banking sector reforms in India. Section III narrates in brief the major reforms in this field during 1991-2016 so as to understand the underlying objectives of India's financial sector reforms. In Section IV, we discuss the main motivation of this dissertation, that is, the question of efficiency, in theoretical sense. Various types of efficiency measures that are developed in the literature are discussed here. Finally, Section V presents the major objectives of this dissertation, its underlying research questions, as also the organisation of chapters that follow. Section VI summarises the major observations and suggestions by way of conclusion.

Section I: Finance and Economic Development

Money is primitive to the financial system. A financial economy develops only when money steps into the real sector, *a la* Don Patinkin,[1] as a commodity. Though it is bought and sold in the market like other commodities, it ushers in a breakthrough in the growth trajectory of the real sector. Finally, it gives rise to a monetised economy, as opposed to the real economy, based on the financial sector. But a pertinent question is: how does money perform this development task? To Adam Smith, the division of labour is the kingpin to the rapid economic progress; and, without money, the division of labour cannot take place.[2] Facilitated by the use of money, the division of labour ushers in specialisation among various workers in the society, whereby their productivities are augmented, and the wealth of the nation adds on. Adam Smith establishes this argument theoretically with rigour, and also empirically citing the evidence of ancient economic development in Bengal and China.[3]

But the perception about money, and hence about the financial system, undergoes changes in the writings of neo-classical economics. There we find money acting simply as a veil in the economy - beneath the veil, the real sector operates. Money is, therefore, neutral to the real sector development. The neo-classical macroeconomic system[4] consists of a production function

$$y = F(N) \qquad (1.1)$$

[1]Patinkin,*Money, Interest, and Prices*
[2]Smith, *An Inquiry into the Nature*, pp. 3–20
[3] Ibid
[4]Ackley,*Macroeconomics*, pp. 144-146

where y is the output and N the level of employment; the labour market equilibrium:

$$f'^{-1}\left({}^{w}/_{p}\right) = F\left(\frac{w}{P}\right) \qquad (1.2)$$

where $f'^{-1}\left({}^{w}/_{p}\right) = N$ is the inverse demand function for labour, $F(\frac{w}{P}) = N$ is the supply function of labour; and, finally, the capital market equilibrium:

$$I(r) = S(r) \qquad (1.3)$$

where $S = S(r)$ is the saving function and $I = I(r)$ is the investment function. Given that $f'(N) > 0, F'\left({}^{w}/_{p}\right) > 0$, $S'(r) > 0$ and $I'(r) < 0$, we obtain the values of N, y, r and ${}^{w}/_{p}$.

To derive the money market equilibrium, the Fisher's quantity theory of money is used:

$$M = kPy \qquad (1.4)$$

Given the supply of money M, and also the equilibrium values of y and k, we get the equilibrium price level P. Now, if the supply of money is changed, the price level simply moves concomitantly keeping the real sector unaltered. Even, it cannot generate any impact for the capital market since equilibrium condition for the market does not involve any of these money market variables. However, by using money as a commodity, Patinkin removes this dichotomy between the real and monetary sector on the basis of the Say's Law in the identity sense and the Walras Law.[5]

[5] Patinkin, *Money, Interest, and Prices*

In the Keynesian system,[6] however, the dichotomy is totally absent mainly because of the reformulation of the demand for money. Keynes introduces the demand for money function as

$$M_d = L(Y, r) \qquad (1.5)$$

With the classical assumption that

$$L'_y(Y, r) > 0 \qquad (1.6)$$

he assumes

$$L'_r(Y, r) = 0 \text{ at} r = r_{min}$$

$$= \infty \text{at} r = r_{max}$$

$$< 0 \text{ otherwise}$$

Now if there is any change in the money supply, there would be no change in the transaction demand for money (M_t) as $k, P$and$y$ remain unchanged. Hence, the speculative demand for money changes, which, in turn, lead to a change in the rate of interest. The capital market would then be affected since investment is a function of the rate of interest. Thus, the money market equilibrium in the Keynesian formulation

$$M = L(Y, r)(1.7)$$

integrates the real sector and the monetised sector. Thus, the changes in y in the real sector affects the money market equilibrium through the transaction demand for money; and the changes in r in the money market equilibrium leads to changes in the real sector through the capital market.

[6] Klien, *Keynesian revolution*, pp. 56-90; for Keynesian theory of money and price, see Hansen, *Guide to Keynes*, pp. 183-204

From the classical perception of macroeconomic behaviour, however, the present literature advocates two important lines of argument in support of the relationship between finance and economic development. One line, as provided by Joseph Schumpeter,[7] is that the circular flow of income across various sectors in the economy leads to economic stagnation. Only the innovator can break through the circle by way of introducing new products and/or new processes in the society. Such innovations are difficult to keep afloat without financial assistances from banking institutions. Here lies the role of commercial banks in economic progress. Schumpeter writes, 'The banker therefore is not so much primarily a middleman in the commodity of "purchasing power" as a producer of this commodity'. 'However', he continues, 'since all reserve funds and savings today usually flow to him, and the total demand for free purchasing power, whether existing or to be created, concentrates on him, he has either replaced private capitalist or become their agent; he has himself become the capitalist par excellence.'[8] Thus, to him, a bank 'stands between those who wish to form new combination and the possessors of productive means. He is essentially a phenomenon of development, though only when no central authority directs the social process.'[9] Growth dynamics are thus injected in a stagnated economy through the network of financial intermediaries.

Schumpeter also anticipates the second line of argument that Gurley and Shaw develop. The Schumpeterian analysis is based on the division of the society in two groups, the savers and the investors, or in the language of Schumpeter, 'the possessors of productive means' and 'those who wish to form new

[7]Schumpeter, *Theory of economic Development*
[8]Ibid, p.74
[9] Ibid, p.74

combination'.[10]Taking this as the starting point of their hypothesis, Gurley and Shaw[11] examine the significance of finance in economic progress using Adam Smith's paradigm of the division of labour. They begin with a surmise that there exists a division of labour in the society in respect of individuals' income-expenditure levels. Some are deficit units, and the others are surplus, who subsequently play the respective roles of savers and investors in the economy. If everybody carries out balanced budget, the need for financial intermediaries would no longer be felt. However, the division of labour between savers and the investors 'leads to issue of primary securities by ultimate borrowers' and to 'acquisition of financial assets by ultimate lender.'[12] As the economic growth progresses further, the division of labour becomes more intricate, leading to the evolution of financial institutions. Growing still further, Gurley and Shaw argue, the division of labour leads to financial institutions taking money from the savers by 'paying a deposit rate' and lending it to the investors by charging a lending rate of interest.[13] The spread between those interest rates pays off for the risk of intermediation. This argument reinforces the belief that financial development is a necessary condition for economic development, and also underlines that the financial sector grows in complexity as economic development takes place. They further argue that, in the course of economic development, financial assets grow at a grater pace than the rate of growth in gross national product.

[10] Ibid, p.74
[11]Gurley and Shaw, 'Financial Structure'
[12]Ibid, p.259
[13] Ibid, p.259

Table 1.1: Cross-country Evidences for the Gurley-Shaw hypothesis, 2013

World Bank Classification of Countries[1]	Countries	Financial Development Index[2]	Financial Institutions Index[3]	Financial Market Index[3]	UNDP HDI[4]
Low Income	Chad	0.083	0.154	0.01	184
	Nepal	0.176	0.323	0.026	145
	Sudan	0.086	0.171	0	171
Lower Middle Income	India	0.392	0.344	0.431	135
	Pakistan	0.197	0.261	0.129	146
	Sri Lanka	0.27	0.349	0.185	92
Upper Middle Income	Brazil	0.652	0.79	0.502	79
	China	0.572	0.511	0.63	91
	Thailand	0.645	0.666	0.61	103
High Income Non OECD	Singapore	0.731	0.752	0.695	9
	Saudi Arabia	0.53	0.396	0.653	34
	UAE	0.473	0.449	0.488	40
High Income OECD	Germany	0.747	0.748	0.731	6
	Korea, Rep	0.854	0.789	0.902	15
	United States	0.877	0.833	0.903	5

Sources: 1. World Bank, *Global Financial Development Database*; Retrieved on 15 March 2016 from http://www.worldbank.org.

2 & 3. Svirydzenka, K. *Introducing a broad Based Index for Financial Development*; Retrieved on 15 March 2016 from https://www.imf.org,

4. UNDP, *Human Development Report2014*; Retrieved on 15 March 2016 from http://hdr.undp.org,

In Table 1.1, we seek to gather information in support of the Gurley-Shaw hypothesis. On the basis of the UNDP's cross-section data on the Human Development Index (HDI) in 2013, the table brings out the relationship between financial development and economic development. The financial development is measured by the financial development index, which comprises of the financial institution index and the financial market index. Each of these indices contains various sub-indices relating to financial access, financial depth and the efficiency of the financial institutions and the financial market. The income-wise classification of countries is, however, based on the World Bank's classification. The table suggests that the low-income group countries rank low on the financial development index as well. Thus, the poor countries like Chad, Nepal and Sudan belong to the lower end of the financial development index, at 0.083, 0.176 and 0.086 respectively. Financial markets are seriously lacking in them - either totally absent, or only at a nascent stage of development. The financial market index for Chad, Nepal and Sudan stands at 0.010, 0.026 and 0.000 respectively. Let us emphasise also the case of the Human Development Index (HDI), which represents an alternative measure of economic development. The table underlines that low values of this measure are associated with the countries where the financial development index assumes lower values. The story is opposite for high-income group countries - such as those belonging to both the OECD and the non-OECD blocks – which are characterised with a high financial development index, so also its constituent indices. Columns 4, 5 and 6 of Table 1.1 corroborate this proposition.

McKinnon[14] and Shaw[15] shed further insights into the hypothesis of concurrent movements in financial and economic development. Their argument is that the financial repression adversely affects savings and investment, and thereby economic growth. A financially repressed country is characterised by a high degree of government intervention in the financial market, whereby its competitive environment is lost. The rate of interest is suppressed, and hence, savings shrink and investments are distorted, preventing economy to grow optimally. A body of empirical studies corroborate this hypothesis. Reading this hypothesis in the reverse way, we are inclined to conclude that a free financial market, which promotes financial development, must usher in rapid economic development. Similar logic is reiterated by Goldsmith[16] who views savings as the means of 'financing of capital formation'.[17] He emphasises that it is not only the rate of savings, but also its distribution, which determine economic development. Goldsmith pioneers the study of international comparison in financial development on the basis of various ratios relating to financial development.

However, the question that is blurred in the literature is the line of causation between the economic development and the financial development. Patrick[18] recognises both ways of this relationship classifying them as 'demand following' and 'supply leading' phenomena. The former refers to the case where '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

[14] See McKinnon, *Money and capital in economic development*.
[15] See Shaw, *Financial Deepening in Economic development*.
[16]Goldsmith, *Financial Structure and Development*
[17]Ibid, pp. 114-123
[18] Patrick, 'Financial Development '

and savers in the real economy.'[19] In contrast, the ' "supply leading" scenario represents creation of financial institutions and the supply of their financial assets, liabilities, related financial services in advance of demand for them.'[20] The financial sector plays only a passive role in the former case. But, in the latter, it performs twin functions together, (i) transfer of resources from the traditional sector to the modern sector, and (ii) promotion of entrepreneurial skill in the modern sector.[21]

Levine and King[22]contest this line of argument on the basis of empirics for 80 countries over 1960-89. Their objective is to investigate the 'relationship between level of financial development and future rates of long run growth'.[23] They conclude, 'Financial development is a good predictor of long run growth over next 10 to 30 year.'[24] Their further finding is that financial development is 'strongly' and 'significantly' associated with the 'future rates of capital accumulation' and 'efficiency of capital use.'[25]

Levine[26] puts forward five explanations for the impact of the financial development on economic growth. In the wake of growth in financial intermediaries, the economic growth is promoted as: (i) the exchange of goods and services is facilitated; (ii) savings are augmented; (iii) capital accumulation and technological innovations are accelerated; (iv) the resources are properly allocated; and finally (v) the resources are better utilised under the supervision of financial intermediaries. Levine argues that, because of information asymmetry, high transaction costs are

[19] Ibid, pp. 174-176.
[20] Ibid, p.175
[21] Ibid, p.175
[22] King and Levine, 'Finance and Growth'
[23] Ibid, pp. 718 - 719
[24] Ibid, p.719
[25] Ibid, p.719
[26] Levine, 'Financial Development and Economic Growth'

always involved, which financial intermediaries minimise by diversifying the liquidity risk. As a result, savings are promoted, resources are better allocated, and finally, a high rate of long-run economic growth follows. According to him, with the reduction in information cost 'markets are better at selecting the most promising firm and managers will induce more efficient allocation of capital and faster growth'.[27] Along with providing the financial help to a business firm, the financial intermediaries can also enforce corporate control on the managers by compelling 'firm managers to manage the firm in the best interest of the owners.'[28] His line of argument is that: 'More specialisation requires more transaction. Because each transaction is costly, financial arrangements that lower transaction cost will facilitate greater specialisation.'[29] This is surely in tandem with what Adam Smith professes: specialisation is the main source of the wealth of a nation. Levin's logic is thus clearly in line with Gurley and Shaw.

Section II: The Indian Financial System

The banking system that India inherited from the British rule was underdeveloped, and also highly skewed towards urban areas. According to an RBI source of 1947, there were 200 commercial banks in Madras, 106 in West Bengal, 40 in Bombay.[30] These states contemporaneously exhibited flourishing commercial activities, and that was why, under the spirit of lassiez faire, the banking service was concentrated in those states.

Banks' private ownership also contributed to a lop-sided development in Indian banking. Only a small group of shareholders had ownership over those banks

[27] Ibid, p.695
[28] Ibid, p.696
[29] Levine, 'Financial development and economic growth', pp. 690-701
[30] RBI, *Report on Currency and Finance*, 2006-08, p.85

so that the country's financial power got highly concentrated. The underlying proprietorship also gave rise to the phenomenon of inter-locking directorship between banks and business houses, whereby a same set of people controlled both the institutions. Because of such inter-locking, bank loans were sanctioned without much consideration about their proper utilisation and/or the rate of return there from. The country's financial resources were not, therefore, properly allocated. But, in other respects, those institutions were highly risk-averse. To minimise the business risk, they used to finance trading activities, and that too, only the activities undertaken by large business houses. Bank loans remained, therefore, largely beyond the reaches of small and medium entrepreneurs. The flow of fund that followed thus generated skewed distribution of wealth and income in the economy. Skewed regional development was also an outcome in this process. Insofar as the big business houses and their commercial activities gravitate around urban areas, bank loans were meant for economic development only in those places, leaving the vast rural tract underdeveloped. Even in 1969, we find that the rural areas were served only by 17.6 percent of bank branches, where a meagre 3.1 percent of total deposit was mobilised, and only 1.5 percent of total credit was allocated. In contrast, the metropolis, only a few in number, shared as much as 18.3 percent of bank branches with a 49 percent share in total deposits and a 67.2 percent share in credit.[31]

The force of the logic, as perceived above, suggests that India's commercial banks should have historically little involved in agricultural financing as it suffered from high risks in a developing country like India. Because of its dependence on monsoon, Indian agriculture was always risk-prone, on the one hand, and, on the other, agricultural farms were held by a large number of small and tiny farmers with a

[31]Narayana, 'Banking sector reforms', p. 27.

very low level of credit-worthiness. Commercial banks did never accommodate them. Unable to get any bank accommodation, they became the prey to the village money-lenders, who always charged a very high rate of interest. To validate this line of argument, we note that, in 1951-52, only 0.9 percent of the credit came from commercial banks while 44.8 percent were obtained from village money-lenders.[32] Agriculture's deplorable scenario was also reflected in that, notwithstanding its 55 percent share in GDP in 1950, the sectoral deployment of credit stood only at 2.3 percent for agriculture, compared to 32 percent for commerce and 51.7 percent for industry.[33]

While these factors explain the misallocation of financial resources prior to 1969, the contemporary banking practices handicapped the mobilisation of savings as well. Since the vast tract of rural India was largely out of the banking arena, the rural savings could not be optimally mobilised. Also, in the absence of banking, there was least incentive to save. There were, indeed, high propensities to keep wealth in jewellery, which obstructed the flow of fund to investment. Sources indicate that, in 1968, India's savings stood only at Rs 3122 crores[34], which, as we see shortly, rose rapidly once its rural hinterland was brought under banking network.

To remove these shortcomings, 14 major commercial banks were nationalised in 1969, heralding the age of 'directed' finance in Indian economy. The erstwhile drawbacks were largely addressed in the reforms that followed. One was surely the spread of banking service across the country, including its rural areas. In about five years after the nationalisation of banks, the number of bank branches grew by 129 per cent, and by 1990, there were as many as 59,752 branches of commercial banks in

[32]RBI, *Report on Currency and Finance*, 2006-08, p.91
[33]Ibid, p.90
[34] Ibid, p.102

India, as against only 8,187 in 1969. It significantly augmented banking services in the country. The population per branch evidently declined from around 65,000 in 1969 to 13,756 in 1990. Rural areas were greatly benefitted thereby. Their share in the banking network increased from 17.6 per cent in 1969 to 58.2 per cent in 1990 representing more than three-fold augmentations. These holistic changes were ushered in under the auspices of the RBI's branch licensing policy. RBI also sought to ensure that the rural deposits were not siphoned off to urban financing. To this end, the banks were required to maintain a credit-deposit ratio of 60 per cent regionally.[35] In the regional spectrum, therefore, balanced economic development followed. Thus, for example, the shares of southern and western regions of the country in the total distribution of banks decreased from 33.7 per cent and 20.9 per cent respectively in 1975 to 26.8 per cent and 15.4 per cent in 1991. In contrast, the share of the erstwhile neglected areas of north-eastern and eastern regions rose from 1.5 per cent and 11.8 per cent respectively to 3 per cent and 18.4 per cent during the same time period. [36]

The branch expansion gave a fillip to household savings since a larger number of people were brought under banking services. The household savings escalated from 8.5 per cent in 1969 to 14.3 per cent in 1980 undergoing an annual growth rate of 6.2 per cent, on the average. The growth continued, and became more discernable in the absolute scale. For 1969-90, the rate of growth in this scale was 19.38 per cent per annum - from Rs.3,122 crore in 1969 to Rs. 15,828 crore in 1990. Likewise, bank deposits grew annually by 9.87 per cent - from 10.5 per cent in 1965 to 21.9 per cent in 1980.[37]

[35]Ibid, p. 98
[36] Ibid, p. 99
[37]Ibid, p.99

Bolstered by the accumulation of fund at banks, Indian policy-makers sought to make use of it in development planning. To subserve the basic planning objective of more equitable distribution of income and wealth, RBI devised the concept of priority sector lending to financially assist the poorer sections of the society, as also to channelize the available funds to desirable sectors in the economy. A given percentage of banks' lending - about 40 per cent[38] - was earmarked for that purpose. Also, lower interest rates were prescribed for them. For the economic activities belonging to the non-priority sector, selective credit control policy was adopted to restrict the flow of fund there. Thus, a differentiated interest rate structure came to prevail in India's commercial banking.

Along with these positive manifestations, the banking sector reforms in the sixties bred some evils in the banking system, which gave rise to inefficiency. The crux of the problem was certainly the state intervention in the management of financial policies under India's avowed objective of 'socialistic pattern of society'. With the nationalisation 14 banks in 1969 (followed by six more banks in 1980), the public-sector banks dominated the country's flow of fund. Moreover, new entry was totally prohibited during 1969-90 under the contemporary licensing system, which completely restricted competition in the industry. Although smaller private banks were not nationalised, their activities were highly restricted reducing them to insignificance. A further dimension of the problem was the lead bank scheme (LBS), under which each district was allotted to a particular nationalised bank. Those banks were responsible for assessing the credit needs of their respective areas and chalked out plans for branch expansion for different banks. There is no doubt that the branches had expanded thereby, but the banking industry largely resembled to an amalgam of

[38] Ibid, p.100

market-sharing oligopolists. The safety-net provided by the government to the nationalised banks, and the absence of competition, guaranteed by prohibition on new entry, enabled the public-sector banks to grow in size, but with a loss of efficiency. It is indeed an economic truism that a restricted market and its monopoly structure always breed inefficiency.[39]

Another serious drawback of India's contemporary macroeconomic management was the interdependence between the fiscal and monetary policies. For one thing, the promotion of economic welfare of the poorer sections of the society, and also the removal of regional backwardness, are the issues that fiscal policies should solve. But, in India, we find that, through the Reserve Bank of India, commercial banks were instructed to lend financial assistances to them at subsidised rates of interest. Since about 40 per cent of bank loans were earmarked for the so-called priority sector, the financial health of banks was at stake. This was surely not what the principles of commercial banking suggest. Nor was it proper for any central bank to execute. While the theory always preaches for independence between fiscal and monetary policies, this basic principle was subverted in India. It should be noted that, because of the priority-sector lending, the credit worthiness of loan recipients was not properly assessed so that the commercial banks started to growingly encounter the problem of loan repayment and growth of non-performing assets. Also, since the banks were compelled to provide loans at various subsidised rates of interest, market forces could not determine the price of fund in India.[40] Another field of blatant intervention of fiscal questions in monetary policies is the pre-emptive ratios for the banks. We are aware that commercial banks should optimally determine

[39]Samuelson and Nordhaus, *Economics*, p.186
[40]RBI, *Report on Currency and Finance*, 2006-08, p.95

these ratios to trade-off between high costs of fund from the central bank and the cost of unutilised resources. In the case of low pre-emptive ratios, the banks may be compelled to seek accommodation from the central bank if liquidity problems arise in the wake of heavy withdrawal. On the other hand, a high pre-emptive ratio involves non-utilisation of fund that has been mobilised on interest. In modern banking, the central banks are statutorily authorised to fix those rates for the safeguard of public at large, keeping surely the financial interests of banks at the centre. In India, the scenario was different. From the second Five-Year Plan onwards, the Government of India had been increasing its expenditure without proportionately increasing the income so that the fiscal deficits increased. It rose from 3.1 per cent of GDP in 1970 to 10 per cent in 1991.[41] To make good a part of those deficits, the treasury bills were declared as liquid assets, which the commercial banks could hold as Statutory Liquid Assets (SLR). At the same time, RBI steadily increased SLR from the statutory minimum rate of 25 per cent in 1964 to 38.5 per cent, as it was in 1990.[42] In such circumstances, the commercial banks were to keep their funds in this less productive asset, and the government's interest was promoted. Their financial health accordingly deteriorated. The fiscal deficits that could not be accommodated in the above way, however, caused inflationary pressure in the economy. In 1990, for example, India experienced a double-digit inflation rate presumably for the macroeconomic mismanagement.[43] Then again, the government fell back on the Reserve Bank of India to correct inflationary pressures. To check the price rise, the Reserve Bank raised the Cash Reserve Ratio (CRR), and thus further hurt the commercial banks. Let us note in this context that before the 1960s, the CRR and SLR were not revised

[41]Bahttacharya and Sivasubramanian, 'Aspects of Banking Sector Reforms', p. 4151
[42] RBI, *Report on Currency and Finance*, 2006-08, p.105
[43]Little and Joshi, 'Macroeconomic Stabilisation in India', p.2659

appreciably. But an upshot followed since 1969, and in 1990, we find the former at 15 per cent with an incremental CRR of 10 per cent, and the latter at 38.5 per cent[44]. Both were at their respective statutory ceilings. The evil effects of those interventions are easily understood in a hypothetical situation. Recognising the contemporary scenario of pre-emption at 55 per cent (15 per cent as CRR, around 1.5 per cent as incremental CRR, and 38.5 per cent as SLR), we note that only 45 per cent of the mobilised funds were available for lending. Given the priority sector lending at 42 per cent, only a slim amount was left at the disposal of the banks for the corporate sector. Assuming the contemporary deposit rate at around 9 per cent, and the interest on the government treasury bills at around 3 per cent, we may get an idea about the evil effects of contemporary banking policies. For a deposit of Rs1000, a bank was to pay Rs 90 to the depositor at the end of the year. Given the pre-emption at Rs 550 (containing Rs 385 as SLR), the bank could get Rs11.55 at the maximum. Of the remaining amount (i.e. Rs 450), 42 per cent (i.e. Rs189) was directed to the priority sector. If the rate of interest on the priority sector is at 7 per cent, it would earn an interest of Rs13.23. In this hypothetical scenario, the bank was to charge an interest rate of about 25 per cent from the corporate sector to attain the break-even point. With such a high rate of interest India's corporate sector became highly uncompetitive. Also, commercial banks became highly inefficient without any fault of their own.

We should add also that, in the absence of competition and various forms of financial repressions, Indian commercial banks became highly inefficient, adversely affecting the country's development prospect. Available sources indicate that the return on assets of PSBs evidently fell from 0.59 in 1970 to 0.15 in 1990.[45] Again, in

[44] RBI, *Report on Currency and Finance*, 2006-08, p.105.
[45] RBI, *Report on Currency and Finance*, 2006-08, p.107

1992-93, the non-performing assets of PSBs accounted for 24 per cent of total credit. Only 15 PSBs earned profit while others faced negative net worth.[46] With such a financially weak commercial banking, it was difficult to achieve a high economic progress.

Section III: The Financial Sector Reforms.

India's policy-makers, however, gradually kept abreast of these shortcomings of financial repressions, and set up two committees, one by RBI under the chairmanship of Sukhamoy Chakravarty in 1985, and the other by the Government of India under the chairmanship of M. Narashimam in 1991. The thrust of the former report was to infuse competition in commercial banking. Without altering the basic tenants of India's socialistic structure, it recommended for relaxations in administered interest rates that had then been in practice. It viewed the low rates of interest as a means of monetisation of government debt, which, in the long run, discouraged proper allocation of credit among borrowers, incentives to save among consumers, and also profitability among banks. As to the questions of various interest rates, the committee recommended that: (a) RBI should take into account the deposit rate of interest in real term, which should be added to the expected inflation rate, to arrive at the nominal rate of interest on deposit; (b) RBI should fix up only the floor rate of interest for lending with a minimum administered spread of 3 per cent, and allow for market competition among banks; and (c) there should be an upward revision of the interest rates on Treasury Bills so that they could compete with other rates in the open market. The issue of competitive environment thus dominated the recommendations of the Chakravarty Committee.

[46]Shirai, 'Assessment of India's Banking Sector Reform', p.101

The issue of market competition was farther carried by the Narasimham Committee.[47] Three-prong strategy was recommended to this end. The foremost one was to increase the number of players in the market by allowing both private Indian banks and foreign banks in India's commercial banking. The government had accepted the recommendation, and acted accordingly. As many as 19 private Indian banks and 43 foreign banks came up by 2013. Foreign Direct Investment (FDI) had also been brought under the automatic route.[48] For private banks, the FDI limit (including the investment by FPIs) is now 74 per cent - automatic up to 49 per cent and from 49 per cent onwards through the government route. At present, foreign bank operates in India through only one of three channels, (i) branches, (ii) wholly owned subsidiary, and (iii) subsidiary with aggregate foreign investment up to a maximum extent of 74 per cent in private bank. [49] The Bank authorisation policy was also liberalised in 2013. The scheduled commercial banks (SCBs) have been allowed to open branches in Tier1 to Tier 6 centres without any approval of RBI. The same rules do not, however, apply for foreign banks. The foreign banks have to bring in a capital of US$25 million upfront at the time of opening new branches in India. The branch expansion of foreign banks is in consonance with India's commitment to WTO.[50]

The second strategy for the promotion of competition was to partially privatise the nationalised banks, enlisting them in stock exchanges, so that the exchange markets could act as the watch-dog to monitor their performances. But, in the contemporary scenario, private investors were averse to banking scripts since their account books were largely window-dressed, concealing the bad loans. To remove those confusions among private investors, the Committee recommended for reforms

[47]M Narasimham was a member of the Chakravarty Committee.
[48]Consolidated FDI policy effective from May 12th 2015, GOI.
[49] Ibid, p.68
[50]RBI, Master Circular on Branch Authorisation, July 1st 2014.

in banking accounting standards, which also the government accepted. In line with the international standards, income recognition and asset classification norms were introduced in the second phase of reforms in 1998. This has been done for proper positioning and transparency in the published accounts. The policy of income recognition is based on the record of recovery. Income on NPA is not recognised on accrual basis but has to be booked only when it is actually received. Provisioning is required for non-performing assets (NPA). An asset is defined as non-performing if it ceases to generate income for the bank for more than 90 days[51]. With effect from 2005, the NPAs are classified as (i) sub standard assets, (ii) doubtful assets and (iii) loss assets. A provisioning of 25 per cent is to be made on outstanding balances of assets classified as substandard assets. With regard to doubtful assets, 25 per cent provisioning is required for a period up to one year, 40 per cent for a period between one to three years and 100 per cent for more than three years.[52] In 2014, RBI recommended to set up Central Repository of Information on Large Credit (CRILC) to collect and store credit data for dissemination among lenders. The banks were required to provide information on all borrowers having exposure of Rs.50 million and above (fund-based and non-fund based).[53] To take corrective actions, a proposal was made for the establishment of the Joint Lenders Forum (JLF). [54]

The changes in the accounting standards, however, exposed a very high level of non-performing assets, so also a very low capital base, for public-sector banks. Their Gross NPA stood at 23.2 per cent in 1993,[55] which was unacceptable to private investors. Under constant vigil of RBI, it was, however, reduced to 2.29 per cent in

[51]RBI circular on Prudential Norms on Income recognition, asset classification and provisioning pertaining to advances, July 1st 2015.
[52]Ibid, p.22
[53]RBI, Early recognition of Financial Distress, January 30th 2014.
[54]Ibid, p.4
[55]RBI, *Report on currency and finance*,2006-08, p.113

2009 but rose again to 4.1 per cent in 2014, and 7.3 per cent in 2015.[56] Since those assets were largely written off, the capital bases of those banks severely weakened. In such a situation, the mobilisation of funds through stock exchanges was surely a route. For the loss-making banks, which private investors disliked, accommodation was given in the union budget. The total contribution of the government to nationalised banks was Rs.20,046 crore by March 1998.[57] Further privatisation was recommended in the second Narasimham Committee report, submitted in 1998. It proposed that the RBI/Government should reduce their minimum stake from 51 per cent to 33 per cent[58], so that private control over bank management would be augmented, and greater efficiency would follow. According to the Indradhanush Plan that the Government of India adopted in 2015, the PSBs would require an extra capital of Rs 1,80,000 crore by 2019 to meet to Basel III norms. Out of this amount, the government would infuse Rs.70,000 crore in four instalments and the rest should come up from the market.[59]

The third leg of the strategy for competition was to deregulate the rate of interest so that the pricing mechanism operated. We have already noted that the pre-reform era was characterised by the cross subsidisation of interests whereby the market was fragmented, and inefficiency crippled proper allocation of fund. A series of corrective measures were adapted to this end. In the first place, the RBI also abolished the minimum lending rate so that the banks could fix their own prime lending rate. The RBI prescribed only the maximum deposit rate of interest for a period less than a year[60]. Also, the Prime Lending Rate (PLR) was deregulated in a

[56] Economic Times, 29 June 2016
[57] RBI, *Report on currency and finance*,2006-08, p.111
[58] Report of Committee on Banking Sector Reforms, p.53
[59] Ministry of Finance, Indradhanush Plan to revamp Public Sector Banks, 2015, p.8
[60] Rangarajan, Financial Sector, p.5

phased manner. In 1994, it was deregulated for loans above Rs.2 Lakhs and was converted into Benchmark Prime Lending Rate (BPLR) in 2001.[61] From 31 March 2016 the BPLR has been changed to Marginal Cost Lending Rate (MCLR). The MLCR comprises of (a) marginal cost of funds (which includes the marginal cost of borrowing and return on net worth), (b) negative carry on account of CRR (i.e. nil return on CRR held by banks), (c) operating costs and (d) tenor premium (i.e. a higher rate that a bank may charge for longer tenor loans). It should be noted that, unlike the previous BPLR and PLR, the changes in the repo rate are immediately reflected in the MCLR. In fact, the MCLR makes the banks competitive in the commercial paper market. It is a move towards the international standards, reduces the cost of borrowing and ensures that the lending rates are more dynamic.[62] Side by side the lending rate, the deposit rates of interest have also been deregulated. The short-term deposit rates were totally liberated in 1992, save an overall maximum rate for term deposits. The term deposit rate was fully liberalised in 1997. As per the RBI directive on October 25, 2011 the SCBs are free to determine their saving rate provided they meet two conditions, (1) each bank offers a uniform rate of interest on savings bank deposit up to Rs 1 lakh; and (2) a bank may provide differential rates of interest from amount over Rs 1 lakh subject to the condition that there is no discrimination at a given point of time and at a specific branch.[63]

The rates of interest on government securities have also been raised and many money market instruments have been introduced enabling the corporate sector (including banks) to get short-run accommodation there from.

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[61] RBI, Evolution of BPLR,20 October 2009, pp.5-9

[62] RBI, Master Direction-Interest Rates on Advances, March 29th 2016

[63] RBI, Master Circular-Deregulation of Savings Bank Deposits Interest Rate-Guidelines, October 25th 2011

While infusing competition in banking, the RBI has been cautious about the evils of excess competition. It is reflected in the practice of Asset Liability Management (ALM), which has been followed in a number of countries after the financial crisis of East Asia in 1997. The ALM provides a 'comprehensive dynamic framework for measuring, monitoring and managing liquidity, interest rates, foreign exchange and equity and commodity risk of a bank that needs to be closely integrated with banks' business strategy'.[64] The RBI is also empowered with a supervisory role in 1994 by way of amending the Banking Regulation Act 1949. The basic objective of supervision is to assess the solvency, liquidity and operational health of banks. The inspection is based on the CAMELS (Capital Adequacy, Asset Quality, Management, Earnings, Liquidity System and Controls) which are a modified version of the international CAMEL for domestic banks. For the foreign banks, however, performance is judged on CALCS (Capital Adequacy, Asset Quality, Liquidity Compliance and Systems). Also, a new framework of accountability has been introduced to ensure proper internal and external audit.[65] The performance of the PSBs is now measured by Key Performance Indicators (KPI), which is linked to the bonus paid to the MD/CEO of banks.[66]

Along with the infusion of competition in the banking industry, the Narasimham Committee recommended for removal of state interventions that crippled the financial health of commercial banks. An important recommendation in this regard was to minimise the priority sector lending. The committee recommended for the reduction of this lending from 40 per cent to 10 per cent, and also to reduce the number of activities belonging to this sector. The recommendation has not been fully

[64]RBI, circular on Asset Liability Management, February 10th 1999.
[65]RBI, *Report on currency and finance*,2006-08,pp.116-117
[66]Indradhanush, Ministry of Finance, GOI, 2014, p.6

adhered to.[67] The definition of priority sector has, however, been changed from time to time. As per the RBI circular on 1 July 2015, it includes (i) agriculture, (ii) micro, small and medium enterprises, (iii) export credit, (iv) education, (v) housing, (vi) social infrastructure and (vii) renewable energy and others.[68]

As to the pre-emption ratios, the incremental CRR of 10 per cent was totally removed, and the CRR has been reduced in phases to 4 per cent in 2016.[69] The SLR has also been brought down in phases to 21 per cent.[70] These measures have definitely increased the lending capacity of the banks, and hence, their efficiency. We emphasise that higher return from government securities has reduced banks' burden of provisioning SLR by government securities. Also, the use of the Liquidity Adjustment Facility (LAF) since 2000 as an anti-inflationary measure, rather than the use of CRR, has reduced the state intervention in commercial banking.

Section IV: Various Concepts of Efficiency.

We thus find that, for the sake of gain in efficiency among commercial banks, India adopted banking sector reforms in two phases, once in 1991 and then in 1998. But a pertinent question at this stage is: Did those successive reforms inculcate efficiency in financial intermediations? The present dissertation seeks to answer this question. It deals only with commercial banking since it represents the major segment of financial intermediaries in India. To deliberate on this question, however, we should first clarify the concept of efficiency.[71]

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[67] Note that the Priority sector lending till date is 40%, see RBI Master Circular-Priority Sector Lending-Targets and Classification, July 2015.
[68] RBI, Master Circular-Priority Sector Lending- Targets and Classification, July 2015.
[69] RBI, www.rbi.org.in, Last checked on 13th September 2016
[70] ibid
[71] For the concept of efficiency, especially in the macro sense of the term, see Prabhat Patanik, 'On the concept of efficiency', EPW Vol.32 (43).

The concept of efficiency broadly refers to the minimisation of the wastage of resources, which are scarce in a society.[72] The problem of scarcity is tackled by producing on the production frontier, which represents the maximum output attainable from a given input vector.[73] Since the output levels on the production frontier are obtained by combining various inputs on the basis of the most efficient technology, they represent technically efficient points of production. Technical efficiency is, therefore, synonymous with productive efficiency. Under this definition, technical inefficiency of a production point is measured by its distance from the production frontier

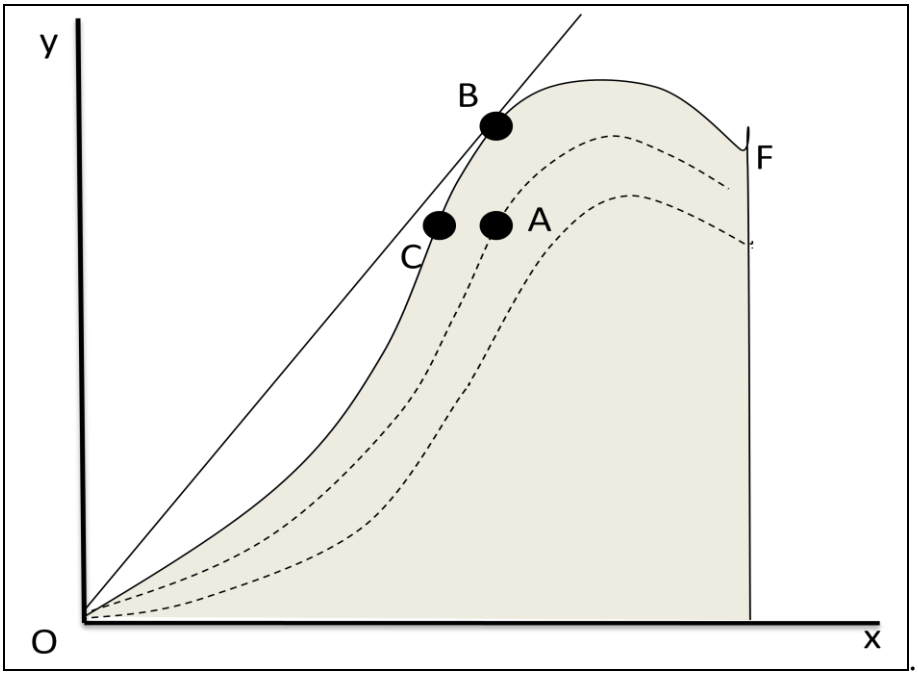

Fig 1.1. Production Frontier and Technical Efficiency

[72]Patnaik describes that 'if with the resource endowments available in an economy in any given situation (in the sense of being offered by their owners), the output obtainable is not in a vectorwise sense larger than what is produced, then the situation is one of "efficient" production.' 'On the concept of efficiency', p. 2807

[73]Coelli et al, *An Introduction to Efficiency and Productivity Analysis*, p. 3

For a firm with a single input (x) and a single output (y), the production frontier is represented by the locus OF in Figure 1.1. The points *B* and *C* which lie on the frontier are technically efficient points of production whereas *A* which is inside the production frontier is technically inefficient. Any point beyond the frontier is not technologically feasible at the given point in time.

Technical efficiency can be calculated without any knowledge of input/output prices. The imposition of a behavioural constraint of profit, cost and revenue transforms the production frontier into analogous concept of profit frontier, cost frontier and revenue frontier. A cost frontier represents the minimum expenditure to produce an output. A producer operating on the cost frontier is considered to be cost efficient. The revenue frontier represents the maximum revenue obtained from a given bundle of inputs, and a producer who operates on the frontier is considered revenue efficient. The profit frontier represents the maximum profit that is gained from a given production activity, and we may define likewise the profit efficiency. [74]

The overall efficiency of a firm (often referred to as the economic efficiency as well) is often denoted by concomitant occurrence of technical and allocative efficiency. The latter type of efficiency is described taking into account some behavioural constraints, such as cost minimisation, revenue maximization, or profit maximization. From the perspective of the economy, however, the allocative efficiency is defined as the allocation of resources that maximises the social surplus. Samuelson defines allocative efficiency as 'when no possible reorganisation of production can make any one better off without making someone else worse off.'[75] Remaining in the realm of microeconomics, we note that the economic efficiency

[74]Kumbhakar and Lovell, *Stochastic Frontier Analysis*, p.17
[75]Samuelson and Nordhaus, *Economics*, p 158

(EE) is decomposed into its constituent parts of technical efficiency (TE) and input- or output-oriented allocative efficiency (AE).[76]

$$\text{OE} = \text{TE x AE} \quad (1.8)$$

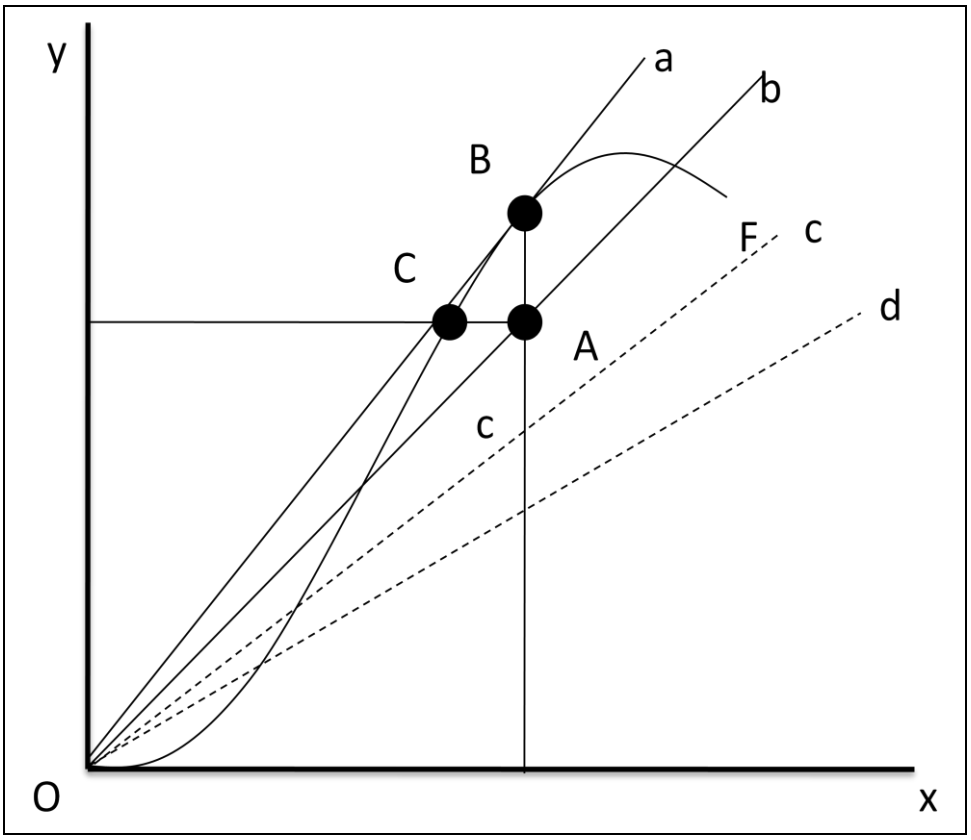

Fig 1.2. Scale efficiency

Figure 1.2 explains the concept of scale efficiency. It underlines that a point may be technically efficient, but not scale efficient. The line OF in this figure is same as that in Figure 1.1 so that all points on it like B and C are technically efficient. Note that, in the long run, each point on OF represents a production level corresponding to a given plant size. We now superimpose in the figure a number of rays such as Oa,

[76]For details of such decomposition, see, for example, Kumbhakar, *Stochastic Frontier Analysis*(2000), Battese and Coellie, 'Frontier Production Functions, Technical Efficiency Panel Data with Application to paddy Farmers in India' and 'A Model of Technical Inefficiency Effects in a Stochastic Frontier Production Function for Panel Data' (1992 and 1995), Kopp and Diewert 'The Decomposition of Frontier Cost Function Deviations into Measures of Technical and Allocative Efficiency' (1982), Greene 'The Econometric Approach to Efficiency Analysis' (1993).

Ob, Oc and Od, representing different output-input ratios (y/x). Now, the ratio y/x is maximised at B (i.e. the highest efficiency is reached in terms of maximum output for a given level of input, or, minimum input for a given level of output). In other words, the firm should choose the plant size corresponding to B, where the ray Oa is tangent with the production frontier OF. It should be noted that though the points C and B are both technically efficient points of production, they are not scale efficient. Only the production at point B is both technically and scale-wise efficient. Thus a firm can increase its productivity and move to a point where it is operating at an optimal scale. The concept of scale efficiency can be alternately represented in the following diagram.

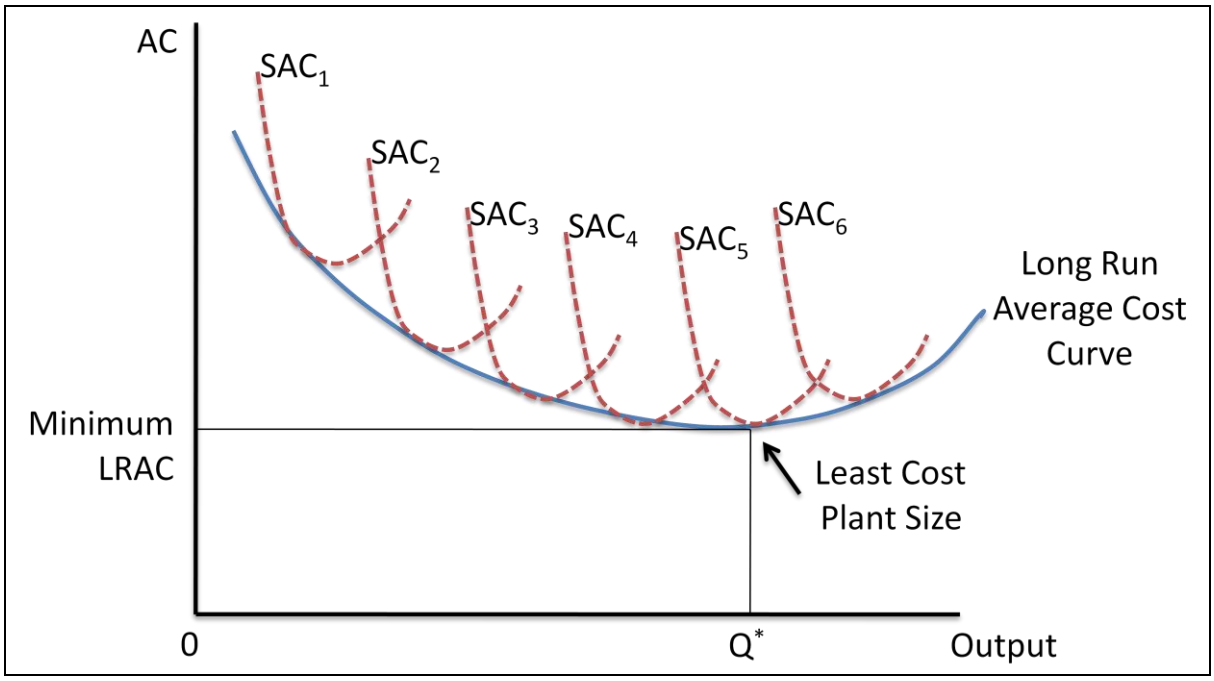

Fig 1.3. Scale efficiency (Least cost optimal plant size) with the help of Long run average cost curve (LRAC)

We know that the long run average cost (LRAC) curve envelopes the short run cost average curves (SAC), each of which represents a given plant size. A shift from one short-run average cost curve to another implies a change in the plant size of

production. The lowest point on the LAC curve coincides with the optimal plant size. Expansion beyond this point leads to increase in the average cost as diseconomies of scale sets in. Hence, the movements from SAC_1 to SAC_2, SAC_3 etc through SAC_5 represent gain in scale efficiency.

The idea of scope economies was introduced by Panzar and Willig in 1977,[77] but popularised by Baumal, Penzar and Willig in 1982.[78] Considering that two outputs q_1 and q_2 are produced by a firm, they define the scope economies as

$$S_{co} = \frac{\left[C\left(q_1, q_2^{min}\right) + C\left(q_1^{min}, q_2\right) - C(q_1 q_2)\right]}{C(q_1, q_2)} \qquad (1.8)$$

where q_i^{min} is the smallest value of q_i, approaching to zero. If $S_{co} > 0$, we infer that it is more profitable to produce q_1 and q_2 separately. Otherwise, the firm should go for their joint production.

The three-dimensional Figure 4 is an adaptation of Baumols scope efficiency where a firm is producing two commodities, q_1 and q_2. The curve CTC` is a U shaped cost curve. The lowest cost of production for the firm is to produce at point U on the ray R where the firm is producing both q_1 and q_2 rather than producing single commodities at point A (q_2) and B (q_1).

[77] Panzar and Willig, 'Economies of Scale in Multi-Output Production'.
[78] Baumol et al., *Contestetable Markets and the Theory of Industry Structure*, pp. 73-75. For an analysis of this concept, see Leonard Waverman, 'U.S. International competition.' In R.W.Crandall and K. Flamm, *Changing rules: Technological change, International competition, and Regulation in telecommunication*', pp. 62-82, especially 78-80.

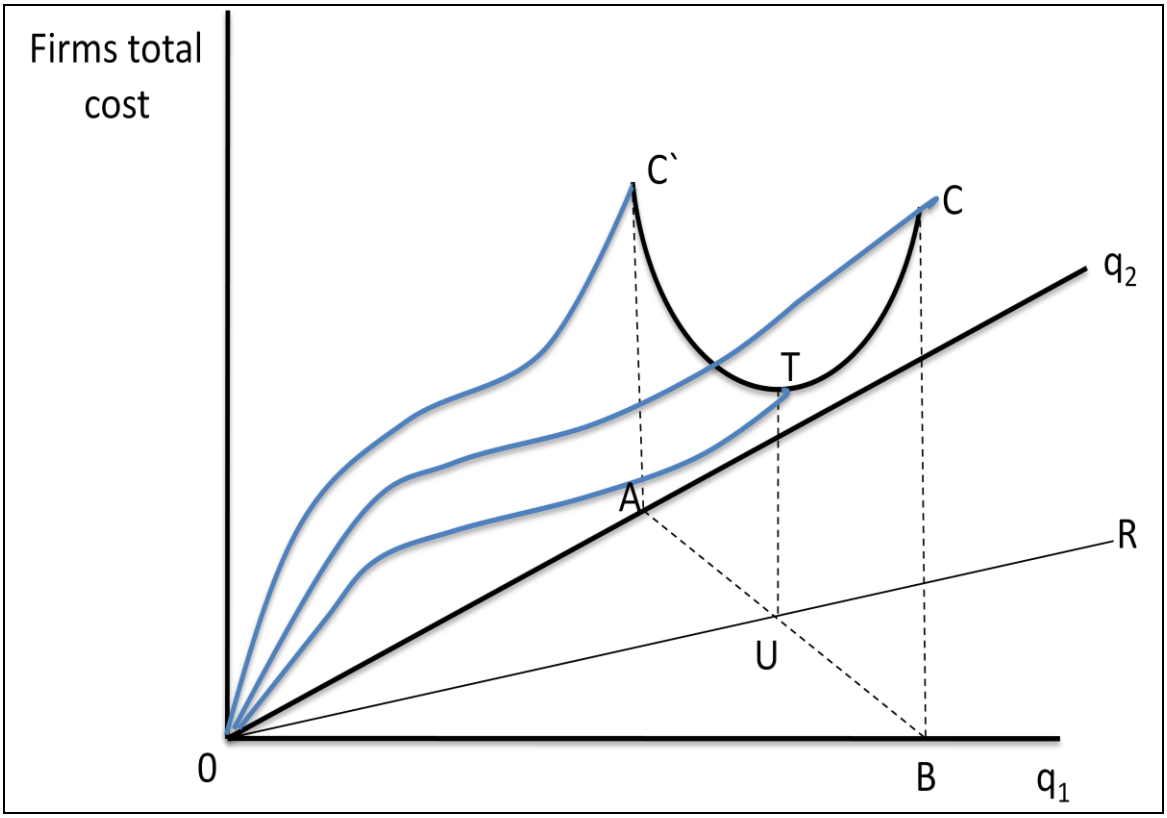

Fig 1.4. Scope efficiency of firms producing two commodities[79]

Though most of the studies on efficiency and productivity concentrate on technical and allocative efficiency, Harvey Leibenstein introduced the concept X-efficiency in 1966. On the basis of various empirical studies, he notes that the distortion in productivity as explained by allocative inefficiency is very negligible. The welfare losses due to allocative inefficiency were less as 1/10th of 1 percent[80]. Leibenstein points out that the traditional theory, based on assumption of profit maximization or cost minimization, holds good so long as there is complete information. But there are many unforeseen distortions in the reality that are not deliberated in the conventional analysis. Leibenstein conceptualises them under a term X-efficiency, which is the culmination of a different line of thought on the

[79]Baumol, 'Contestable Markets', p.10
[80] Leibenstein, 'Allocative Efficiency Vs X-Efficiency' p.397

question of efficiency. The next chapter discusses the concept at length. We only note here that given that the X-efficiency exists, the overall efficiency is decomposed as

$$OE = TExAExXE \qquad (9)$$

Section V: Research Objective, Questions and Plan of study

India had thus experienced a serious efficiency crisis in the financial sector during 1969-1991, which had its cascading effects on her overall economic performance. We have also deliberated how, through various financial sector reforms, our policy-makers sought to address the underlying problems. But the question that arises in this context is whether those reformative measures have enhanced the efficiency of the country's commercial banking. The central objective of this dissertation is to find out a plausible answer for this question, especially in the field of the X-efficiency. In particular, there are four objectives in this study. Those are:

(i) To discuss the concept of X-efficiency and its genesis in the literature;

(ii) To calibrate an appropriate methodology for the measurement of X-efficiency among commercial banks in India;

(iii) To study the impacts of the financial sector reforms on the X-efficiency of the banking sector during 1991-2012 as a whole, and during the period of the second-generation reforms, 1998-2012;

(iv) To assess the effect of ownership on the bank performance in terms of X-efficiency.

Thus, the research questions that this dissertation seeks to answer are as follows:

(i) What is the genesis of the concept of X-efficiency?

(ii) What are various methods of measuring X-efficiency and which one is the most appropriate for India's commercial banks?

(iii) How had the financial sector reforms of 1991 affected the X-efficiency of the Indian commercial banks?

(iv) Were the second-generation reforms better than the first-generation reforms from the viewpoint of gain in X-efficiency?

(v) Was banks' ownership an important variable in the question of their X-efficiency?

There are five chapters in this dissertation in addition to the present one. The second chapter deals with the genesis of the concept of X-efficiency. Though it was formally advocated by H. Leibenstein in 1966, it has its origin in Hick's Quite Life of 1935 and in Bain's Structure-Conduct-Performance paradigm of 1959, which are also discussed in this chapter. Those theories bring into fore the subjective factors that influence the efficiency of the firm or an organisation. Leibenstein's X-efficiency theory is, indeed, based on such subjective factors.

The third chapter is on the review of literature. It discusses in a nutshell various studies pertaining to efficiency and its measurement. In addition to the X-efficiency, the central theme of this dissertation, the chapter deals also with the technical efficiency since there are some common methodologies used in these fields. In particular, there are two broad methods of efficiency measurement that are used in such studies. One is the Data Envelopment Analysis and the other is

the Stochastic Frontier Analysis. We review them in brief separately for Indian experiences and experiences in other countries.

The methodology and the underlying data set for this dissertation are the subject matters of the fourth chapter. Recollecting the available methodology in the field from the previous chapter, we choose here the most appropriate one for our study, and calibrate it for our use. The chosen methodology guides us about the type of data that are required to compute it. While selecting the period of the data set, we are careful about the basic objectives of our dissertations, especially (a) it should properly account for the effects of India's financial sector reforms; and (b) the effects of the first-generation and second-generation reforms can be segregated. For the former, we consider the data set from 1994 so that the first-generation reforms, started in 1991, began to bear fruits. To tackle the second issue, we take into account two separate data sets, one for 1994-2012 and the other for 2000-2012.

The fifth chapter reports and analyses the empirical findings. Results from two alternative methods, viz. the generalised least square method (GLS) and the maximum likelihood method (MLE), are presented, and, on the basis of its merits, the second set of results are analysed. Keeping in view the objectives of the dissertation, the chapter reports the results for two periods, 1994-2012 and 2000-2012. Those results are analysed categorising the banks in three groups, public sector banks, private domestic banks and private foreign banks.

The sixth chapter, however, summarises by way of conclusion the major findings of all previous chapters.

Section VI: Conclusion

This chapter thus deliberates on three major issues in the literature. One, there is a close link between the financial sector development and economic progress. The relationship is typically of two-way type so that one re-imposes the other. Moreover, since the former is the necessary condition for the latter (and vice versa), the economic progress gets frustrated in the absence of, or the stagnation in the financial sector. Two, Indian commercial banking suffered from acute inefficiencies during the phase of financial repression, 1969-91, on account of various administrative constraints. Acknowledging the prevalence of inefficiencies amongst them, as also their outcomes on the country's economic progress, Indian policy-makers adopted a series of financial sector reforms since 1991. These two findings are, however, the main motivation of this dissertation, namely, to study the gain of efficiency among India's commercial banking in the wake of those economic reforms. But the word 'efficiency' is a wide-ranged concept accommodating various terms such as technical efficiency, allocative efficiency and X-efficiency. This study, however, takes up the concept of X-efficiency for examination. Our review of literature would show that there are many studies on the efficiency of Indian Banks. These works are more concentrated towards the measurement of technical efficiency of the banks. This thesis concentrates only on the X-efficiency of the Indian banks post reform for a period of 1994 to 2012.