

## Financial Sector Reform for Stimulating Investment and Economic Growth – The Indian Experience

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It is well recognized that underdeveloped financial markets hurt investment and growth<sup>1</sup>. Financial sector reforms are essentially targeted to reduce the cost of accumulating capital. Typically a firm has to rely on various sources for obtaining funds for investment. These sources are broadly classified into debt and equity. While “debt” refers to the resources generated by loans from the banks and through the issuance of various debt instruments, “equity” refers essentially to financing through stock markets and various forms of investment partnerships. Financial sector reforms usually address the problem of financing investment, by effectively reducing the cost of borrowing and making it easier for the firms to raise capital from the equity market. Financial markets in the developing world tend to be highly imperfect with significant gap between the borrowing and lending rates, reflecting moral hazard or adverse selection type problems. Underdeveloped capital markets in terms of “thin” equity market, lack of available financial instruments and legal complexities also have adverse impacts on decision to invest. Reforms are essentially targeted to build up relatively “perfect” financial markets.

This paper does not intend to start with a full theoretical and empirical survey of the existing literature on the topic. The references cited in the paper will serve that purpose. Instead what we attempt here is an analysis of mechanisms through which financial sector reforms affect investment and growth and then follow it up with some discussions on the post-liberalization investment scenario and its implication for growth in India.

The paper proceeds as follows.

Section I briefly overviews the various financial reforms that had been taken place in India during the 1990s. Section II highlights the determinants of investment in India. Section III introduces the demand aspect of the problem. Section IV talks about the banking sector, real rates of interest and related issues. Section V explains the relationship between investment and growth in India. Section VI reflects on investment and growth in the informal sector. Section VII provides the policy suggestions and the last section concludes. The end of the paper contains an appendix, which gives a detailed account of institutional problems related to infrastructure investment in India.

### Section I: Financial Sector Reforms in India

India, in the last decade of 20<sup>th</sup> century, had undergone wide-ranging economic reforms that involved major shifts in her developing strategies. Previously the development strategies were designed to establish public sector dominated industrial structure with direct discretionary controls on private investment. Government, in order to sustain such a strategic platform for economic development, had no other way to undertake large developmental expenditures that required long-term finance for long-gestation projects. The provision of fiscal accommodation through ad hoc treasury bills led to high levels of monetization of fiscal deficit during the major part of the eighties. In order to check the monetary effects of such large-scale monetization, the cash reserve ratio (CRR) was increased frequently as an instrument to control liquidity. There

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was strong government control over all financial institutions, realized through directed credit programmes, pre-emption of funds through SLR and CRR, controls over pricing of financial assets, barriers to entry into different sectors, and restrictions on transactions and flows. Also, there was no secondary market of Government securities. Both the money and capital markets were underdeveloped. The foreign exchange market was also extremely thin, mainly due to stringent restrictions laid by Foreign Exchange Regulation Act (FERA) and the basket-linked exchange rate. As India plunged into severe macro-economic crisis in 1990, unlike any other in the past, the authorities were forced to think of wide ranging reforms. The foreign currency reserves of the country dropped down to \$ 1 billion, which was just enough to finance only two weeks of imports. The inflation rate climbed to a peak of 17 % by August 1991. The ratio of the fiscal deficit of the Central Government to GDP had reached almost a double -digit level, and the current account deficit rose to nearly 3 % of GDP. The time was really alarming, so the planners had to think of immediate implementation of successful and appropriate reformatory measures, especially in the financial sector. As a result the last decade of the 20<sup>th</sup> century brought about a host of financial reforms in India. Let us just glance through the overall picture of reform measures taken up in the early 1990s.

Banking sector reforms:

- As prudential measures, international best practices and norms on risk-weighted capital adequacy requirement as well as accounting, income recognition, provisioning and exposure, were introduced. Also, emphasis was given to set up advanced course of actions for risk management to create a better environment for investment.
- In order to upgrade competition, government ownership in public sector banks was reduced and they were allowed to raise capital from the equity market up to 49% of paid-up capital. Greater participation of private ownership in the financial sector were promoted as well as transparent norms were taken up to enable foreign and joint-venture banks and insurance companies to partake Indian finance and insurance markets. Likewise, Foreign Direct Investment (FDI) as well as portfolio investment in the financial sector was permitted.
- The administered interest rates were set free with a handful of exceptions and there were sharp reductions in pre-emption through reserve requirement. Pure inter-bank call money market was introduced with improved payment cum settlement mechanism. These were done to enhance the role of market forces.
- A number of institutional instruments were also set up to fortify the initiation of reforms. Some of them were: Lok Adalats (people's courts), debt recovery tribunals, asset reconstruction companies, settlement advisory committees, corporate debt restructuring mechanism, etc. apart from these some legal measures were introduced to ensure creditor rights, like the promulgation of Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI). This was followed by setting up of the Credit Information Bureau so as to keep the investors updated with necessary information. At the same time, Clearing Corporation of India Limited (CCIL) was introduced to act as central counter party for facilitating payments and settlement system relating to fixed income securities and money market instruments.
- The Board for Financial Supervision was established as the apex supervisory authority for commercial banks, financial institutions and non-banking financial companies
- A number of technical measures were undertaken in order to speed up the process of trading advanced technologies for communication, like INFINET were introduced. Also, to enable virtual interaction, Negotiated Dealing System (NDS) in government securities and Real Time Gross Settlement (RTGS) System were set up.

Debt market reforms:

- First, there were some institutional Measures such as, auction system for the sale of GOI medium and long-term securities as well as 'Repurchase Agreement' (Repos) was introduced. Primary Dealers (PD) were allowed to play market makers in the government securities market. 14 day, 91 day, 182 day and 364 day maturities treasury bills were launched. Delivery versus Payment (DvP) settlement system, Market Stabilization Scheme (MSS), Liquidity Adjustment Facility (LAF) and new instruments like Floating

Rate bonds, Capital Indexed bonds, Zero Coupon Bonds were introduced for ensuring lucidity in the trading of government securities.

- It was the first time that Foreign Institutional Investors (FIIs) were allowed to invest in government securities subject to certain limits.

#### Reforms in the Foreign Exchange Market

- Some specific changes were done in the exchange rate regime. Reformatory measures allowed the exchange rate regime from a single currency fixed-exchange rate system to fixing the value of rupee against a basket of currencies and further to market-determined floating exchange rate regime.
- Foreign Exchange Regulation Act (FERA), 1973 was replaced by the market friendly Foreign Exchange Management Act, 1999.
- Authorized dealers were permitted to set off trading positions as well as borrow and invest in overseas market. Also, the Banks were permitted to fix interest rates on non-resident deposits subject to the ratifications issued by RBI. Rupee-foreign currency swap markets were encouraged and participants in the foreign exchange market (including exporters, FIIs and the Indians who invest abroad) were allowed to avail forward cover and enter into swap transactions without any limit, but subject to genuine underlying exposure.

These measures and the subsequent ones were attempted to streamline the financial markets so as to provide resources for fresh investments. So reforms in the financial sector will have some obvious effects on the investment scenario of the country. Essentially the theory of financial sector reforms is often linked with the cost of capital. The simple model developed in the appendix captures this idea. This paper, among other things, intends to discuss whether such “supply” side measures are good enough to raise the long-term investment-GDP ratio by substantive margin and sustain a high growth process.

## Section II: Financial Reforms and Investment

Level of investment crucially depends upon the lending rates offered by the banks and the behavior of the stock market, provided that financing of investment is the real issue. We shall examine how far this assertion holds for post-reform India. The first experiment is a statistical exercise relating stock market with rate of investment and the second is a discussion on the relationship between investment and interest rate. Therefore, it is necessary to check whether growth in equity market or capitalized value of the firms at least correlates positively with the rate of investment. Unfortunately our simple statistical exercise does not confirm this claim either. Let us consider Table-2.1. Table-2.1 exhibits the growth of the equity market or the capitalized value of firms for the post-liberalization era (1991-92 to 2001-2002) and the corresponding data set on the ratio of private investment to GDP. We have taken the BSE index (annual average basis) for our purpose. After calculating the correlation between the rate of private investment and the total value of non-government capital issues, we get a surprising result. The correlation between these two variables turns out to be  $-0.57$ . This means it will not be very effective to trace the movement of private investment in the light of share market. Reduced rate of interest definitely improves corporate profit by reducing the expenses related to the working capital and the interest burden. While business houses always support a decline in interest rate, it is not clear whether additional profits so generated are directed towards long-term investment.

Table-2 Market capitalization and private investment to GDP ratio in the post-liberalization era

YEAR	Rate of private investment	Total value of Capital Issues By Non-Government Public Limited Companies (in Rs. Corres)
1991-92	16	6193.1
1992-93	15	19803.4
1993-94	15	19330.3

1994-95	14	26416.7
1995-96	18	16074.7
1996-97p	17	10409.5
1997-98p	17	3138.3
1998-99p	16	5013.1
1999-2000p	16	5153.3
2000-2001p	16	4889.8
2001-2002p	17	5692.4

Source: Handbook of Statistics on Indian Economy, Reserve Bank Of India, 2001-2002

This is very similar to the issue of exchange depreciation as desired by export lobby. While it is not at all clear whether depreciation promotes exports, it is certain that such a move will expand exporters' profits. One must not take the issue of the decline in the lending rate as a very serious policy. Narendra Jhaveri's annotation in EPW (2003) elicits some important facets of the issue. Jhaveri explores various aspects of the extent and off take of non-food credit in the banking sector. According to him demand for such non-food bank credit mainly comes from medium and small enterprises. But these small enterprises often fail to gain bankers' faith since they hardly have any linkage with the big enterprises. This simply means that small enterprises lack in potential viability. Jhaveri argues that this is a result of changing ambience from pre-reform to post-reform that has inflicted immense social and political costs on the small enterprises to become potentially viable. Banks are now playing in safe modes by substituting industrial debt by consumer debt and putting funds in government securities. Such a situation will gradually peter out high quality borrowers. Moreover, consumer debts being disposed off for goods and services are neither growth promoting nor are capable of creating employment opportunities or adding domestic value substantially.

One intriguing issue in this context seems to be whether Indian firms are finance constrained. Bagchi, Das and Moitra (2002) explore this in great detail. Using the firm level data for 600 listed firms, they classify three groups in terms of dividend pay-out ratios. In the literature on investment in imperfect credit market, a standard practice is to identify "low-information cost" firm as the low dividend pay-out firms. What Bagchi, Das and Moitra (2002) demonstrate is that the firms with low and high dividend pay-out ratio are not finance constrained while as the middle ones are. An interesting observation suggests that even if market value of firms widely fluctuates among the three groups, the investment/fixed capital ratio is remarkably stable around 22%. In a detailed exercise on factors determining firm level investment and growth conducted under a IDBI sponsored project at the Centre for studies in Social sciences, Calcutta, interesting results come out. Interest rate does not explain investment, cash flow does. Perception about future demand turns out to be important. A small percentage of external financing comes through the equity market. The criterion for choice of investment projects is often guided by minimum pay-back period rule and not necessarily by the NPV method.

### Section III: Demand side of the problem.

The positive effect of the financial sector reform is likely to be reflected on the cost of capital. However, a part of the problem of investment in India has to do with how the private sector perceives the long-term prospects of investment. It is the willingness to invest which matters in a big way. Let us run through the basic information we have regarding the rate of public and private investment over the last twenty years or so.

As Table-3.1 shows, the average rate of public investment was around 10% in the pre-reform period (1980-1990) and it has dropped to around 7.5% in the post 90s, a significant drop indeed. Private investment shows, an increase from an average of 12% to 16%, thus increasing the overall rate of investment from an average of 22% to 23.5%. Some observations regarding the table are in order.

First, the rate of investment is nowhere near a level of 30%, a rate, which boosted economic growth in the fast-growing Southeast Asian countries. Economic reforms have increased the rate of investment but marginally.

Second, since mid 80s, the period, which saw the initiation of a phase of deregulation, public investment started faltering and never reached more than 10%. This also marks the beginning of

an increase in the rate of private investment. In fact a rise of 4% on average is moderate but definitely is a change for the better.

Third, it will not be correct to relate the higher rate of private investment with lower rate of public investment and argue that there is some sort of “crowding out effect” in operation. It is as if a higher rate of public investment did discourage private investment earlier and as public investment faltered, private investment picked up. This is untenable because time and again it has been asserted that lack of infrastructural facilities, such as, roads and telecommunication network, power etc. do hamper private investment in big way. The huge demand for public investment in infrastructure inevitably admits the complementarity between public investment and private investment.

Fourth, the decline in the rate of public investment seems to be consistent with the pressure of reducing fiscal deficit. If one look at Table-3.3 (a) and Table-3.3 (b), it is clear that the government could not contain the fiscal deficit and banks have started to exhibit a very high security/deposit ratio much above than is warranted by minimum SLR.

Fifth, although it is difficult to predict the exact relationship between public and private investment, one could make some conjecture with the facts in hand.

- (a) The increase in the rate of private investment is a combination of the policies adopted in mid 80s as well as in the 90s. In the early phase of liberalization, import of capital goods and technology was made easier and less expensive. There is ample evidence that during the period new technology collaboration and new joint ventures flooded the markets. (Marjit and Singh (1995)) This did improve the prospect for fresh investment.
- (b) In the 90s, the early policies continued but we also observed lowering of interest rate, in phases. Stock market expanded or at least demonstrated resilience despite major scams. This has helped private investment to pick up even if marginally.

But (a) and (b) only reflect marginal improvements since these are essentially supply side factors cutting down the cost of capital both in terms of easier access to foreign resources, technology and capital and domestic resources. The demand side of the problem has been neglected. As public investment stagnated and declined, one could not expect infrastructural investment to pick up. If increased properly this would have a substantial impact on the rate of private investment. So whatever increase we experience now is partially blocked by the lack of public initiative and what we observe is the small net positive effect after accounting for the negative impact of scarce infrastructural facilities.

Table-3.1 Rate of private and public investment in India for the period 1980-2001

YEAR	% OF Private Investment to GDP	% OF Public Investment to GDP
Pre-liberalization		
1980	11	9
1981	11	9
1982	11	9
1983	10	11
1984	10	10
1985	11	11
1986	11	12
1987	13	11
1988	14	10
1989	15	10
1990	14	10
Post-liberalization		
1991	16	9
1992	15	8

1993	15	8
1994	14	9
1995	18	8
1996	17	7
1997	17	6
1998	16	7
1999	16	7
2000	16	7
2001	17	7

Source: Handbook of Statistics on Indian Economy, Reserve Bank Of India, 2001-2002

Table-3.2 Gross fixed capital formation as a percentage of GDP in India for the period 1980-2001

Pre-liberalization era	Gross fixed capital formation to GDP	Post-liberalization era	Gross fixed capital formation to GDP
1969-70	19.35	1991-92	21.53
1970-71	18.50	1992-93	21.72
1971-72	19.05	1993-94	21.45
1972-73	20.10	1994-95	22.32
1973-74	18.86	1995-96	24.73
1974-75	18.06	1996-97	23.37
1975-76	18.38	1997-98	22.85
1976-77	20.31	1998-99	23.43
1977-78	20.87	1999-00	23.91
1978-79	19.66	2000-01	23.88
1979-80	19.92	2001-02	23.38
1980-81	20.65	--	--
1981-82	20.88	--	--
1982-83	20.69	--	--
1983-84	20.25	--	--
1984-85	20.53	--	--
1985-86	20.62	--	--
1986-87	20.75	--	--
1987-88	21.73	--	--
1988-89	21.38	--	--
1989-90	21.52	--	--
1990-91	22.10	--	--

Source: Handbook of Statistics on Indian Economy, Reserve Bank Of India, 2001-2002

Table- 3.3(a) Gross fiscal deficit to GDP ratio and Govt.-Security/Deposit ratio of the commercial banks in the pre and post liberalization period

YEAR	Savings less investment to GDP ratio	Gross fiscal deficit to GDP ratio	Govt. Sec. to total deposit of the commercial banks
Pre-liberalization			
1985 -86	3.77	8.76	22.20
1986 -87	4.30	9.47	24.19
1987 -88	6.48	8.56	25.84
1988 -89	5.13	8.17	25.39
1989 -90	6.89	8.13	24.51
1990 -91	8.08	8.74	25.97
1991 -92	7.71	6.166	26.31
Post-liberalization			
1992 -93	5.50	5.97	27.22
1993 -94	9.78	7.71	32.05
1994 -95	9.38	6.29	30.42
1995 -96	4.70	5.61	30.48
1996 -97	7.45	5.37	31.43
1997 -98	6.39	6.40	31.24
1998 -99	8.41	7.09	31.26
1999 -00	9.23	5.96	33.06
2000 -01	10.56	6.27	34.07
2001 -02	11.48	6.81	36.50
2002 -03		6.49	38.94

Note: All the figures are in percentage.

Source: Banking Statistics, Reserve Bank Of India; National Account Statistics (new series), CSO.

Table- 3.3(b) Monthly analysis of the ratio of Government Security to Total Deposit of Commercial Banks in India for the year 2003

MONTHS	Total deposit *	Government security **	Govt. Security to total deposit ratio ^
JANUARY	1277838	512531	40.11
FEBRUARY	1278435	517522	40.48
MARCH	1280853	523417	40.86
APRIL	1320862	552626	41.84
MAY	1328582	546759	41.15
JUNE	1343175	556575	41.44
JULY	1349972	580190	42.98
AUGUST	1368502	600152	43.85
SEPTEMBER	1377333	602922	43.78

Note: \*, \*\* are in Rs. Crore and ^ is in percentage.

Source: Banking Statistics, Reserve Bank of India

#### Section IV: Some aspects of Banking sector Reforms – The Case of Public Sector Banks.

Two issues that keep coming back to political and popular forum are relatively high borrowing costs of the firms and relatively low deposit rates in the banks for customers. Relatively high prime lending rates may not affect long term investment to a large extent as has been argued earlier. The question is how one justifies high lending rates when rates all over have come down. We have tried to construct two series of real lending rates (RLR) and real deposit rates (RBR) by taking CPI as the proper measure of the inflation rate. I am aware of the fact that one could argue that WPI is a better deflator to measure the real lending rate. But usually CPI records higher increase than WPI. Therefore, if the rising real rates are consistent with the movements in CPI, it will be more so with that in WPI. Table- 4 shows that between 1980-90 the average real lending rate has been an on average 5% as compared to 6.6% between 1991-2002. Real lending rate has increased in spite of a decline in the nominal interest rate. If one takes WPI, the inflation rate will be even lower and real interest rate will be greater than 6.6%. The real deposit rate has

also increased during the same period from 1.3% to 2.7%. This immediately tells us that the real interest premium for the loans has remained the same, around 4%. Therefore, one should admit that the public sector banks have not lost in terms of net real interest premium and the depositors have not lost in terms of real interest earning between the pre and post reform period, i.e., between 80s and 90s.

These observations are taken from aggregated data. Therefore, if one goes into the details of disaggregated consumption pattern or group specific consumption baskets, it may be observed that an increase in the real deposit rate of around 1% is not being shared by all. Hence, scope for discontents can be plenty. However, there is nothing in the data, which suggests we, as depositors as a whole, are worse off, thanks to a significant drop in the inflation rate.

Table- 4 Real Lending rate and Real Borrowing rate over the years 1980-81 to 2002-03

TIME-PERIOD	RLR*	RBR**	DIFFERENCE***
Pre-liberalization			
1980-81	2.89	-1.19	4.08
1981-82	0.923	-2.53	3.45
1982-83	5.84	3.34	2.5
1983-84	2.36	-1.71	3.07
1984-85	5.55	4.68	0.83
1985-86	8.55	4.49	4.06
1986-87	5.13	2.66	2.47
1987-88	5.4	1.24	4.16
1988-89	4.42	0.6	3.82
1989-90	7.92	3.87	4.05
1990-91	5.04	-0.56	5.6
Post-liberalization			
1991-92	0.1844	-0.47	0.65
1992-93	7.15	1.41	5.74
1993-94	9.67	2.5	7.17
1994-95	6.3	2.86	3.44
1995-96	6.75	0.81	5.94
1996-97	8.25	3.23	5.02
1997-98	8.49	4.73	3.76
1998-99	1.82	-2.11	3.93
1999-2000	7.56	5.42	2.14
2000-2001	7.45	7.72	0.23
2001-2002	8.03	4.21	3.82
2002-2003	7.41	1.9	5.51

Note: \*RLR = Prime Lending Rate minus inflation rate based on CPI (with base year at 1995),  
 \*\*RBR=Deposit rate of commercial banks minus inflation rate based on CPI (with base year at 1995)  
 \*\*\*Difference= RLR minus RBR

Source: Various issues of Hand Book of Statistics on the Indian Economy, Reserve Bank of India, International Financial Statistics, IMF

I am more concerned with the issue of the increase in the real lending rate, not so much because of its impact on the long-term investment. I am concerned because high real interest rate affects the real cost of borrowing of short-term credit affecting the economy in general. This would be more transparent if one looks at the WPI. When prices of goods are declining but nominal interest rate does not decline to compensate, borrowers' cost of production is bound to

increase. Is it a mere theoretical possibility? Is there any evidence in India that firms are suffering due to a rising real interest rate? I shall provide one anecdotal evidence from an article published in The New York Times on 12.06.04.

It is observed that the foreign banks are finding it easier to capture Indian market compared to the Chinese market. One of the reasons is that in China, local competition is fostered through administered interest rate and easy loan to local competing brands etc. Hence, the multinationals find it tough to compete locally, but they do use the low cost advantage for increasing exports from China. In India firms are of the opinion that banks are charging so much that it is difficult for the local firms to compete with global giants. This has been cited as one of the reasons why multinationals are not interested in exports from India and they focus on the local markets instead. One must not take this reporting as a model statistical evidence. But real lending rate is still quite high in India compared to many countries, particularly US and Europe. This does affect the nature of competition and industrial structure. Banks are so concerned about profits and capital adequacy norms that they go for extensive retail lending and at the same time they discourage small producers and traders by keeping up a high real lending rate. Relative difference in the cost of accessing capital is likely to alter the ownership structure of business as well. This has been dealt with in Marjit and Roychoudhury (2004). Does this have full-scale macroeconomic implications? I am not sure.

A typical bank's profit, nowadays, is quite dependent on "treasury transactions" rather than on the net earnings from advances. Treasury operations involve buying and selling government securities. A drop in the nominal interest rate increases the value of such securities. The additional values are shown up in the profits. If one wants a real measure of such a change, returns on government bonds or securities should be discounted by real interest rate. As our calculations show, a rise in such real rate will reduce the "real" value of these assets and will reduce the "real" profits of the banks. While an increase in the real lending rate reduces the net value of firms, as they are borrowers, this also reduces the relative profitability of the assets, assets that are substitutes for loans and advances. Should we remain silent and not criticize the way banks report profits?

The set of objectives for banking sector reforms may include various elements. We may need more reformatory measures to increase competition and improve quality of service. We may desire to induce banks to provide for socially productive projects for example we should design schemes under which banks will support investment in human capital. We may regulate banks so that financial scams can be effectively deferred.

I think there are intensive problems in the banking sector. While car and housing loans are very easy to get, strict requirement of a substantial collateral discourages the poor and the needy to finance education. A case in point is the recent suicide of a good computer-engineering student in Kerala who could not continue her education because no bank was ready to give her a loan (The Hindustan Times, Kolkata, 26-07-04). While collateralization is important, then have been umpteen incidents when influential borrowers get away by overinvoicing the value of collateral and the banks seldom monitor them (Marjit (2004)).

Even in the recent budget another round of liberal credit policy has been announced for the agricultural sector. But steps prescribing banks to give loans for financing primary, high school and vocational education in rural areas never features in our policy discourse.

There must be ways and means to channelise banking resources to the spots where they are needed, be it self-employment, education, venture-capital type activities. Steps also need to be taken so that the government can use the funds, locked in through security holding by the banks, for more investment in the public goods. I do not think that stepping up the quality of service for furnishing loans to buy cars and other consumer durables does anything for our long run growth. There are more serious matters one should look into. I also repeat the fact that the banks must not be allowed to announce excessive profits when they do very little in terms of basic lending for productive purposes. Bank profits from treasury transactions must be discounted by a relevant factor to reflect the "quality" of improvement in performance.

## Section V: Does investment explain India's economic growth between 1980-2002?

So far we have discussed at some length whether investment is sensitive to changes in the rate of interest and how private and public rate of investment have behaved in last two decades, covering roughly a decade each before and after reforms. While traditionally rate of investment is a major player in the economic growth process, recent years have experienced a lively debate on to what extent economic growth is dependent on the rate of physical capital accumulation. Earlier we have shown that the East Asian countries, along with a booming success in foreign trade, also raised their rate of investment considerably over the last twenty years. They stand well above the Indian economy with a considerably higher rate of investment. Young (1995) argued that the extraordinary East Asian growth phenomenon has been mainly caused by capital accumulation. This has been contradicted by Klenow and Rodriguez-Clare (1997). Easterly (2002) and others argue that the high rate of investment was itself a reflection of productivity growth. Once that is accounted for, the independent impact of high rate of investment is significantly reduced.

Easterly (2002, chapter-3) has cited examples where high rate of investment had mixed effects on growth. Both Nigeria and Hong Kong increased their physical capital stock per worker by over 250% over 1960 to 1985, Nigeria's output per worker rose by 12% whereas Hong Kong's increased by 328%. Gambia and Japan increased their capital stock by 500% between the same period, Gambia had a 25% increase in output per worker, in Japan it rose by 260%. Klenow and Rodriguez-Clare (1997) conclude that Singapore's high growth of output per worker is a consequence of technological progress, rather than consequence of a sustained increase in capital stock per se.

This brings us to the relationship between growth and investment in the Indian context. Following a rudimentary and yet revealing method, very similar to what Easterly (2002) does in his book, we have regressed the rate of growth of per capita GNP (denoted as  $GR\_PCGNP$ ), on  $IOR_{LAG1}$  (a one period lagged value of the ratio of investment to output). The results are reported in Table 5.1 (Panel- 1). We have checked for the stationarity of the series of data with the result that the series are stationary at levels. In the first regression, only  $IOR_{LAG1}$  has been taken as the explanatory variable. The regression results show that  $IOR_{LAG1}$  is a significant variable (at 5% significance level) having a positive coefficient. This means that the growth rate of per capita GNP (denoted as  $GR\_PCGNP$ ) has a direct relation with one year lagged value of investment-output ratio. In the second regression, we include an intercept term along with  $IOR_{LAG1}$ . But after the inclusion of the intercept term,  $IOR_{LAG1}$  becomes insignificant. Let us repeat the exercise taking the growth rate of per capita GDP ( $GR\_PCGDP$ ) as a dependent variable. Surprisingly the results do not change so much. Following the results given in Panel-2 of Table 5.1, we may see that,  $IOR_{LAG1}$  again happens to be a significant variable with a positive coefficient but whenever a constant term is added, it eventually becomes insignificant. Just one more point to note here is that,  $R^2$  actually deteriorates this time, whereas the value of Durbin-Watson test statistic improves. Here, it has to be mentioned that all the regressions are done only after checking the stationarity of the variables. In the third panel of the table, we introduce a new explanatory variable,  $\frac{INV_t}{GDP_{t-1}}$  — the ratio of past years investment to current years GDP. We then regress

$GR\_PCGDP$  on  $\frac{INV_t}{GDP_{t-1}}$ . The results are reported in Panel – 3 of Table 5.1. Again we fail to find

any significant relationship between these two variables. Here we have not reported the result without a constant term, because exclusion of an intercept is resulting into a negative  $R^2$ , which is awfully unlikely. There seems to be very little dependence between the lagged value of investment-output ratios and growth of per capita GNP or GDP. Such rough statistical calculations suggest that the rate of investment and the rate of growth do not show much of a relationship over the last two decades. Since, the econometric exercise reported above is very rudimentary in nature, a more rigorous time series exercise may reveal the underlying symbiosis

of the variables. Thus, from this particular exercise we cannot conclude that just raising the rate of investment will in fact increase the growth rate. But we can do a more intensive analysis to see if there is any relationship between investment and growth.

Table- 5.1 Regression results: Regressing rate growth of per capita GNP/GDP on lagged values of investment-output ratio

Panel –1										
Dependent Variable: (GR_PCGNP)										
Model	Explanatory Variables	Constant Coeff. (t-value)	IOR <sub>LAG1</sub> Coeff. (t-value)	IOR <sub>LAG2</sub> Coeff. (t-value)	R <sup>2</sup>	Log Likelihood	Durbin Watson	AIC	SBC	F statistic
1	IOR <sub>LAG1</sub>	--	13.62 (2.18)*	--	0.05	(-) 77.65	2.25	5.01	5.15	--
2	Const., IOR <sub>LAG1</sub>	(-) 12.36 (-1.36)	58.32 (1.98)	--	0.11	(-) 78.19	2.49	5.12	5.19	3.71
Panel – 2										
Dependent Variable: GR_PCGDP										
Model	Explanatory Variables	Constant Coeff. (t-value)	IOR <sub>LAG1</sub> Coeff. (t-value)	IOR <sub>LAG2</sub> Coeff. (t-value)	R <sup>2</sup>	Log Likelihood	Durbin Watson	AIC	SBC	F statistic
1	IOR <sub>LAG1</sub>	--	15.36 (8.26*)	--	0.002	-40.64	4.16	4.21	2.17	--
2	Const., IOR <sub>LAG1</sub>	8.89 (0219)	1.47 (0.301)	--	0.005	-40.61	2.14	4.2	4.36	0.091
Panel – 3										
Dependent Variable: GR_PCGDP										
Model	Explanatory Variables	Const. Coeff. (t-value)	$\frac{INV_t}{GDP_{t-1}}$ Coeff. (t-value)	R <sup>2</sup>	Log Likelihood	Durbin Watson	AIC	SBC	F statistic	
1	Const., $\frac{INV_t}{GDP_{t-1}}$	-36.56 (1.92)	10.85 (-1.29)	0.081	-41.40	2.29	4.13	4.23	1.68	

**NOTES:**  
 Estimation procedure followed: Ordinary Least Square (OLS) estimation; Characteristics of the variables: I (0)  
 \* Implies the significance at the 5% level.  
 AIC: Akaike Information Criterion, SBC: Schwarz Bayesian Criterion.

Let us now check if the growth rate of GDP (denoted as  $\frac{\Delta GDP}{GDP}$ ) as a whole and that of GDP net of agriculture (denoted as  $\frac{\Delta GDP_{NET}}{GDP_{NET}}$ ) have any relationship to growth rate of net fixed capital stock (denoted as  $\frac{\Delta K}{K}$ ). To begin with, we first check the stationarity of these variables. Both Dickey-Fuller and Phillips-Perron tests reveal the fact that all the three variables are stationary. So, we can run our necessary regressions. The regression results show that  $\frac{\Delta GDP}{GDP}$  has a significant and direct relation to  $\frac{\Delta K}{K}$  with a quite satisfactory value (2.10) of Durbin-

Watson test statistic. Then, we regress  $\frac{\Delta GDP\_NET}{GDP\_NET}$  on  $\frac{\Delta K}{K}$ , and observe that the former is

positively affected by the latter, and the regression involves a significant intercept term. Although the Durbin-Watson is giving a lower value (1.60) for the second regression, we can consider the results to explain our assertion that growth rate of capital stock directly affects growth rate of GDP (net of agriculture). The results are summarized in table 5.2. The two sets of regressions involving growth rate, the rate of investment and growth rate of capital stock gives us different results. But the fact is that the growth rate of India's national income is not very sensitive to rate of investment or growth rate of capital stock. To get more insight as to what causes growth in India we turn to a recent work.

Table- 5.2 Regression results: Regressing rate growth of GDP as a whole and GDP net of agriculture on rate of growth of fixed capital stock

Reg <sup>n</sup>	Dependent variable	Explanatory variables	Coefficient (t-statistic)	DW	LL	AIC	SBC
1	$\frac{\Delta GDP}{GDP}$	Constant	-0.002 (-1.35)	2.10	177.89	(-) 7.179	(-) 7.10
		$\frac{\Delta K}{K}$	1.03 (32.67*)				
2	$\frac{\Delta GDP\_NET}{GDP\_NET}$	Constant	0.03355 (7.650*)	1.60	131.62	(-) 5.29	(-) 5.21
		$\frac{\Delta K}{K}$	0.437079 (5.380*)				
Note: * Denotes that the t-statistic falls in the rejection region $\Rightarrow$ the variable is significant DW = calculated value of Durbin Watson test statistic LL = Value of the Log-likelihood function AIC = Akaike Information Criteria SBC = Schwarz Bayesian Criteria							

To get into a reasonable detailed analysis of India's growth experience in recent years we may refer to Guhahasnobis and Bari (2004). According to them, although investment is a factor of utmost importance for enhancing growth, trade can help growth by raising the investment-GDP ratio. In India, investment-GDP ratio does not show any structural break between low-trade and high-trade regimes, whereas, total factor productivity growth (TFPG) does.

This assertion keeps in line with the fact that, increase in productivity has played a crucial role in increasing India's rate of growth in recent period. But that is not getting translated in high rate of investment. We may undermine the role of investment in growth by citing some examples. But we cannot undermine the fact that high growth phases in many countries have been those when rate of investment also reached a respectable level. This is where I believe the role of infrastructure assumes a very important role. Investment will be far greater when future productivity increase through infrastructural investment. Investments will be high when more investment is forthcoming in human capital. If institutions provide the right incentives to the people to invest in human capital, to the private sector to invest in infrastructure, rate of investment and growth both will increase. We do not have data for a sufficiently long period to find out the impact of "technology", "infrastructure", and "institution" on the rate of growth.

## Section VI: Capital Accumulation in The Formal Vs. Informal Manufacturing.

I think that one of the major problems of understanding the dynamics of growth, capital accumulation and productivity in the Indian context is our lack of understanding, lack of information and lack of interest in the evolution of the informal sector. Even if we ignore agriculture, informal sector provides employment to at least 50% of the total work force. Therefore, growth in this sector is absolutely essential to sustain the livelihood of millions. In recent papers Marjit and Kar (2004) and Marjit and Maiti (2005) have used the NSSO data on informal manufacturing (NDME) for various rounds in the pre and post-reform period, and some of the findings are as follows.

- (1) Real informal wage has increased between the pre and post-reform period across all states.
- (2) While growth in capital stock in organized manufacturing has been negligible in the post-reform period, growth of fixed assets in the informal manufacturing has been quite impressive.

Tables 6 and figure-6 substantiate these claims. While it is difficult to analyze in detail the role of financial reforms in the informal sector, one should keep track of the dynamics in the sector. With deregulations formal-informal distinction will continue to be blurred and capital may try to shift from the formal into the informal with fewer subsidies but possibly with greater flexibility. It is absolutely essential to remove legal impediments working against optimal reallocation of capital and other assets.

Table- 6 Annual Growth Rates of Real Informal Wage across States of India

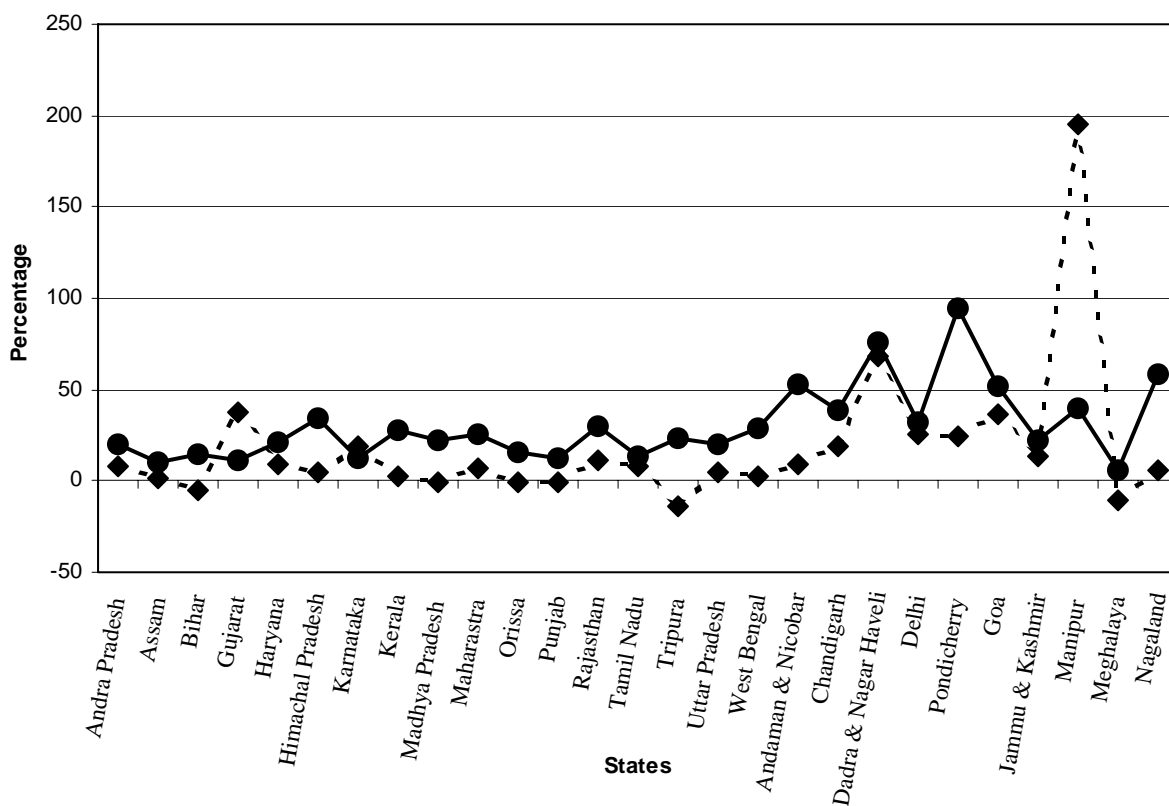
States	1984-85 to 1989-90	1989-90 to 1994-95	1994-95 to 1999-00	1999-00 to 2000-01	Post Reform Average
Andhra Pradesh	-14.94	38.38	0.35	5.54	14.76
Assam	-12.59	9.40	0.50	19.95	9.95
Bihar	-12.48	9.26	-0.91	37.42	15.26
Gujarat	-8.01	5.86	3.76	9.47	6.36
Haryana	-15.42	23.39	-4.12	33.07	17.45
Himachal Pradesh	-11.52	-0.34	3.51	24.55	9.24
Karnataka	-12.82	21.55	7.02	13.44	14.00
Kerala	-14.90	12.56	2.69	21.20	12.15
Madhya Pradesh	-12.61	22.41	1.46	13.12	12.33
Maharashtra	-6.40	9.75	5.25	11.29	8.76
Orissa	-13.16	22.79	-2.39	33.19	17.86
Punjab	-15.14	12.20	-1.07	44.06	18.40
Rajasthan	-15.50	32.53	-1.34	33.04	21.41
Tamil Nadu	-10.11	6.41	14.13	11.49	10.68
Tripura	-14.31	14.89	-5.46	45.37	18.27
Uttar Pradesh	-13.20	18.00	-1.58	26.79	14.40
West Bengal	-11.26	11.41	-7.25	15.30	6.49
Arunachal Pradesh	--	14.63	3.20	2.91	6.91
Chandigarh	--	19.21	5.50	12.47	12.39
Dadra & Nagar Haveli	--	9.83	-4.02	37.77	14.53
Delhi	--	13.27	20.39	12.10	15.25

Lakshyadip	--	-0.21	9.93	7.83	5.85
Pondicherry	--	20.77	-3.96	-18.55	-0.58
Goa	--	20.50	0.95	23.75	15.07
Jammu & Kashmir	--	20.71	2.84	33.64	19.06
Manipur	--	24.91	-4.18	26.83	15.85
Meghalaya	--	18.92	-5.29	33.57	15.73
Mizoram	--	19.93	-6.92	24.70	12.57
Nagaland	--	15.63	-1.96	25.16	12.94
Sikkim	--	28.81	-0.01	42.16	23.65

Source: NSS, Government of India

Figure-6

### Annual Growth Rates of Formal Capital Stocks and Informal Real Fixed Assets



- ◆ - Post reform average growth rate of real capital stock of formal sector

● Post reform average growth rate of real fixed assets of informal sector

Notes: in this exercise average annual growth rates of two variables are taken, while the detailed calculations are available on request.

## Section VII: Policy recommendations.

1. At the sectoral level, one must identify the factors affecting sectoral growth, rate of investment, employment etc. then try to find the potential demand for infrastructure at the sectoral level.
2. One must seriously address the issue of financing infrastructural investment, i.e. legal impediments. Whether we should go by the standard Build-Operate-Transfer (BOT) method or by some sort of Build-Transfer (BT), Maintenance-Operation (MO) method by which the government will build and transfer and the private sector will maintain and operate. Various types of infrastructure should have various types of contractual arrangements. For example investment contracts in roads and in power have different complexities. A detailed discussion is provided in the appendix dealing with regulatory and legal problems of private investment in infrastructure .
3. Since economic growth in India is significantly related to growth in agriculture, though the dependence has declined to some extent in recent years, one must reduce the dependence of agriculture on natural calamities. Public investment in agriculture, particularly in irrigation has to be looked at. Even with 20% share in national output, drought years can work up havoc in overall growth situation. More irritating is the fact that if one has a negative growth in agriculture in the last period and a positive growth in this period, thanks to mother nature in both cases, the later jump in overall growth rate will be unnecessarily trumpeted around. As a consequence the issue of raising investment in agriculture will be thrown under carpet. Investment in irrigation seems to be a must.
4. It is advisable to follow Rakshit (2003) arguments in order to utilize our huge foreign exchange reserves for public investment. For example if investment in power sector require import of machines and technology we can afford that now since we have reserves to pay for. We are paying back some of our own debt. This should save future investment payments. Such savings must be utilized for enhancing public investment. We have a tendency to accumulate excessive "buffer" stocks, be it food grains or foreign exchange. There is no way of knowing whether \$100 billion or \$120 billion is the right amount to hold onto. Rakshit (2003) stresses the point that we are possibly holding too much reserve. With domestic interest rate being higher, if we are losing at the margin and there must be ways to properly utilize the excess reserves. Currently the ministry and the Planning commission are contemplating to utilize the FOREX reserves for investment in infrastructure. Here are some of the issues being discussed.

In the INDO-ASEAN Business Summit organized by CII Prime Minister Mr. Manmohan Singh announced that the government would set up a regulatory framework for infrastructure to create the necessary environment to attract \$150 billion worth FDI in the infrastructure sector. The allocation of the fund will be as follows. Airports and railways will alone amount to over \$5 billion in the next 10 years. The power sector and telecommunications will receive respectively \$75 and \$25 billion in the next five years. It has to be mentioned in this regard that, the Planning Commission got each of the infra-ministries to make one round of comprehensive presentation at the Yojana Bhawan on specific problem ailing the sector and measures required at per. Mr. Montek Singh Ahluwalia, Deputy Chairman Planning Commission, strongly recommended that successful private-public partnerships in setting up infrastructure joint ventures are extremely vital in the present Indian scenario. Here, he added that the Plan panel need to prepare a paper indicating the regulatory structure required for each area so that the existing system can be compared with the international best practice and the gaps within get readily identified. The prime minister claimed that India would soon become a great field for the Asean business. One of the major problems facing Indian infrastructure is the scarcity of finance. Large projects often get discarded because of the paucity of investible funds. The planning commission now aims at coming out of this

problem through an pristine use of Indian FOREX reserves. India's foreign exchange reserves are burgeoning at about US\$120 billion, perhaps double the level required by prudential considerations the key infrastructure sectors are still running meagerly short of investment, especially public investment. Such a situation has lead the planning commission to design a scheme in order to deplete FOREX to boost up the infrastructure sector. The scheme will have the following aspects:

- The government will increase the Centre's fiscal deficit (over and above levels implicit in the Fiscal Responsibility and Budget Management Act) by a specified amount, say, Rs 20,000 crore a year, to fund worthwhile public infrastructure investment.
- To ensure that this additional deficit does not raise interest rates and crowd out other investment, the entire amount would be raised by placing an equivalent value of government bonds directly with the Reserve Bank at the prevailing interest rate.
- Since this constitutes monetization of the deficit with the potential for increasing money supply and inflation, the new public investment will be structured to be import-intensive.
- Ideally, if the entire Rs 20,000 crore were spent on imports, then FOREX reserves would decline by this amount. In effect, the increase in domestic assets of the RBI (from the additional government bonds) would be fully neutralized by a corresponding decline in foreign assets (reserves), thus leaving the supply of reserve money (and hence broad money) unchanged. Note that this scheme echoes some of the observations made in Rakshit (2003).

In a summary, the scheme actually claims to accomplish Rs 20,000 crore a year (only an illustrative figure) of additional public investment ("out of the RBI's FOREX reserves"), without stimulating inflation and without crowding out other ongoing investment and with only a cosmetic increase in the fiscal deficit. Despite all the affirmative aspects of the scheme, there arise some counteracting issues also. For example, although the suggested option for cutting import duties is reasonable from a trade liberalization perspective, it does entail revenue loss and hence a higher fiscal deficit with the usual consequences of pressure on interest rates and crowding out. Again, since much of infrastructure investment is not import-intensive (such as, roads, irrigation, and airports) the additional expenditure will not lead to much decline in FOREX reserves. That means the effect of monetization will have significant inflationary consequences. Third, while the effects of the higher fiscal deficit entailed by the basic scheme are claimed to be neutralized through monetization, its public debt consequences may not turn out to be very satisfactory as it can raise India's already high debt- GDP ratio further. This may lead to a higher debt service burden on government finances. Keeping these consequences in view the suggestion that has been is that, 'public investment in infrastructure should be increased, but through the normal methods of raising more tax and non-tax revenue resources and containing low priority current expenditures'.

Views in favor and against monetization of the deficit to finance infrastructure investment demand so far, are summarized from ongoing discussions at various levels of concern. While sharing the basic criticism against monetization of deficit, I still believe that our voluminous FOREX reserves must be properly contained and utilized at the same time.

In my view one also has to contain the problem of ever increasing foreign capital inflow and its secular impact on inflation when continuous sterilization becomes difficult and the income loss holding onto unproductive reserves turn out to be significant. I propose an infrastructure tax on capital inflow, proceeds of which will be directly invested in infrastructure. This will create marginal disincentive for capital inflow and generate revenue at the same time. Of course the nature of such tax should be debated. It is important to understand that perceived return differential has to be significant so as to justify the continuous inflow of capital. It is high time we think of a tax since our macroeconomic capacity to absorb such inflow seems to be inadequate at this stage. We cannot afford to let currency to appreciate to a large extent, we cannot afford high

rate of inflation, we cannot go on issuing fresh bonds, inducing banks to hold them far beyond reasonable limit and in effect raising public debt.

Allowing the exchange rate to appreciate periodically is a good policy in the current context, so that the resulting current account deficit eases the burden on money supply. We must be aware of the problem that if we under value the exchange rate, in anticipation of a possible backlash on the export front, we also pamper expected appreciation of the currency leading to even more capital inflow. Moreover, exchange rate movement may not affect our exports that much, although imports may rise.

#### Concluding remarks:

This policy paper attempts to explore the nexus of financial sector reforms, investment and growth in contemporary India. At the same time one objective behind the exercise is to suggest policy directions, which might help in increasing the rate of investment and growth and the medium to long run. We have tried to make a few policy suggestions in various sections of the paper. The general observation is that typical reform measures in the financial sector reflected in a decline in the nominal borrowing rates, smooth operation of stock market and providing flexibility for the firms to raise resources at home and abroad can work up to a limited extent. Substantial public investment or public-private joint ventures are needed to boost up infrastructural facilities. This in turn will guarantee a significant jump in the rate of investment. However, increase in the rate of investment per se does not increase the growth rate. One has to look at the productivity issue also. It is well recognized, through remarkably extensive cross-country empirical work, that impact of investment on growth, controlling for associated productivity increase, seems to be less significant than derived via an uncontrolled exercise.

There are certain Indian realities we must face up to. Deserving small and fresh entrepreneurs are finding it very difficult to get loans from the banks while retail banking seems to be at its peak and so is the share of government securities in banks' assets. This is not as healthy sign. Activities promoted by retail banking do not create significant value added and employment. From a macroeconomic perspective, people have perceived lower deposit rates a threat to their future earnings and increased savings substantially. Thus lower interest rate may not boost up aggregate demand even if it keeps raising consumption among the relatively affluent section of the young generation.

Labor-intensive small and self-employed activities are the right ways out of poverty and stagnation of millions. Way back in mid-sixties there was a debate as to whether the stagnation in Indian industries was caused by an "effective demand" problem. The situation is very different now. But somehow it seems that "investment demand" by small firms is not being materialized and public investment is still trapped in a low level equilibrium.

#### BIBLIOGRAPHY

- Banking Statistics, Reserve Bank of India.  
Bagchi, A., P.K. Das and B. Moitra (2002), Are Listed India Firms Finance Constrained? Evidence for 1991-92 to 1997-98, *Economic and Political Weekly*, Feb 23, Pp. 727-736  
Country Framework Report for Private Participation in Infrastructure, India, World Bank and Public-Private Infrastructure advisory Facility  
Das P.K. (2004), Credit Rationing and Firms' Investment and Production Decisions, *International Review of Economics & Finance* 13, Pp. 87-114  
Easterly, W. (2002), The Elusive Quest for Growth, *Economists' Adventures and Misadventures in the tropics*, The MIT Press, Pp. 47-70  
Fazzari, S., R.G. Hubbard and B. Peterson (1998), Financing Constraint and Corporate Investment, *Brookings Papers on Economic Activity*, Pp. 141-195  
Gertner, R., David. S. Scharfstein and J. Stein (1994), Internal Vs. External Capital Markets, *Quarterly Journal of Economics* 109(4), Pp. 1211-30  
Gilchrist, S., and C. Himmelberg (1995), Evidence on the Role of Cash Flow in Reduced Form Investment Equations, *Journal of Monetary Economics*, 36, Pp. 541-572  
Guhakhasnobis, B. and F. Bari (2003), Sources of Growth in South Asian Countries in I. J Ahluwalia And J Williamson (eds) *The South Asian Experience With Growth*, Oxford University Press: New Delhi  
Handbook of statistics on Indian economy, Reserve Bank of India, 2001-2002

India Infrastructure Report, 2002, 3iNetwork  
 India Infrastructure Report, 2003, 3iNetwork  
 Jhaveri, N. (2003), Reserve Bank of India Proposes, Will Bank Dispose?, Economic and Political Weekly, 15<sup>th</sup> November 2003  
 Klenow, Peter and Andres Rodriguez-Clare (1997), The Neoclassical Revival in Growth Economics: Has it gone too far? in Ben Bernanke and Julio Rotemberg (eds) NBER Macroeconomics Annual 1997, Cambridge, Mass.: MIT Press  
 Macro Economic and Monetary Developments in 2003-2004 (Issued With The Annual Policy Statement For 2004-05, May 18, 2004, Reserve Bank Of India, Mumbai)  
 Marjit, S. and N. Singh (1995), Technology and Indian Industry in D. Mukherjee (eds) Indian Industry – Policy and Preference, Oxford University Press  
 Marjit, S. and P.K. Das (2002), Interest rate, Investment Demand and Industrial Growth – A Medium Term Survey – An IDBI project conducted at the Centre for Studies in Social Sciences  
 Marjit, S. and S. Kar (2004), Impact of Reform on Informal Wage – Partial vs. General Equilibrium Implications, Mimeo, Centre for Studies in Social Sciences  
 Marjit, S. and P. Roychowdhury (2004), Asymmetric Capital Costs and Joint Venture Buyouts, Journal of Economic Behavior and Organization, 54(3), Pp. 425- 438  
 Marjit, S. (2004b), Monitoring Success On a Fundamental Principle of Financial Regulation, Economic and Political Weekly, March 6, 2004, Pp. 1035-36  
 Marjit S. and D.S. Maiti (2005) Globalization, Economic Reform and Informal Labor in B. Guhakhansnobis and S.M. Ravi Kanbur (eds) Informal Labor Markets and Development, McMillan – Palgrave (forthcoming)  
 National Infrastructure Report – 1998, The Quiet Crisis, Asian Institute of Transport Development  
 Rakshit, M.K. (1987), Monetary Policy in a Developing Economy, Working Paper, Centre for Economic Studies, Presidency College, Calcutta, Published in Economic and Political Weekly, Dec 2001  
 Rakshit, M.K. (2003), Managing Capital Flows and Foreign Exchange Reserves – Some Lessons From India's Experience, ADB Economic Bulletin, December 2003, Vol – I, Number – 4  
 Whitehead, T.M. (1992), Debt, Liquidity Constraint and Capital Investment Evidence from Panel Data, Journal of Finance, 47(4), Pp. 1425-60.  
 Young, A. (1995), The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience, Quarterly Journal of Economics (August), Pp. 641-680

## APPENDIX

### Contractual problems and legal hurdles in the context of possible private public joint ventures in Indian infrastructure

Inadequacy in the field of infrastructure facilities is one of the most severe matters of concern for the Indian planners today. Owing to insufficient infrastructure services, Indian industries are facing major bottleneck problems that restrain them from free expansion. It is the problem of financial meagerness that viciously dictates towards such derisory situation of infrastructure. Finance is constrained, so new funding opportunities must be looked at. This has become the most prioritized agenda of our planners nowadays. So it seems hard to escape the conclusion that without accelerating private investment by devising amore friendly investment regime, the infrastructure bottlenecks is expected to disappear. Hence comes the urgency of effective private participation in infrastructure sectors. Unfortunately, development on this front has been utterly sluggish. The legal hurdles and contractual agreements duly set by the planning commission regarding private participation in infrastructure has played a very crucial role behind this overall slackness. It is not that Indian laws clearly prohibit private participation, in fact laws are being designed to encourage private participation to a large extent, but the problem is that most of them still have certain critical drawbacks, which effectively deter private participation in the relevant infrastructure sector. Let us glance through some of these drawbacks that obstruct active private public participation in infrastructure to materialize.

- The law structure often disallows private interest to be created in an infrastructure service. This makes investment in infrastructure unbeneficial for the private investors. This can be witnessed in the municipal laws of many states, which mandatorily vest many critical urban infrastructure facilities in the local municipal authority. For example in relation to water supply, municipal legislations of many states mandate that all water treatment plants and distribution facilities within the given municipal area shall vest in the local municipal authority. The immediate effect of such a provision is that any such facility, as and when developed, becomes the property of, and falls under the complete control of, the local authority.

- In some cases laws mandate that certain services will be provided only and only via specific statutory body/authority. Just like the water supply and sewerage boards in many states. These are generally vested with the exclusive authority to supply water and undertake sewerage treatment in the area under their jurisdiction.
- Private investment does not always receive adequate protection in terms of its tenure in the particular infrastructure service it is providing. The legal framework may provide wide and easily exercisable discretionary powers to the government/ government authority to take over a facility established by a private entity. For example, under the Indian Electricity Act, 1910 read with the Electricity Supply Act, 1948, the facilities established by a licensee under the IEA, 1910 could be taken over by the SEB through a relatively easy procedure of adequate notification. When private participation was allowed through the generating company route, these laws had to be amended to specifically protect the assets developed by generating companies from such wide discretionary powers. In the absence of such specific amendments, would not have been possible to obtain private investment in the generation sector.
- The existing law structure does not allow sovereignty to the private entity for the development and implementation of an infrastructure project. This curbs the independence of the private players and public private joint ventures lose its appeal to the private players.
- Law may not provide for creation of security interest over the infrastructure facility in favor of lenders. Lenders are, technically, third parties to any agreement/arrangement between the government and the private developers. However, they typically have large financial stakes in infrastructure projects. The laws governing various infrastructure sectors in India do not address the aspect of rights of lenders to a project. Even in an infrastructure sector such as telecommunications, which has a high level of private participation, the law and the license provide for the direct taking over of the facility by the government in the event of a default by the licensee or the termination of the license. Private operators experienced major difficulties in obtaining financing for their projects under the prevailing license structure. This delay is largely due to the difficulties license holders have faced to date in achieving financial closure because of the high cost of license payments. The law as well as the license itself does not provide a secure basis for the establishment, recognition, and enforcement of the rights of the lenders to a project. It is essential to address this aspect in order to ensure that lenders' interests in a project are adequately safeguarded.
- Law may not provide for due recognition and enforcement of lenders' rights: In order to enable successful project financing of infrastructure projects it is critical that the relevant law enables the creation of the security interest in favor of the lenders in the assets of the project, recognizes all the necessary rights relating to the continued implementation of the project, and allows for a secure and speedy enforcement of such security rights. This is a function of not only the infrastructure specific laws but also the laws relating to banking, property, enforcement of rights relating to property, and civil procedure followed by courts. It is not really possible to conclude a pure project finance transaction in India. All financing of infrastructure projects in India has a large component of recourse against the equity sponsors or have a large component of guarantee based financing. This situation is a direct result of the existing legal framework relating not only to the specific structures but other general law relating to enforcement of security rights. This was one of the main issues that held up the adequate financing of the basic telephone service projects and certain cellular projects in 1995–7. This led to a move to formulate a direct agreement between the government of India and the lenders, acting through a security agent, that would allow for rights to be created in favor of the lenders in the license and the project and also to regulate the rights of the government to terminate a license and take over the network. However, even though an amendment was circulated to the

licensees indicating that: (a) rights in relation to the license and the project can be created in favor of the lenders in accordance with the direct agreement; and also that (b) the rights of the government to terminate the project will be subject to the rights of the lenders under the direct agreement, till date the draft of the direct agreement has not been finalized or approved by the government.

- Imposition of tariff/fee/toll for use of the infrastructure facility/service may not be provided by law. It is common to find that the legal framework of a specific infrastructure sector may not allow for, or be completely silent on, the imposition of tariff in relation to the concerned infrastructure facilities. Many state laws relating to urban infrastructure such as roads, bridges, and water supply do not support imposition of tariffs in relation to the use of such facilities.
- Private participants are often not allowed to enjoy the imposition of a regulated yet commercially viable tariffs/fee/tolls. Even if the legal framework provides for imposition of tariff for use of a specific infrastructure facility, the tariff so mandated fails to attract large-scale investment of private capital. This can be commonly seen for example in the case of roads and bridges. Many states do have a Tolls Act that enables the levy and collection by the government of a tariff on the use of a state road or bridge. However, the level of the tariff and the extent to which it can be revised is extremely low and commercially unviable. Similarly, the framework for the levy, determination, collection, and revision of the general rates of tariff for supply and usage of potable water in urban areas do not provide for commercial viability of investment.
- Private players are not welcome to be a part of the tariff determination mechanism. One may cite here the example of the Electricity Regulatory Commissions Act, 1998 that empowers the Central Electricity Regulatory Commission and the State Electricity Regulatory Commissions to determine tariff for the sale of electricity within their respective jurisdiction. The provisions that provide the guidelines for the exercise of such power by the respective commissions however do not mandate participation of the private developers in the relevant aspect of the electricity sector for which the tariff may be determined by the respective commissions.
- The private participants are often left behind from collection and appropriation of tariff/fee/toll by the private entity from the users of the infrastructure facility. This is a drawback that can be commonly spotted in state laws relating to levy and collection of tolls on roads and bridges as well as municipal laws governing urban infrastructure such as the water sector. In the absence of a specific right to retain and appropriate tariff, there is always the possibility of challenging the revenue stream from the facility as being a public revenue stream that should go into the consolidated fund of the state rather than a private revenue stream that is the property of the private developer. This is particularly so in cases such as tolls on roads and bridges where most of the state laws governing tolls on roads and bridges specifically mandate that the amounts so collected shall be part of the consolidated fund of the state. Let us just glance through the Coimbatore experience. To reduce the congestion and improve road quality, the central and state governments have focused on road development projects in the recent years. Public-private partnerships have also been leveraged through the Build, Operate and Transfer (BOT) framework. The primary revenue generation of these BOT projects is through tolls. However, in spite of efforts by the government, the toll collection system in India has not been very successful. One such example is the Coimbatore Bypass project, where there are concerns (even as of August 2002) about toll compliance and the financial viability of the project is in question. The Coimbatore Bypass project questions the responsibility of the government in public-private partnership projects. L&T Transportation Infrastructure Ltd (LTTIL), the BOT operator, is facing financial problems due to the difficulty in collecting tolls from the Athupalam Bridge segment of the Coimbatore Bypass project. This experience shows that if the government is reluctant to provide the required support

and action to implement contracts enforcing collection rights of builders, the future of public-private toll-based road development projects is not very bright. It also raises the question of the right kind of bundling and tolling.

- Law does not always encourage an independent regulatory mechanism for the private players. The mere establishment of a regulator is not sufficient. The law has to provide and protect the independence of the regulator from not only political/government influence but private influence as well. A general regulator will typically therefore not be as effective as a sector specific regulator, given the detailed technical considerations that are involved in tariff setting.
- Dispute settlement often becomes absolutely necessary for the implementation of a particular project. But delays in dispute settlement has been a commonly noticed phenomenon in this context that leads to withdrawal of the private player from the project as he finds it no more viable. Disputes can occur at every stage of an infrastructure project. Since it may not be a viable proposition to always establish a separate mechanism intended solely for settlement of disputes relating to infrastructure projects, settlement of disputes through conciliation and arbitration is often regarded as a faster and better mechanism in this regard. Speedy enforcement of arbitration agreements in the law would therefore help considerably. The presence of an independent regulator who can pre-empt, and effectively redress situations of dispute, is also a critical necessity.
- In most of the infrastructure sectors, private investment is usually in the form of private provisioning of public services licensed or procured by the government because, any investment in the infrastructure sector by the private sector has the aspects of some kind of procurement process by the state, unless, of course, the sector has been completely freed from the control of the state. But inappropriate procurement may play a constraint for successful private public participation. It can deter private investments in the infrastructure sector or can result in inefficient provisioning, including waste, delays and poor quality. So, unless the procurement process itself is 'appropriate', attracting and using private capital or the private sector for infrastructure projects per se may not lead to the desired outcomes. This is especially true of infrastructure services where the market failures are large, and complete privatization, with only light regulation, is not possible.



A-2. Private and public investments in infrastructure

Table A-2.1.India: Investments in Infrastructure (1980-81 to 1986-87)

Rs. Billion at current prices

YEAR		1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87
A	GDPmp	1360.1	1597.6	1781.3	2075.9	2313.4	2622.4	2929.5
B	Gross Domestic Investment	308.8	342.1	363.4	418.1	454.7	581.7	611.6
a	Infrastructure	60.8	80.1	91.9	95.7	112.6	136.5	176.2
	Electricity,Gas,Water supply	31.7	42.1	48.3	50.6	5.5	72.4	96.3
	Railways	8.1	9.8	10.7	11.9	14	16.9	23.1
	Other transport	17.5	22.6	26.8	25.9	34.3	37.4	45.3
	Storage	0.2	0.4	0.3	0.6	0.5	0.6	0.8
	Communications	3.2	5.2	5.8	6.8	8.3	9.2	10.7
b	Other	248	262	271.5	322.4	342.1	445.2	435.4
C	GDI - Public Sector	117.7	167.8	201	203.8	249.2	308.7	354.2
a	Infrastructure	47.7	58.3	70.3	73.2	86.3	104.1	142.3
	Electricity,Gas,Water supply	29.5	37.3	44.4	47.6	52.8	69.1	90.9
	Railways	8.1	9.8	10.7	11.9	14	16.9	23.1
	Other transport	6.7	5.8	9.1	6.7	10.7	8.5	17
	Storage	0.2	0.2	0.2	0.3	0.4	0.4	0.8
	Communications	3.2	5.2	5.8	6.8	8.3	9.2	10.7
b	Other	70	109.5	130.7	130.6	162.9	204.7	211.9
D	GDI - Private Sector	191.1	174.3	162.4	214.3	205.6	272.9	257.4
a	Infrastructure	13.1	21.8	21.6	22.5	26.3	32.4	33.9
	Electricity,Gas,Water supply	2.2	4.8	3.8	3	2.7	3.3	5.5
	Railways	0	0	0	0	0	0	0
	Other transport	10.8	16.8	17.7	19.3	23.6	28.9	28.3
	Storage	0.1	0.2	0.1	0.2	0.1	0.2	0.2
	Communications	0	0	0	0	0	0	0
b	Other	178.1	152.5	140.8	191.8	179.2	240.6	223.5
E	GDI (% OF GDP)	22.7	21.4	20.4	20.1	19.7	22.2	20.9
F	GDI - Infrastructure (% of GDP)	4.5	5	5.2	4.6	4.9	5.2	6
G	GDI- Infrastructure (% of total GDI)	19.7	23.4	25.3	22.9	24.8	23.5	28.8
H	GDI - Public Sector( % of GDP)	8.7	10.5	11.3	9.8	10.8	11.8	12.1
I	GDI-Public sector-Infrastruture	3.5	3.6	3.9	3.5	3.7	4	4.9
J	GDI-Public sector-Infrastruture(% of GDI-public)	40.5	34.7	35	35.9	34.6	33.7	40.2
K	GDI- Public (% of Total GDI)	38.1	49.1	55.3	48.7	54.8	53.1	57.9
L	(% of Total GDI-Infrastructure)	78.5	72.8	76.5	76.5	76.6	76.3	80.8

Table A-2.2. India: Investments in Infrastructure (1987-88 to 1994-95)

		Rs. Billion at current prices							
	YEAR	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
A	GDPmp	3332	3957.8	4568.2	5355.3	6168	7053.3	8010.3	9456.2
B	Gross Domestic Investment	764.6	969.7	1138.2	1448.5	1440.2	1631.8	1733.3	2384.1
a	Infrastructure	184.4	219.4	251.7	287.4	350.5	387.3	452.2	494.1
	Electricity,Gas,Water supply	103.8	113	123.4	144.1	189	189.8	213.8	233
	Railways	21.5	26.4	26.4	30.8	33.2	49.2	55.8	59.6
	Other transport	44	57.9	73.6	83.3	95.8	97.8	124.4	128.9
	Storage	0.8	0.8	0.9	0.7	0.5	0.5	0.6	0.6
	Communications	14.3	21.4	27.3	28.6	32.1	50	57.5	72.1
b	Other	580.2	750.3	886.5	1161.1	1089.7	1244.5	1281.1	1890
C	GDI - Public Sector	330.6	393.6	455.7	521.5	565	623.6	687.5	832.5
a	Infrastructure	145.2	167.1	193.5	217.3	266.5	278.4	346.9	387.1
	Electricity,Gas,Water supply	98.8	105.6	117.6	137.7	174.1	154.5	204.4	222.7
	Railways	21.5	26.4	26.4	30.8	33.2	49.2	55.8	59.6
	Other transport	10.1	13.5	21.9	19.7	26.6	24.3	28.6	32.2
	Storage	0.5	0.3	0.4	0.5	0.5	0.5	0.5	0.5
	Communications	14.3	21.4	27.3	28.6	32.1	50.5	57.5	72.1
b	Other	185.4	226.5	262.2	34.2	298.6	345.1	340.6	445.3
D	GDI - Private Sector	434	576.1	682.5	927	875.2	1008.3	1045.8	1551.7
a	Infrastructure	39.2	52.3	58.2	70.1	84	108.9	105.3	107
	Electricity,Gas,Water supply	5	7.3	5.9	6.4	14.8	35.3	9.4	10.3
	Railways	0	0	0	0	0	0	0	0
	Other transport	33.9	44.5	51.8	63.5	69.2	73.6	95.8	96.7
	Storage	0.3	0.5	0.5	0.2	0.1	0.1	0.1	0.1
	Communications	0	0	0	0	0	0	0	0
b	Other	394.8	523.8	624.3	856.9	791.2	899.4	940.5	1444.6
E	GDI (% OF GDP)	2.9	24.5	24.9	27	23.4	23.1	21.6	25.2
F	GDI - Infrastructure (% of GDP)	5.5	5.5	5.5	5.4	5.7	5.5	5.6	5.2
G	GDI- Infrastructure (% of total GDI)	24.1	22.6	22.1	19.8	24.3	23.7	26.1	20.7
H	GDI - Public Sector( % of GDP)	9.9	9.9	10	9.7	9.2	8.8	8.6	8.8
I	GDI-Public sector-Infrastruture	4.4	4.2	4.2	4.1	4.3	3.9	4.3	4.1
J	GDI-Public sector-Infrastruture(% of GDI-public)	43.9	42.5	42.5	41.7	47.2	44.7	50.5	46.5
K	GDI- Public (% of Total GDI)	43.2	40.6	40	36	39.2	38.2	39.7	34.9
L	(% of Total GDI-Infrastructure)	78.8	76.2	76.9	75.6	76	71.9	76.7	78.3

Source: National Infrastructure Report – 1998, Asian Institute of Transport Development

