

Financial sector developments and growth in China and India – Some speculations^{\$}

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ABSTRACT

The paper compares the growth performance of India and China for the last decade and its relationship with the development of financial system. Higher growth in China is ascribed to higher rate of accumulation of capital. A higher level of financial development in China measured by the standard tools has not been effective in attaining a higher rate of growth, but rather a higher growth in the real sector has led the development in the financial sector. On the other hand, the financial development of India has played important role in the growth process. So far as growth potential of financial development is concerned, India is placed in an advantageous position than China. The state of financial development has become important in view of a changing structure in the international arena particularly with the implementation of WTO. But China enjoys clear advantages in terms of accumulated capital, particularly in infrastructure. However, a threat to future growth in both the countries lies in lowering of public investment, especially in infrastructure unless compensated for adequately by private investment. However, the prospect of a higher rate of private investment particularly in infrastructure and social sector in China is unlikely in the face of slowing down of public investment. This increases the possibility of slowing down of the growth process in China towards the Indian level which is already low. Thus the engines of growth instead of picking up might in fact tend to move towards stagnation.

The purpose of this paper has been to explore the potential of the developments of the financial sector in India and China in the next decade and the related implications for growth in the real sector. In recent times there has been a tremendous interest in the growth process of China and India. Both the countries are being looked upon as 'the so called' global engines of growth. Their role as 'global engines' of growth is not so much based on their current performance, but more so for the potential to lead the future growth process in the world economy. It is not only the obsession of the academicians for China and India, but also the policy makers within the respective countries as well as International agencies, such as World Bank and IMF who put a lot of emphasis on this issue. The IMF has coined the term 'global giants' to appreciate their role in the global economy.

Needless to mention the achievement by way of a higher growth rate or a potential for achieving a higher rate are ascribed to pro-market reforms. China has started moving towards a pro-market economy since 1978 while India's reforms have been started much later since 1991. While China dismantled the Soviet style command economy, India broke away from the regime of mixed economy that had a strong role for central planning. However, the reform process had not been same in the two countries; historically different segments of the economy have received different levels of attention. While China has attained a high growth path by accelerating the rate of capital formation with a heavy emphasis on government investment in infrastructure, India instead reduced public investment and rather adopted policies to raise private investment during the reform process. In terms of achievement India has performed the best in the financial sector reforms. Though China had initially taken a different path by way of raising productivity in manufacturing, adopting a path of export led industrialisation and policies to attract more foreign direct investment, domestic and global factors have forced China to redirect the reform process for its financial sector since late 1990s. It is in this context that the present paper addresses the relevant issues.

The role of financial system in the growth process has experienced a renewed interest in the works of Bencivenga and Smith (1991), Boot and Thakor (1997), Greenwood and Jovanovic (1990), Greenwood and Smith (1997), King and Levine (1993), Levine (1997), Obstfeld (1994), Williamson (1987). Levine (1998), (1999), Levine, Loayza, and Beck (2000) confirm the role of banks in the growth process. Levine and Zervos (1998) consider stock market along with banks in explaining economic growth. Rousseau and Wachtel (2000) and later Beck and Levine (2004) based on an improved methodology found that both stock market and banks are important determinants of economic growth. In general the empirical evidence establishes that financial development leads the growth in the real sector. For India also it has been variously shown that the development of banks and other financial institutions positively affects the growth process. For example, in a recent study Das and Guha-Khasnabis (2005) has shown that financial development positively affects credit disbursement from the organised sector in the presence of imperfections in the loans market, which in turn affects the growth process via the transmission mechanism. But China had been an exception in this respect. For example, Liang and Teng (2006) shows that though financial development and growth in the real sector are cointegrated, the causality runs from growth to finance. Thus it validates the view of Lucas (1988) and Robinson (1952) that financial development follows growth, rather than the finance-growth nexus. Hao (2006) has shown that finance contributes in the growth process by way of a substitution of bank loans for state budget, but loan disbursement from banks is inefficient. In general the evidence is not sufficient to establish the fact. Moreover, with a shift of emphasis in the financial sector and opening up of the economy to foreign competition with the

implementation of WTO, a switch of regime is inevitable in China. The present paper addresses these issues in a framework which is based more on the potential of financial development for future growth than on current growth path. The tentative evolution of the financial system in the near future is also discussed in the paper.

With this introduction Section 2 begins with a brief description of the financial system of China and India, then discusses a comparative account of the rates of growth and other important macroeconomic variables in the real sector for the two countries. It also compares the development of financial system of the two countries in terms of standard measures. Then we tried to identify the factors – both real and financial – that can tentatively be considered growth enhancing in the two countries. Section 3 builds up an argument based on the findings of the previous section for the prospect of future growth contingent on the present financial system and its evolution caused by the ongoing internal and external changes that are forthcoming. In our discussion we also bring in the issues pertaining to monetary and fiscal policies that have crucial implications for the financial system. Section 4 concludes.

2. A comparative analysis of real and financial sectors

Since the reforms of the financial sector in both the countries have been initiated in not so distant past, any analysis based on a full blown econometric model is not possible for either of the countries because of the inadequacy of data. It may also be noted that since we intend to concentrate on the issues pertaining to finance and potential for future growth in the sense of a forward looking model, an econometric analysis based on past data may not be appropriate for this purpose. Instead we will look at the pattern of movement of some of the relevant variables to infer about their implications for growth of the real sector in the future with due recognition to the changes that are forthcoming. We use the annual time series data for the period 1991-2004.

Our data source is World Development Indicators 2006 in CD-ROM published by the World Bank for majority of the real variables. In addition we make use of Government Finance Statistics in CD-ROM published by the IMF for data on government expenditure. For banking and financial sector we also resort to the data set compiled by Beck, Demirgüç-Kunt and Levine, (2000) updated upto 2004 on the basis of their methodology.

A characteristic feature of the financial system in both China and India is the dominance of banking sector that acted as the principal institution for intermediation of household savings and source of finance for firms. In fact it is more so in China than in India. In India apart from banks other non-banking financial institutions including insurance companies, mutual funds and post office savings banks have been playing important role for mobilizing savings. While discussing the comparative financial system for a number of Asian countries including China and India Sheng (2004), (2006) pointed out that the dominance of banks in the financial system is a generalized characteristic feature across Asia. The theoretical reason for the overwhelming dominance of banks and non-banking financial institutions (NBFI) in contrast to capital market stems from the argument that the banking institutions channelise savings into profitable investment projects in the absence of a perfect insurance market for loans. The informational problem is more pronounced for the successful emergence of capital market in the developing countries.

Bai (2006), Dobson and Kashyap (2006), Perkins (2006), Maswana (2005), Lane and Schmukler (2006) discuss the characteristics of Chinese financial system in greater detail. In China until 1978 the central bank also played the role of deposit bank. Thereafter commercial banking activities had been segregated from the central bank and four commercial banks were

established. The commercial banking sector in China is highly concentrated and entirely dominated by the public sector banks (PSB). In very recent times specialized financial institutions, such as Export Import Bank, construction bank are coming up.

Das and Guha-Khasnabis (2005), Naastepad (2002), Rakshit (1999) have discussed the characteristics of the Indian financial system at the aggregative level. Since bank nationalization of 1969 (and the subsequent nationalization of 1980) until the beginning of reforms in 1991 the PSBs in India had enjoyed a monopoly power in the banking business. However, there were also private domestic and foreign banks and number of PSBs was quite large so that the concentration was not so high as in China. There were also prevalence of NBFIs, like development banks, insurance companies, mutual funds or other kinds of specialized financial institutions, such as Export Import Bank, but they were by and large in the public sector. While there was no stock market business in China until very recently, the establishment of stock exchange in India had taken place in the nineteenth century though trading in stock market had remained very thin until 1991. The capital market in India was subject to various controls of the government and never taken any major role as the source of finance for the industry.

The characteristics the financial institutions in the two countries that worth mention in the context of the issues pertaining to finance-growth nexus are the following. Until the reforms were initiated in the late 1990s in China and in 1991 in India there prevailed a regime of administered interest rates for both deposit and lending and directed credit programme. In the lending business it has resulted into large scale credit rationing. However, inspite of the 'financial repression' the savings in the form of bank deposits had not suffered in China. The Chinese banks primarily supplied the working capital loans to the firms. The finance for fixed capital investment came from the retained earnings. This was the practice of the public sector enterprises (PSE), and it is the same for even the newly established private enterprises. Often the PSEs did not declare dividends. Earlier a closed domestic market with high rate of taxes for goods enabled the PSEs to earn a very high rate of profit and the government to collect substantial revenue respectively. These were used to finance investment either as ploughed back retained earnings or through the budgetary support. It may be noted that the private sector in China has still very limited access to bank loans. For example, private enterprises received only 0.62% of loans from all banks and 0.5% of all loans from PSBs, while the private enterprises contributed nearly 35% of industrial output in 1998 (Maswana, 2005).

In his analysis on the flow of funds Maiti (2001) has shown that banks and NBFIs are the principal source of financing for the Indian firms. Bagchi, Das and Moitra (2002) has shown the dominance of banks as the source of financing for private Indian corporate sector for the post reform period. Das and Moitra (2004) has shown that investment of the medium sized private corporate firms in India are constrained by the availability of bank and NBFIs loans while the very tiny and very large sized firms are not constrained in the loans market.

With this brief description of the characteristics of financial system in China and India we now take up the issue of growth in the real sector. We provide averages of rates of growth and some of the macroeconomic variables for the real sector for the period 1991 to 2004 in Table 1. These variables have often been considered responsible for achieving high growth rate. China has been successful to attain a very high rate of growth and maintain it for two decades since late 1970s. Starting from a rate of growth of 3.6% in the pre 1978 period, when reforms were initiated, China's rate of growth has averaged a noticeable 9% for the last two decades. As a matter of fact the China's average rate of growth of GDP for the period 1991 to 2004 is 10.14% and has never been less than 7.5% during the same period. This high rate of growth in China has

been ascribed to a high rate of savings and capital formation. Prior to reforms in late 1970s rate of gross capital formation averaged at 34.5%, which in 1980s was 35.4%, 36.8% during 1990s and 36.46% for the period 2001 to 2004. It may be noted that though the rate of gross capital formation differs slightly between 1970s and 1990s, rate of growth of GDP had risen in the more recent years, viz. decade of 1990s and 2000s. It has been observed that reforms had little to do with accelerating rate of growth of capital formation, but it was due to changes elsewhere and that acceleration in growth of GDP led to increased rate of capital formation. Perkins (2006) has commented that since late 1970s China stopped doing so many wrong things in economic sphere that growth was bound to start. Since then China has adopted the policy frame that its neighbours, Japan, South Korea had already started. The central emphasis of the reform involved dismantling of Soviet style planned command system and a gradual shift towards market based system.

India until early 1990s had been famous for a very low rate of growth – the notorious Hindu rate of growth – a mere 3% to 5%. In spite of an era of planning and various kinds of government intervention with the aim of industrialisation led growth it has never picked up until early 1990s. The rate of gross capital formation had also hovered around a little more than 20%. It is only in 1991¹ that a large scale reform process was initiated in India. It involved fiscal, monetary, banking and financial fronts and also in the public sector. For the latter the reform measures had been directed towards a smaller public sector as well as making them profitable. Interestingly largest degree of reforms had been achieved in financial, particularly banking sector. All these have resulted into a higher rate of growth, higher by Indian standard, but not at all impressive in comparison to China or other countries in the South East Asia. It is only during 2004 and 2005 that the rate of growth has attained 9%.

The per capita GDP of the two countries also shows marked difference. Starting with a per capita GDP of 1486.48 in 1991 India's per capita GDP has reached 2885.29 in 2004 while Chinese per capita GDP has grown from 1720.85 in 1991 to 5418.87 in 2004 (all calculations at constant 2000 US \$ adjusted for PPP). The rate of growth of per capita GDP is almost three times higher for China (9.10%) than India (3.91%).

This high rate of growth of GDP had often been ascribed to a very high rate of savings and capital formation (and fixed capital formation). As is evident from Table 1 the average domestic savings rate in China is 39.08% while that in India is 21.86%. The rates of gross capital formation and gross fixed capital formation in China and India are 36.73%, 33.67% and 22.93%, 22.34% respectively. The rates of growth of gross fixed capital formation are also higher in China, viz. 14.31% than in India, viz. 7.04%.

During the same period general government consumption expenditure to GDP ratio is very similar in China and India – a little over 11% though the rate of growth is higher in China. Household consumption expenditure has also grown at a higher rate in China (8.38%) than in India (5.03%). In recent times a lot of emphasis is given to inflow of foreign direct investment (FDI) as an engine of growth particularly in the developing and emerging market economies. As is evident from Table 1 while the average net FDI inflow to GDP ratio is higher for China (3.88%) than India (0.60%), the rate of growth of FDI inflow is almost double for India (54.25%) than China (29.05%).

Figs. 1 through 4 plot the growth rates of GDP (or per capita GDP) and some of the components of demand, in levels or in growth rates. Fig. 1 shows that rate of growth of GDP and per capita GDP are by and large higher for China for the period as a whole. But they have

¹ Though some people argue that actual reform had started since mid 1980s.

decelerated in the latter part of the period for China and show a tendency to stabilize around 10%. The growth rates of GDP and per capita GDP for India exhibit cycles around 6% in more recent years. Fig. 2 shows that growth rate of GDP and growth of rate of gross fixed capital formation though move together as a whole, the fluctuation for the latter is much more while it is much more stable for the rate of GDP growth for the two countries. In fact it is often the case that growth rate of gross fixed capital formation decreases (increases)² though the growth rate of GDP shows a rising (falling) trend or even if falls, the extent of the fall is much less. It is more pronounced for China than India. Similar trend is also observed for growth of rate of gross capital formation. Fig. 3 plots rate of growth of GDP and the rate of general government consumption expenditure for both the countries. It is more stable for both the countries – the fluctuations are within a band of 10% to 13% p.a. and the averages very close than the rate of growth of GDP. It may also be noted that the rate of government consumption expenditure and growth of GDP move in opposite direction, particularly in the late 1990s. During post 2000 period the rate of government consumption expenditure for the two countries show a tendency to converge.

The patterns of growth rates of general government consumption expenditure show more fluctuations for both the countries as shown in fig. 4. Starting from a high level of around 20% general government consumption expenditure for China has decreased over the years until 1996, then reversed itself showing a tendency to stabilise around a little less than 10%. India's rate of growth of general government consumption expenditure shows much more fluctuations with no perceptible trend. However, in 2004 it is close to that of China. The rate of growth of household consumption expenditure for India though started with a rising trend until 1996 exhibits a higher degree of fluctuations in the later years. The corresponding growth rate for China, though fluctuates, but within a smaller range. It becomes more stable during post 1997 period and in fact shows a tendency to converge to a little over 5%.

The above discussion clearly reveals that in so far as the stability of components of domestic demand is concerned, China has a clear edge over India. However, it may be noted that a higher level or growth rate of the components of demand may not always translate into higher growth rate of GDP. We also calculated correlations of growth rate of GDP with some of these variables for the two countries and provided in Table 2. As will become clear from the table growth rate of GDP has higher correlation with growth rate of GFCF in China (0.80) than in India (0.14) while it is reversed in the case of rate of capital formation, which is 0.21 for China and 0.44 for India. But the correlation of growth rate of GDP and the rate of GCF is higher for China (0.75) than India (0.44) while the correlation with the growth rate of GCF is very close for both the countries (0.67 for China and 0.61 for India). One may conjecture from this that growth rate of business fixed investment and change in inventories play a more important role in explaining growth rate of GDP in China than in India. The rate of general government consumption expenditure has higher correlation in case of China (0.48) while it is negative in case of India (-0.23). But the corresponding growth rate is strongly correlated with growth of GDP for India (0.40) but very insignificant for China (-0.03) though negative. On the other hand the growth rate of household consumption expenditure is more closely correlated in case of India (0.81) than in China (0.59). Thus we find that while rate of growth of GFCF attains more importance in China the corresponding role is played by the growth of household consumption expenditure in India though with a lower average rate of growth and a lower time path of growth. It is often argued that China had been able to attain a higher rate of growth because it could

² Such fall occurs in early to mid 1990s for China and mid 1990s for India.

attract quite substantial FDI. It is confirmed by a higher correlation of growth rate of GDP with both FDI to GDP ratio and growth rate of FDI for China (0.41 and 0.83 respectively) than for India (0.17 and -0.23 respectively).

**Table 1: A comparison of macroeconomic variables
in the real sector : Averages for 1991 to 2004**

	China	India
GDP growth rate	10.14 (2.18)	5.70 (2.02)
Per capita GDP growth rate	9.10 (2.05)	3.91 (2.06)
Per capita GDP (PPP - \$, 2000)	3388.40 (1139.04)	2216.36 (373.91)
Govt. Cn Exp./ GDP	11.69 (0.86)	11.60 (0.75)
Growth rate of general Govt. Cn. Exp.	9.23 (4.08)	5.19 (4.93)
GCF / GDP	36.73 (2.69)	22.93 (1.35)
GCF growth	11.90 (5.83)	6.86 (7.03)
GFCF/GDP	33.67 (2.80)	22.34 (0.84)
GFCF growth	14.31 (5.51)	7.04 (5.47)
Growth rate of household Cn. Exp	8.38 (2.43)	5.03 (2.14)
Gross Domestic Savings	39.08 (2.03)	21.86 (1.35)
Inflation – CPI	5.68 (7.77)	7.58 (3.74)
Inflation – GDP deflator	6.10 (6.66)	6.86 (3.13)
FDI inflow - GDP	3.88 (1.36)	0.60 (0.35)
Growth rate of FDI	29.05 (54.85)	54.25 (80.72)
Export of goods and services - GDP	23.68 (3.85)	12.13 (2.89)
Trade in Services - GDP	5.29 (0.86)	5.97 (1.61)
Growth of trade in services	21.67 (19.69)	13.65 (7.97)
Dependents to working age population	0.47 (0.02)	0.66 (0.03)

Source: Beck, Demirgüç-Kunt and Levine, (2000), updated upto 2004
World Development Indicators 2006, World Bank.

Note: The figs. in the parenthesis are the SDs.

Fig. 1: Growth rates - GDP and per capita GDP

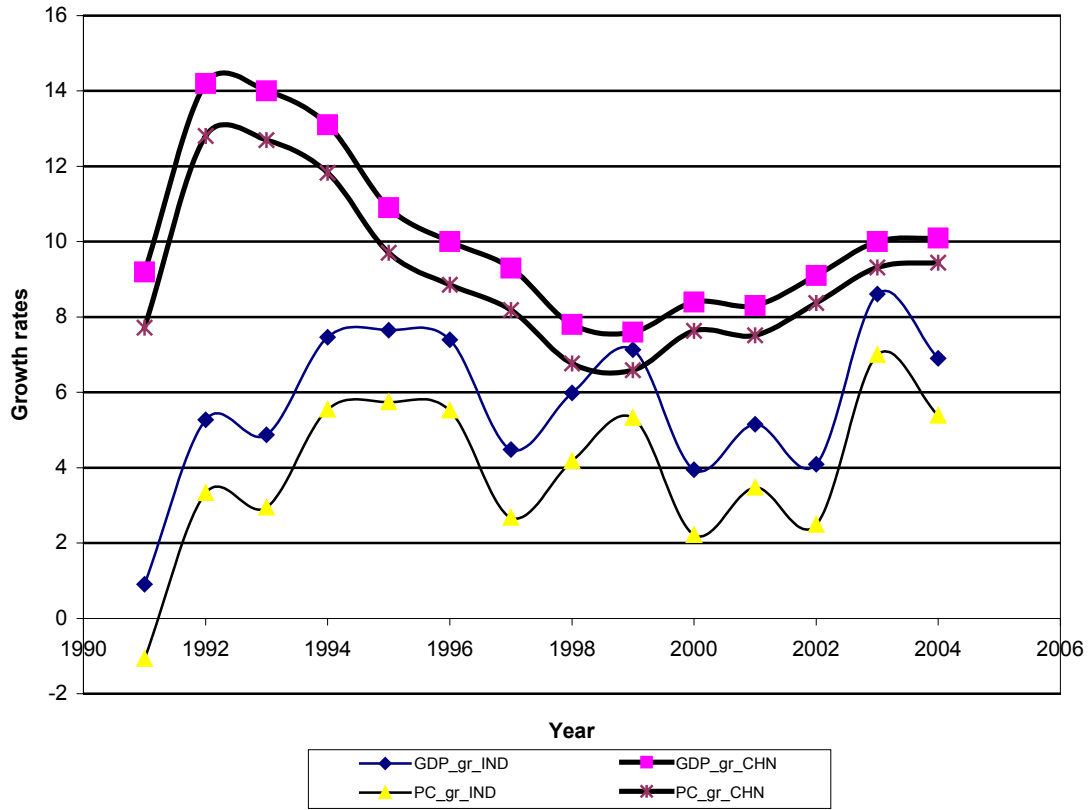


Fig. 2: Growth rates of GDP and GFCF

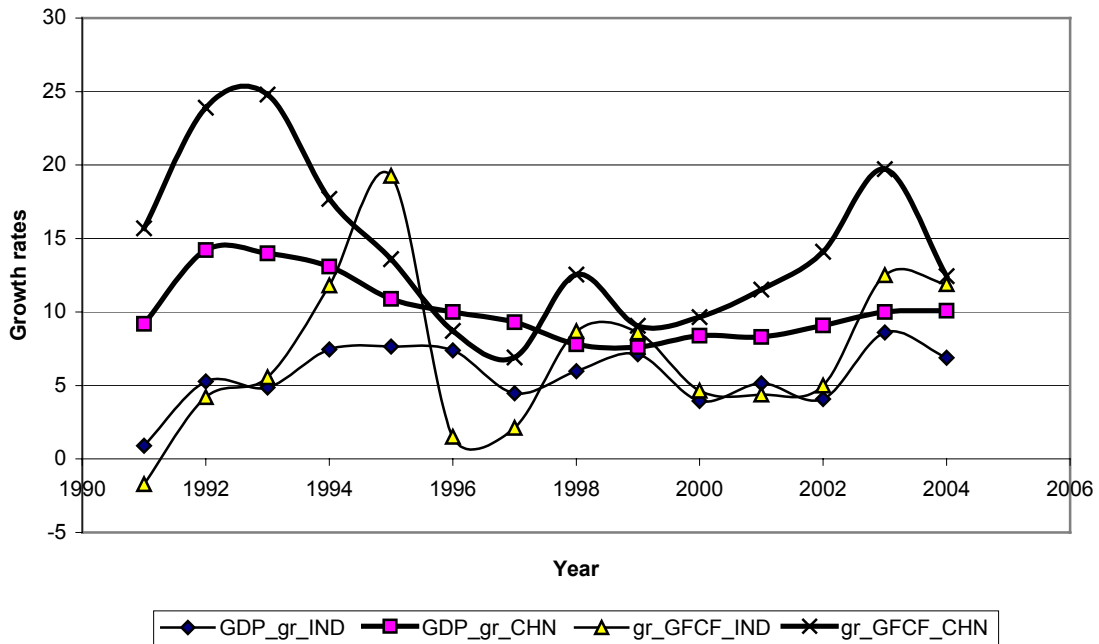


Fig. 3: Rate of growth of GDP and Rate of General Govt. Cn. Exp

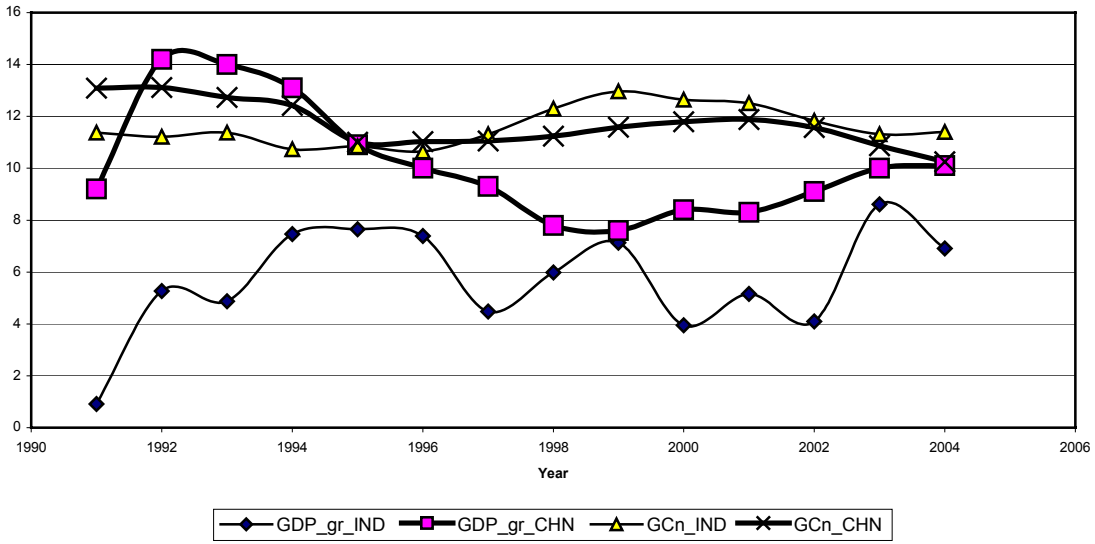


Fig. 4: State of Demand - Growth rates of govt. and household Consumption Exp

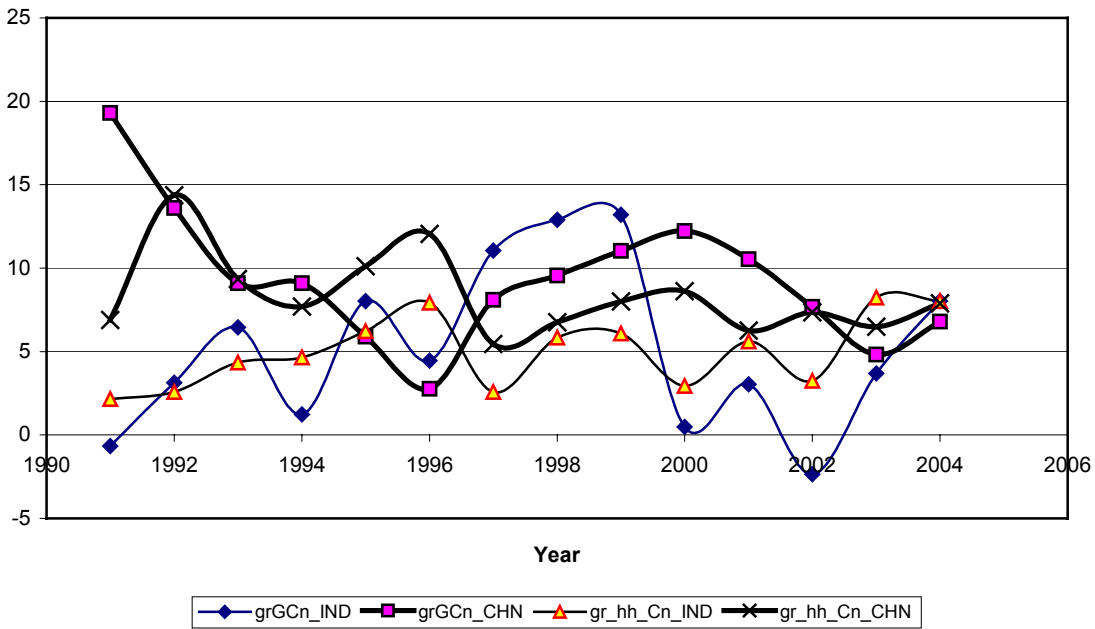


Fig. 5: Rates of Inflation

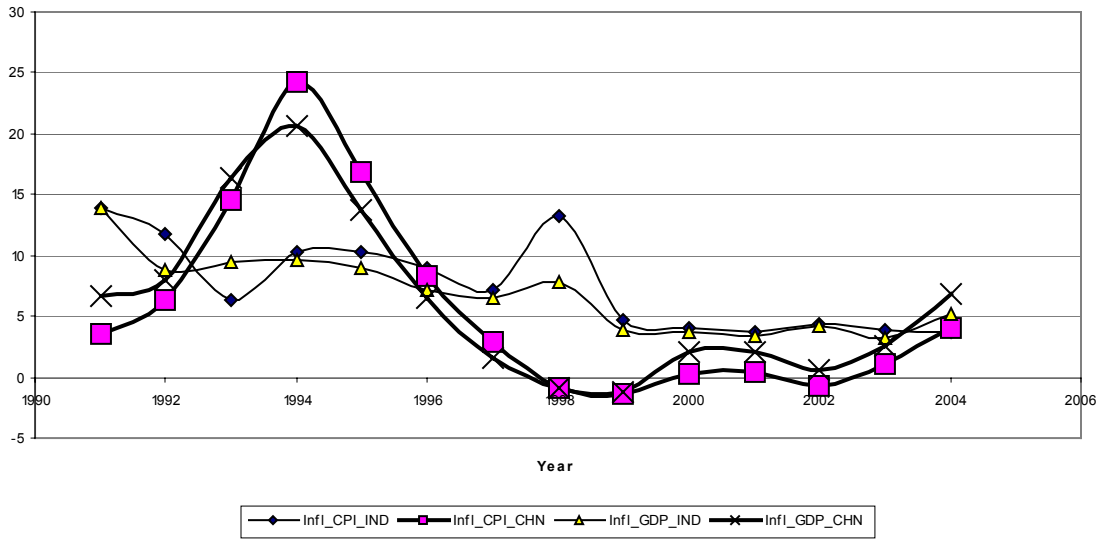


Fig. 6: FDI - GDP and Growth rate of GDP

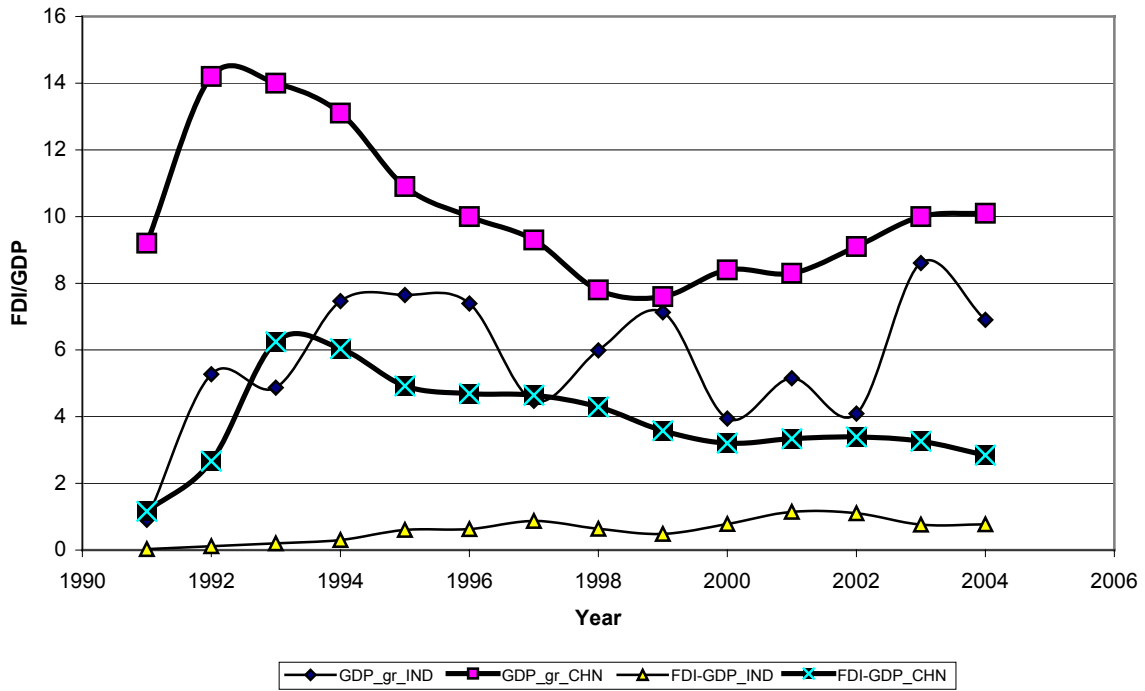


Fig. 7: Per cent Growth rate of FDI

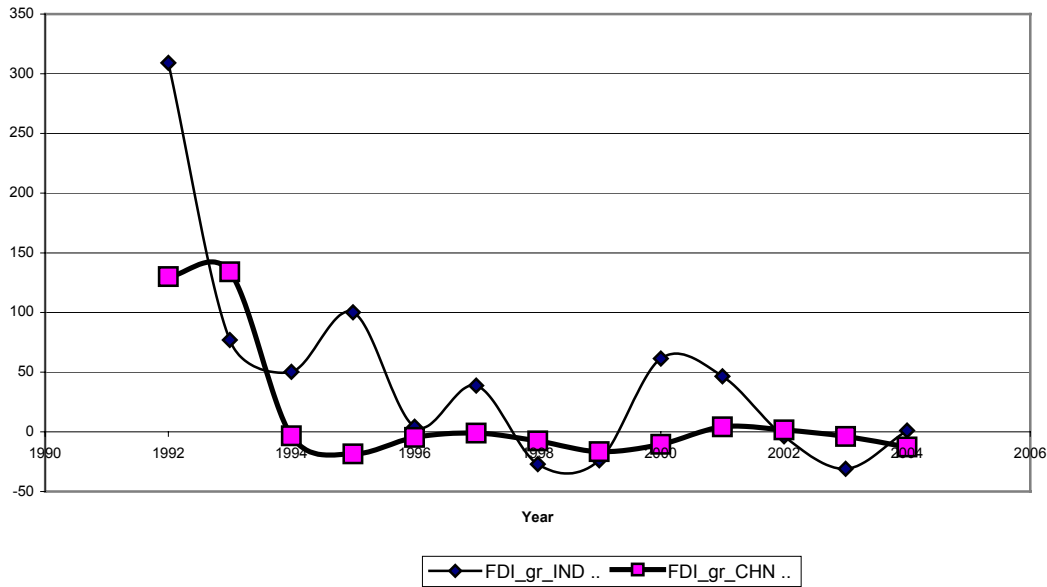


Table 2: Correlations between GDP growth and real macro variables – 1991 to 2004

Correlation between GDP growth and	China	India
GFCF-GDP	0.21	0.44
GFCF growth	0.80	0.14
GCF-GDP	0.75	0.44
GCF growth	0.67	0.62
Genl. Govt. Cn. Exp - GDP	0.48	-0.23
Genl. Govt. Cn. Exp growth	-0.03	0.40
Household Cn. Exp growth	0.59	0.81
FDI-GDP	0.41	0.17
FDI growth	0.83	-0.23

Note: Authors' calculations based on data from World Development Indicators 2006 and Beck et al. (2000).

Table 3 gives the averages for the major indicators for an assessment of the banking sector. To measure the extent of financial development in an economy the finance and growth literature generally employs M3, M2, bank deposits, credit to private sector, bank credit where all of these are expressed in terms of per cent of GDP. As is clear from Table 3 all these ratios are higher for China than for India. We also looked at some other measures of financial depth. Among them the ratio of quasi-liquid liabilities to GDP, per cent growth of M2 and growth of

bank deposits are found to be more for China than India. The ratio of claim on private sector to growth of M2 is very close for China and India. Only the ratio of M3 to bank deposits is higher for India than for China. In this context it may be noted that private credit in China has to be compared carefully with private credit in India. In China since the industrial sector is still dominated by the PSEs private credit also has a large share of credit to PSEs. Given the control of the government over the banks, the nature of such loans is determined by directed credit programme. Thus they should not be treated as a good measure of financial depth.

A comparison in respect of interest rates for bank deposits and lending show that they both are lower in China than in India. Similarly the real interest rate is also lower in China. Net interest margin – the difference between lending rate and deposit rate is higher on the average for India. Bank overhead cost as the proportion of total assets is, however lower in China. But bank concentration – assets of largest three banks as the proportion of assets of total banking sector is higher in China, in fact almost double the figure compared to India. It has, however come down in China in recent times with the introduction of competition in banking business – from 0.96 in 1991 to 0.61 in 2004. But competition in the banking business in India has also lead to a decrease in the concentration ratio from 0.45 in 1991 to 0.34 in 2004. The extent of insurance business measured by the total volume of life insurance premium as the percentage of GDP average at a lower value in China than in India while the corresponding measure shows a better penetration of non-life insurance business in China. A major problem of the Chinese banks has been non-performing loans. It was recognised as a major problem in 1999 when the reform in the banking sector was initiated. We provided average NPL as per cent of loans for the period 2002 to 2004 because non-availability of data for China. Clearly both for the PSBs and the banking sector as a whole China is a poorer performer than India. It is probably because the problem was recognised as a major problem in India a little earlier.

Plot of some these measures of financial sector development reveal a trend in more recent years. Figs. 7 and 8 plot credit to private sector and bank credit to private sector as the percentage of GDP. Both them show a rising trend for China in recent years though in 2004 the trend slightly reverses. These variables remain more or less stable with slight rising trend for India. Growth rates of GDP and M2 are plotted in fig. 9. While growth rate of M2 shows a falling trend in the latter years, it does not show a perceptible falling trend for India. Apparently the growth of M2 and growth rate of GDP do not show any pattern between themselves for either country. Since the pattern is same for M3 also we do not plot growth rate of M3 separately.

Though the banks dominate the financial sector in both the countries (including the NBFIs in India) we also provide averages for some of important measures that reflect the state of development of capital market. The capital market is increasingly becoming important in recent years in both the countries as the source of finance in the future, or at least it is how the policy makers in home and abroad treat them. It has attained importance because of the issues pertaining to corporate governance that is very crucial for the well functioning of the private corporate sector. As is evident from Table 4 the average number of listed companies far exceed for India than in China. In this respect India also exceeds the Asian tigers. But in terms of market capitalisation Indian firms have lower performance compared to the Asian tigers. Hence we also provided average market capitalisation data which is, however higher for India. Stock market trading volume is also higher for India. But the rate of growth of market capitalisation is four times higher in China. Turnover ratio is clearly higher in China. So one can say that liquidity is on an average higher in Chinese stock exchanges than in India. Since stock price index in level cannot reveal much across two countries because of comparability problems, we looked at

growth of stock price index which is, however more in India than in China. A higher growth of stock price index in India can be ascribed to more active secondary market than the general

**Table 3: A comparison of the banking and financial sector
(Averages for 1991-2004)**

	China	India
M3 / GDP	122.78 (8.02)	52.16 (26.68)
M2 / GDP	112.08 (26.87)	48.47 (7.64)
Growth of M2	22.99 (9.46)	16.52 (2.42)
Quasi-liquid Liability / GDP	73.74 (18.45)	36.60 (6.98)
M3 / Bank deposits	119.31 (10.15)	136.61 (7.00)
Bank deposit / GDP	1.05 (0.31)	0.39 (0.08)
Growth of bank deposit	23.91 (8.40)	16.91 (2.41)
Dom. Credit by bank / GDP	112.37 (22.28)	51.14 (5.03)
Dom. Credit to pvt. Sector / GDP	103.06 (14.04)	27.03 (4.32)
DMB* asset / DMB plus Central bank asset	0.97 (0.02)	0.82 (0.09)
Claim on pvt. sector / % growth of M2	89.14 (18.86)	84.09 (23.14)
Bank Deposit rate	5.57 (3.64)	9.68 (2.60)
Bank Lending rate	7.87 (2.42)	14.13 (2.48)
Net interest margin	2.35 (0.53)	3.12 (0.26)
Real rate of interest	1.92 (4.5)	6.83 (1.70)
Bank overhead cost / Total asset	1.36 (0.29)	2.67 (0.22)
Bank concentration	0.77 (0.15)	0.39 (0.04)
NPL to Loans – PSB [@]	20.43	9.43
NPL to Loans – Banking sector ^{\$}	18.07	8.8
LIC Premium / GDP	0.97 (0.73)	1.45 (0.48)
Non-LIC / GDP	0.76 (0.14)	0.53 (0.04)

Source: Same as Table 1 for the other variables, for NPL data source is China Banking Regulatory commission for China and Trends and Progress of Banking in India for India.

Note: * DMB stands for deposit money bank. \$ Chinese data includes PSB and Joint stock banks.

@ for the period 2002 to 2004, hence SDs are not provided.

Fig. 7: Credit to pvt. Sector (% of GDP)

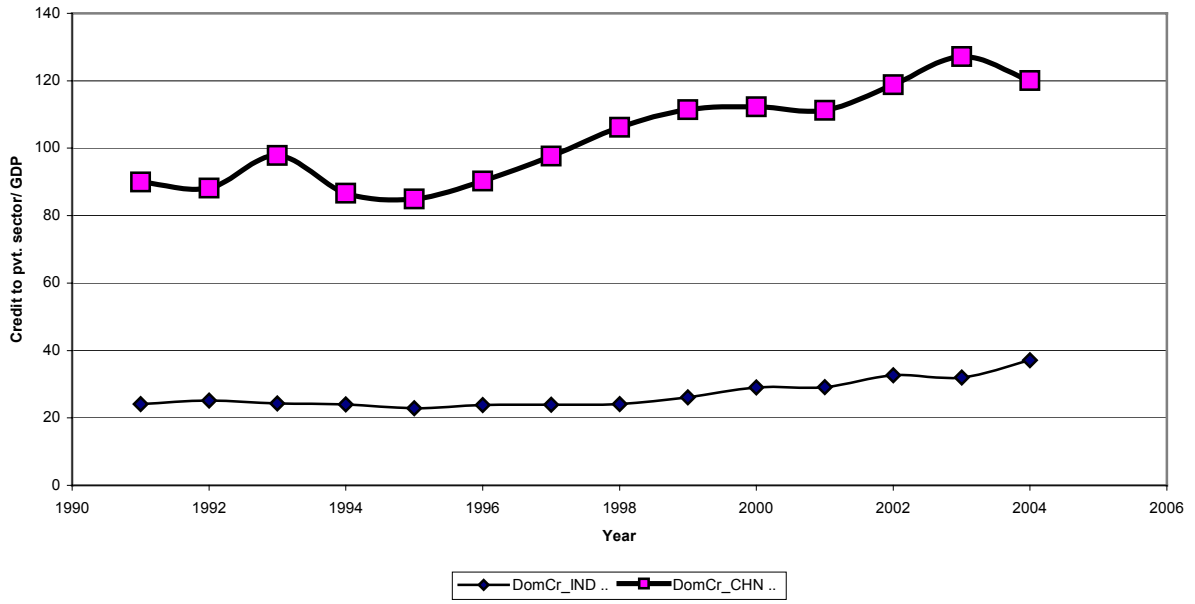


Fig. 8: Bank credit to pvt. Sector (% of GDP)

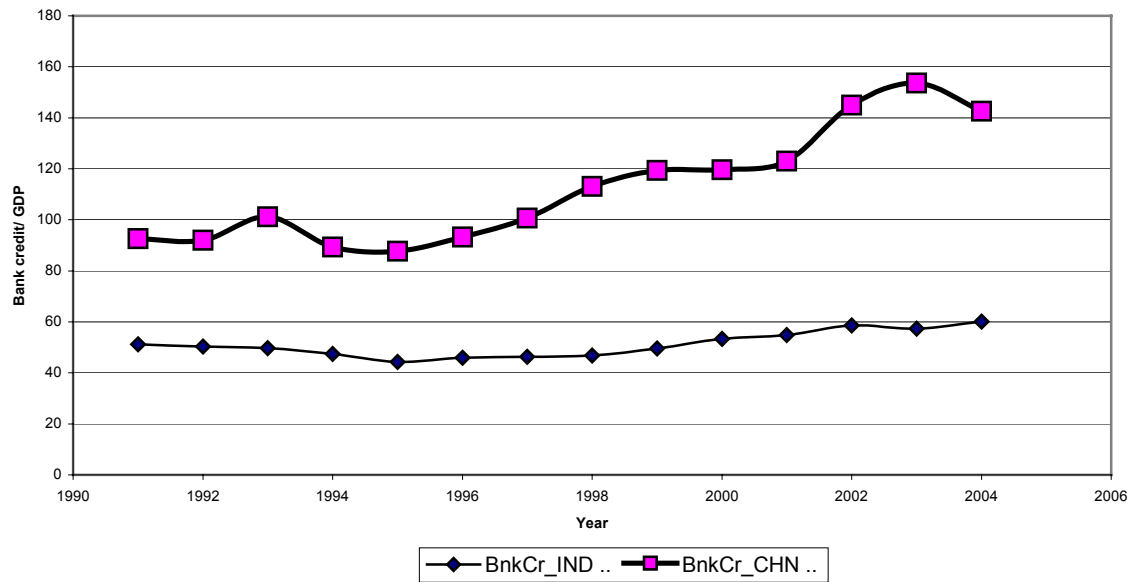
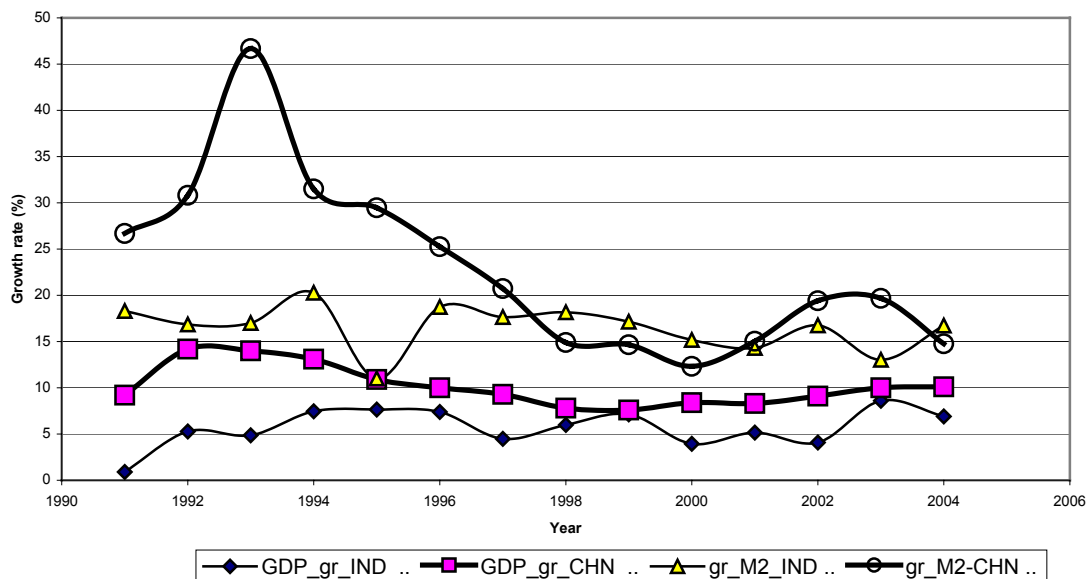


Fig. 9: Growth rates of GDP and M2



development of stock market activities as a source of industrial finance.

The other segment of the capital market is the debt segment. The private bond market is thought to play an important role in the financial systems architecture as a cheap source of finance as well as a safer mode of household saving. In this respect China is far below by international standard, but way ahead compared to India. However, the public bond market has expanded more in India with a higher market capitalisation as per cent of GDP than in China. A higher growth rate of market capitalisation in China shows that it is moving towards a higher level. Though portfolio investment (not shown in table) has been more than FDI in India, total gross private capital flow as per cent of GDP is almost double in China. In one respect India is, however in a better position in international finance – composition of external debt. Short term debt as per cent of total external debt is nearly one fourth in India than in China. It puts India less vulnerable to potential outflow of external debt when a shock occurs.

We show the role of financial variables in the growth of the real sectors in the two countries in Table 5. Since we cannot do an appropriate econometric exercise because of dearth of data, we only looked at the correlations between growth rate of GDP and various measures of financial factor. The correlations should be cautiously interpreted. They do not mean any causality, but only an association in the sense that as growth occurs how the financial variable moves or does not move. Growth of GDP and growth of credit to private sector and growth of bank credit are positive and around a moderate value in case of India. But the correlations are negative in case of China. Comparing figs. 1, 7 and 8 one jumps to the conclusion that while growth rates of GDP for China is stabilising towards a lower level bank credit or credit to private sector show a rising trend. But there is no rising trend either for GDP growth or for credit to private sector and bank credit for India. However, the correlation between GDP growth and growth of M2 is very high in China and positive while it is negative for India. It may be

interpreted in the following way. With the growth of GDP income increases and so the savings in the form of bank deposits in China also rises, so the correlation is positive. But for India with the growth of income savings increases in the form of other financial instruments so that the correlation is negative.

Table 4: Development of capital market – 1991 to 2004

	China	India
No. of listed dom. firms	723.64 (483.96)	4980.86 (1241.13)
Market cap./ GDP	22.17 (15.59)	33.54 (10.08)
Growth of Market cap.	96.53 (209.98)	24.54 (39.18)
Stock mkt. Trading Vol / GDP	25.33 (16.45)	36.17 (29.37)
Growth of stock mkt. trade	196.29 (515.35)	42.15 (94.34)
Turnover ratio [@]	151.14 (73.12)	82.62 (68.51)
Growth of S&P EMDB index ^{\$}	10.59 (48.23)	14.78 (39.07)
Pub. Bond mkt. cap / GDP	9.87 (5.94)	21.02 (3.83)
Growth of Pub. Bond mkt. cap	26.77 (11.52)	9.97 (11.93)
Pvt. Bond mkt. cap / GDP	6.63 (2.66)	0.73 (0.35)
Growth of Pvt. Bond mkt. cap	20.28 (12.55)	14.09 (34.61)
Gross pvt. capital flow / GDP	8.71 (2.78)	4.50 (1.76)
Short term debt to total debt - external	22.76 (11.72)	5.03 (1.60)

Source: Same as in Table 3.

Note: @ indicates data for 1992 to 2005, \$ indicates data for 1996 to 2005.

Rate of investment in fixed capital in China is more strongly correlated with both bank credit and credit supplied to the private sector. It is because of the fact that the high rate of investment has been made possible by the supply of bank loans because either the government appropriates directly as a substitute for public debt or as the source of finance for PSEs (credit to PSEs is included in the private credit). But increased general government consumption expenditure in China lowers the credit to private sector. However, the relation is positive in case of India, possibly because increased government consumption expenditure does not crowds out credit to private sector but gives a boost to demand side so that the demand for credit by private sector also increases.

The comparison between growth rate in real sector and development in stock market shows that there is quite a strong correlation between market capitalisation and GDP growth which is very close across the two countries. But stock price index is more strongly correlated with GDP growth in India than in China, but it is reversed with the growth rate of stock traded. Bank credit and market capitalisation – both normalised by GDP has a negative correlation for China but is positive for India. The same pattern is observed for bank credit and turnover ratio. One may conclude that as the reliance on stock market increases importance of bank credit falls. A positive relation between bank credit and stock price index however is positive with same values for the two countries. This makes the previous conclusion a suspect.

Table 5: Correlations between real and financial variables

Correlation between	China	India
GFCF & Credit to Pvt. sector	0.56	0.29
GFCF & Credit by banks	0.60	0.12
Genl. Govt. Cn. Exp & Credit to Pvt. sector	-0.49	0.25
GDP Growth & Growth of credit by banks	-0.18	0.26
GDP Growth & Growth of credit to pvt. sector	-0.02	0.24
GDP Growth & Growth of M2	0.86	-0.26
Bank credit to pvt. sector & M2-GDP	0.95	0.89
GDP Growth & Growth of stock mkt. Cap.	0.56	0.49
GDP Growth & S&P EMDB Index ^{\$}	0.12	0.69
GDP Growth & Growth of stock traded	0.59	0.26
Bank credit & Mkt. Cap.	-0.37	0.32
Bank credit & S&P EMDB Index ^{\$}	0.20	0.20
Bank credit & Turnover ratio	-0.65	0.84

Source: World Development Indicators, Beck, Beck, Demirgüç-Kunt and Levine, (2000), updated upto 2004 and authors' calculations.

Note: \$ Data pertains to the period 1996 to 2004.

Taking stock of the situation in general we can conclude that the state of financial sector development is generally very high in China, at least in terms of the standard measures, but it bears little correlation with the growth in the real sector. But in case of India, though the growth

rate is on an average lower the finance-growth nexus does play a stronger role. This is at least in conformity with the banks and financial institutions if not with the stock market or debt market.

3. Prospect of future growth and the evolution of the financial system

If the past growth is any indication for the prospect of future growth then China has a clear edge over India. The Chinese growth has come more from accumulation which shows no sign of deceleration in China and no significant sign of improvement in India. This is confirmed by a higher rate of savings enjoyed by China. The standard measures of financial development put China in a favourable situation compared to India. However, our analysis shows that the development of the financial sector in China has played very little role to attain the growth in the real sector. It is also confirmed by existing study in the field. For example, Hao (2006) shows that China's financial development has led to substitution of loans for state budget appropriation, but the loan expansion has not contributed to the growth process since supply of bank loans is inefficient. Liang and Teng (2006) shows that though there exists a co-integrating relationship between financial development and growth, the causality runs from growth to financial development that invalidates the finance-growth nexus hypothesis. But the role of financial development is found to enhance growth in the real sector in case of India. Existing studies mentioned in the previous section confirm this.

The role of financial institutions is likely to change in China within the next few years for a number of reasons. The government policy aims at reforms in the banking and financial sector to make them more competitive, market oriented, accountable and independent. It is in this context that a comparison between the two countries should be made to judge the potential of the role of the financial institutions to lead the growth in the real sector. When reforms were started in India in 1991 the banking sector was one of the worst sectors characterised by low profitability (in fact Indian banks as a whole were loss making), dominance of public sector (less than 10% banking business were in the private sector), control of the government in banking business by way of directed credit programme, administered interest rates etc. After a decade of reforms Indian financial system has moved out of the regime of 'financial repression' and has attained a very high level of competitive standard. Profitability has increased considerably, private sector participation in banking business has increased, partial privatisation of public sector banks by way of floating of shares has increased accountability. So far as non-performing loans (NPL) are concerned, Indian banks – both public and private – are doing very well.³ It may be noted that the private sector banks in India, particularly those established after 1991 have taken a lead role in the growth of the banking business. In the process the PSBs, though lost market share, have however been able to raise productivity and efficiency.

A comparison with Chinese banks on the other hand shows that they are far behind their Indian counterpart. The Chinese banking sector is highly concentrated, in fact four commercial banks dominate the banking industry (Podpiera, 2006, Dobson and Kashyap, 2006). They have very little experience of handling banking business, particularly for evaluation and monitoring of lending operations. They were by and large operated on the instructions of the government for lending operations in the form of directed credit programme. This has led often led to high NPL, sometimes as high as 22% even in 2004, is a characteristic feature of Chinese banks. Earlier the Government bailed them out by means of budgetary support. But with the introduction of a pro-

³ The data provided by **Trends and Progress of Banking in India** published by the Reserve Bank of India for various years reveals that since 1995 (when NPL data became first available), NPL has decreased from as high as a level of 26% in 1995-96 to 7.2% in 2004 for all the scheduled commercial banks.

market strategy NPL has turned into a big problem (see Maswana, 2005, Goldstein and Lardy, 2004). Dobson and Kashyap (2006) shows that Chinese PSBs are still lending to the industrial PSEs whose loans were written off prior to the beginning of reforms in financial sector. These PSEs seem poised for another round of losses because the era of closed domestic market is gone and there is stiff competition from the newly established private enterprises which are better suited to meet the new challenges.

Competition in the banking business in China especially from the foreign banks after the implementation of WTO in Dec. 2006 would pose a very difficult problem for the domestic banks and financial institutions. Competition will lead to a lowering of interest rates, so that inefficient banks will further make losses. Also if the foreign banks lend to the more profitable sector while the public sector and domestic private sector banks are forced to lend to the relatively less profitable sector then it is another blow to the banking industry. Such an eventuality cannot be ruled out given past experience of policy directives from the government. The competition within the banking business, particularly between the PSBs and the private banks in India, on the other hand, appears to have attained a stable level.

The reform measures have made the Indian banks and financial institutions efficient, but this is not without its vice. One of the key elements of reforms in banking is to do away with the directed credit programme. In order to attain profitability and efficiency the banks in India have shied away from lending to industry to avoid risky business projects. In such a case small and medium enterprises (SME) face the problem more than their larger counterparts. Banerjee, Cole and Duflo (2003), Banerjee and Duflo (2002), Jhaveri (2003) have discussed the problem of finance for SMEs in India. The SMEs and new business ventures have virtually no access to capital market so that the growth in this sector is hampered. But the corporate sector does not face the problem of outside finance because they take the path of equity financing which is also cheaper and being listed and with a larger asset base they enjoy a better credit worthy status. So the banks are interested to lend them more though they have alternative cheap source of finance, viz. capital market. Bagchi, Das and Moitra (2002) and Das and Moitra (2004) have discussed these issues. The banks have been investing in government securities which is safe and in an era of market determined rate of interest, has a very good return. As a matter of fact they invested more than 12% on average in government securities in 2004 than what is required by statutory liquidity ratio.⁴ Similar problems are also being faced by the agricultural sector in India which has a larger share in GDP than in China.

Directed credit programme is still a general rule for the Chinese banks. Often the government in the past and even now issues directives to the public sector banks to lend to SMEs and state owned enterprises so that they are not forced to close down in the face of loss. In fact it has acted as a distributional mechanism to reduce unemployment in China.⁵ With the restructuring of the public sector in China, unemployment has increased substantially. In order to reduce unemployment the pressure on banks for lending to meet distributional goals of the government may end up with a higher NPL. But on the other hand, a rising unemployment will have an adverse effect upon the growth of income by way of deficient demand. In this way other macroeconomic variables, such as savings will be affected adversely that has been playing a

⁴ The law on statutory liquidity ratio states that the banks in India are to invest 25% of their demand and time deposits in government or other approved securities (municipal bonds, PSE bonds etc.). This is over and above cash reserve ratio. In pre reform days when it was 33% banks were reluctant to invest in it, but now it has come down and the banks has clear preference for the government securities.

⁵ This point is particularly emphasised by Podpiera (2006), Dobson and Kashyap (2006), Prasad and Rajan (2006).

crucial role for the growth process by accelerating investment. So there is a dilemma in this context.

As noted earlier China's rate of saving and investment has consistently been higher than India and has given it an edge. A major source of higher aggregate saving in China had been a very high rate of surplus generation by the public sector enterprises (PSE). It had been made possible because there was no competition from the private sector and goods prices were administered by the government in China (see Maswana, 2005). But with an increasing private sector and reduced importance of PSEs this cannot be a viable method in the future. The performance of Indian PSEs had been miserable in this respect, but household saving is much higher in India. Also the private sector in India unlike in the past has turned into net savers so that at least the large corporates are investing quite a substantial amount from their retained earnings (see Patnaik and Shah, 2006).

We have already discussed that the development of the capital market, either equity or bond had not been adequate in order to become a major source of industrial finance in the near future. This is true about both the countries. New instruments in the form of options, futures and commodities futures market have come up in different forms in both the countries, but a general problem is thin nature of the market transaction. Even though reforms were initiated in India in 1991 a very tiny fraction of household savings (a little more than 4%) is invested in the stock market despite the fact that many institutional developments have taken place for the stock market in India.⁶ These developments include institutional, such as electronic trading, more stringent regulatory framework, autonomy of capital market from the government department and new innovations in instruments, such as options and futures in the trading arena.⁷ It is the active secondary market transactions with a speculative character that is the source of recent stock market boom in India. The boom has been accentuated by the surge of foreign portfolio investment which, however is quite fluid. The introduction of the stock market in China is relatively new and is still in its infancy. Thus the primary emphasis of financial development for accelerating growth lies in banks and financial institutions. The major obstacle for the development of capital market in India or China is really posed by the inadequate legal structure leading to imperfect regulatory mechanism that is instrumental for building the confidence of the small investors.

A lower rate of household saving in China may revise upwardly in the future because China has a dependency ratio of 42% while India has a dependency ratio of over 62% as on 2004 (see Table 1). Such demographic factor is likely to work in favour of China as it had been successful in the implementation of population control measures than India. It is unlikely that India would be able to achieve population control in the near future and achieve a lower dependency ratio. But in a recent study Horioka and Wan, (2006) on China has shown that the age structure of population plays no significant role in the generation of household savings. Given the historical rates of savings, it is unlikely that the rates will increase in either of the countries with the development of financial system. With the introduction of new financial instruments there is likely to occur a reallocation of savings between different instruments, but that will not affect aggregate savings rate in either case.

In general the present state of financial architecture prompts us to conclude that while the problem of Chinese banks are envisaged to be the efficiency of lending operations, the problem

⁶ See **Handbook of Statistics on Indian Economy** published by the Reserve Bank of India for various years.

⁷ See **Indian Securities Market Review** published by National Stock Exchange and **Report on Currency and Finance** published by Reserve Bank of India for various years.

for India is found to be adequate lending to the industrial sector because of risk aversion. In the absence of a developed capital market the growth process is likely to suffer in either of the two countries. But so far as the state of financial system is concerned India has a better potential for growth.

So far we concentrated on the development of financial systems architecture. Now we turn to the relationship between government expenditure, financing from bank and financial institutions and the growth process. As we argued earlier that a higher growth in China has been achieved by way of a higher rate of investment, particularly public investment in infrastructure. Table 6 provides the averages for some of the key indicators in infrastructure for the two countries. For all these China performed better than India. A major source of financing for these projects had been appropriation of bank loans. But in the future either an alternative source of financing has to be found or the public investment is likely to decrease. This is because of the fact that with the growth of domestic private sector their demand for loan rises. Thus as bank loans are used to finance private industry there is a consequent fall in the financial resources for the public sector. An alternative is market borrowing by the government. With increasing financing need of the government the interest rate on government securities will start rising so that people will shift from bank deposits to government securities and the deposit mobilisation by the banks will fall. In short a kind of crowding out phenomenon may occur. Since government securities are safer than lending to the private sector the banks may revise their portfolio in favour of government securities as the return on them is likely to rise when more securities are marketed. Similar things have happened in India during the post reform period when returns on government securities became market determined.

A clear edge for China in fiscal front has been a very low government debt as the proportion of GDP (7.21%) over India (54.43%). It has also helped avoid the rising interest cost in the current as well as in future period. But the advantage is likely to disappear soon for the reason stated above. Another alternative is deficit financing. But this increases the possibility of a higher rate of inflation. So again China is likely to face a situation where its main source of growth is likely to suffer.

On the other hand it has often been argued that a low rate of public investment in India since 1980s and accentuated since the reforms were initiated had led to a fall in the profitability of investment in the private sector (see Marjit et al, 2005 on this issue). So the growth process has been impaired. A reduction in the public provisioning of infrastructure - in rail and road, electricity as well as in oil and gas or even in agriculture – had suffered because of the policy of low fiscal deficit so as to control inflation. In this respect India is already facing the problem.

To circumvent the problem government policy had been directed to attract private investment in infrastructure – both domestic and foreign. Various incentives by way of tax cut etc. to the private sector did not yield the desired result because of a low rate of private return though the social return is very high. This has not been very successful in India and unlikely to succeed in China to make up for the reduced public investment. As the existing statistics shows in lower panel of Table 6, except for transport the rate of private investment in energy and telecom in China is lower than in India. This is prior to any tendency in the reduction of public investment in China has set in. Once public investment decreases the private investment is likely to suffer in China.

The problem is likely to further accentuate in China once the government is also forced to cut down expenditure on general public services, economic services, fuel and energy, transport, education and health (see Table 7). For all of these the expenditure in China has remained at a

lower level than in India. It is better fund management that they have contributed more in the growth process. But a decrease on expenditure for the same is likely to hinder the growth.

Apart from selling government securities or deficit financing the other option is raising the tax revenue. A look at upper panel of Table 7 reveals that average tax to GDP ratio is quite low in China than in India. But on closer inspection one finds that tax on goods and services is already very high in China. So further raising it may affect future growth of demand. The tax revenue from direct tax is lower in China, but the possibility of increasing it also opens up the possibility of affecting demand of household sector. It may also adversely affect the investment in private sector if income of private sector is heavily taxed. The tax on international trade is also quite low in China than India. But any rise in tax on international trade, particularly exports, will affect the export led growth strategy of China. In the fiscal front India has been performing quite satisfactory measured by rate of fiscal deficit, but it has already affected the growth process.

Table 6: Growth of infrastructure and private investment in infrastructure

	China	India
Growth of rail lines	0.963 (0.85)	0.098 (0.51)
Growth of total road networks	3.96 (8.66)	3.05 (7.85)
Growth of air transport - freight	18.08 (11.94)	3.84 (17.64)
Growth of air transport – regd. Carrier departure	16.14 (14.45)	8.26 (12.85)
Growth of electricity production	9.06 (3.53)	5.99 (1.81)
Pvt. Investment in energy / GDP	0.25 (0.19)	0.28 (0.21)
Pvt. Investment in transport / GDP	0.17 (0.19)	0.07 (0.04)
Pvt. Investment in telecom / GDP [#]	0.18 (0.19)	0.50 (0.33)

Source: World Development Indicator, World Bank.

Note: # indicates data pertains to the period 1997 – 2004.

The higher rate of growth of India in recent times and the future prospect lies in a higher productivity of capital in India. China's achievement of a higher growth rate is more due to higher rate of accumulation. It is also true that China is better poised with a larger accumulated capital stock even if its future investment slows down. But once it slows down diminishing marginal productivity will set in. This will hamper aggregate growth. An export led strategy of the past is likely to affect adversely China in the future by way of Balasa – Samuelson effect (see Ito, 2006 on this issue). No such threat is posited in case of India.

So far inflow of FDI is concerned, we have shown earlier that the rate of growth of FDI has been higher in India though China has a higher base of FDI. However, FDI as a source of growth is not same across the countries. It works better in China. In fact its performance in case

of India is miserable invalidating the conventional wisdom. But it has definitely been instrumental in accumulating foreign exchange reserves. That has various positive spill overs on the economy. With a higher foreign exchange reserves China has an advantage over India. China is in fact using it for financing of infrastructure. But a mounting foreign exchange reserves has its own problems as well. To insulate the economy in the event of a foreign exchange crisis both India and China invest foreign exchange reserves in US government bonds with a very low rate of return while a higher rate of interest is paid on the inward capital flow to attract them to the

Table 7: Govt. revenue and expenditure– An analysis of components

	China	India
Tax revenue / GDP	5.63 (1.88)	9.19 (0.64)
Tax rev. on goods & services / GDP	53.59 (25.45)	30.15 (2.16)
Direct tax revenue / GDP	14.85 (8.99)	24.18 (5.12)
Tax on international trade	6.94 (6.57)	20.31 (4.00)
Cash deficit / GDP	2.42 (1.12)	3.05 (1.13)
Central govt. debt / GDP [@]	7.21 (2.05)	54.43 (6.07)
Exp. on General public services / GDP	6.03 (2.21)	8.80 (2.28)
Exp. on Economic affairs / GDP	2.04 (0.68)	2.53 (0.76)
Exp. on Fuel and energy / GDP	0.30 (0.30)	0.33 (0.17)
Exp. on Transport / GDP	0.12 (0.08)	0.25 (0.10)
Exp. on Health / GDP	0.02 (0.01)	0.24 (0.07)
Exp. on Education / GDP	0.19 (0.03)	0.34 (0.09)

Source: World Development Indicators, World Bank and Govt. Finance Statistics, IMF

Note: @ China's data covers 1991 to 1999 only.

domestic economy. Rakshit (2003) has shown that it has a sizable cost for the Indian economy. Similar argument also applies for China. Thus with a lower level of foreign exchange reserves India has to incur a lower cost in this respect.

4. Conclusion

The paper has discussed the role of financial development in the growth process in a comparative framework for China and India. We concentrated our analysis on the period since the reforms in the financial sector had been initiated. Instead of evaluating the role of financial

development in the two countries in a full-blown econometric model we adopted a strategy of trying to identify the factors in the real and financial sectors that have been found to move together with the growth process in the two countries. Then we tried to interpret the presence or absence of such association. We found that different factors have played different roles in the growth processes in the two countries. Rate of gross fixed capital formation played more important role for China. So far the development of the financial sector is concerned the standard measures point out China to have an advantage over India. However, it is also confirmed as in other studies that it is not the development of financial system that has affected the growth positively, but financial development has followed growth in China. But financial development in India, even if found to be lower compared to China by standard measures, has a stronger role in the growth process.

The implication of the above is that India is in a better situation than China so far the growth potential is concerned by way of a more efficient financial system that is likely to evolve in the coming years to suit the changing global scenario. In a forward looking analysis we discussed the issues of the macroeconomic implications of sustaining the growth process in China and enhancing it in India on the financial sector. A major obstacle for China may come by way of an increasing public debt or increased level of deficit financing. In this respect India is already in a bad shape. But China's advantage is likely to decrease and lower the growth process to a level close to India.

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