Chapter – III

Financial Liberalisation : An Overview of Money Market Activities

3.1 Introduction

The Indian Money market is a huge and significant part of the nation's financial system in which thousands of crores of rupees are traded every working day. The Money market, as its very name suggests, that a market where money is bought and sold. The basic characteristic of this market is; it is not a single market but a collection of markets for several different instruments. There is a close interrelationship that links all the distinct instruments. The nature of this market is wholesale---the trades are big, and participants are almost always dealing for some big institutions. The main players involved being government, banks, financial institutions and business firms. Individual plays an insignificant role in this market. There is a very small possibility of defaulting on commitment. The money market is restricted to instruments of the short term nature i.e. limited to time-periods of less than one year. Almost every economic unit is it in a financial institution, a business, a corporation or a governmental body, has a recurring problem of liquidity management, mainly because the timing of the expenditure rarely synchronized with that of the receipts. The most important function of the money market is to bridge this gap. A supplier of funds to the market can be virtually anyone with a temporary access of the funds. The users of the fund in the money market are manifold too. It is used by banks to meet their temporary reserve requirement, by business firms for the purchase and shipment of inventories, by government to bridge the gap between tax receipts and its expenditure.

Although one of the greatest achievements of our financial system over the last forty years is the decline in the relative importance of the money lenders and the increase of the institutional sources of money. The average turnover of the market in India is Rs. 15000 crores daily. While this is about 3 percent of the total money supply in the Indian economy and 6 percent of the total funds that commercial banks have lent out to the system. This figure implies that 1.5 percent of the total annual GDP of India gets traded in just one day. So money market is a very important segment in the financial system and there is a very thin line distinguishing the money market from some of the other integral parts of the financial system.

Thus the section aims to analyze the impact of financial liberalisation on growth and efficiency of money market. We considered call, Treasury bills (T-Bill), Commercial Papers (CPs) and Certificate of Deposits (CDs) market that are the major instruments of money market in

exclusion of others so as to make the analysis manageable. Very specifically, an attempt will be made to analyze the following issues:

i) Does experience of money market support the claim of neo-liberalists that financial liberalisation promotes in 'widening and deepening' of market?

ii) What is the nature of relationship exists between different segments of the market?

iii) What are the development implications of the functioning of the market in the post liberalisation period?

3.2 The Call Money Market

Call money market of our country accounts for nearly two-thirds of the total money market turnover. It is the most visible market where day-to-day surplus funds are traded. In India it is an interbank market and interbank tradings accounts for more than 80 percent of the total transactions. More than 50 percent of funds coming from State Bank of India; other than banks, major players include the discount and finance house of India (DFHI), unit trust of India (UTI), and life insurance corporation of India (LICI) etc. Most banks however, including the foreign banks are lenders. The need to borrow arises, either to meet seasonal stringencies or the statutory liquidity reserve (SLR) or cash reserve ratio (CRR) requirements.

In the post reform period, particularly after 1997-98, a number of policy initiatives added vigour to this market. Aggressive participation of primary dealers supported by refinancing facility of Reserve bank of India (RBI), increased role of corporate sector and mutual funds helped in the stupendous growth of the market. (See Fig. 3.2.1)

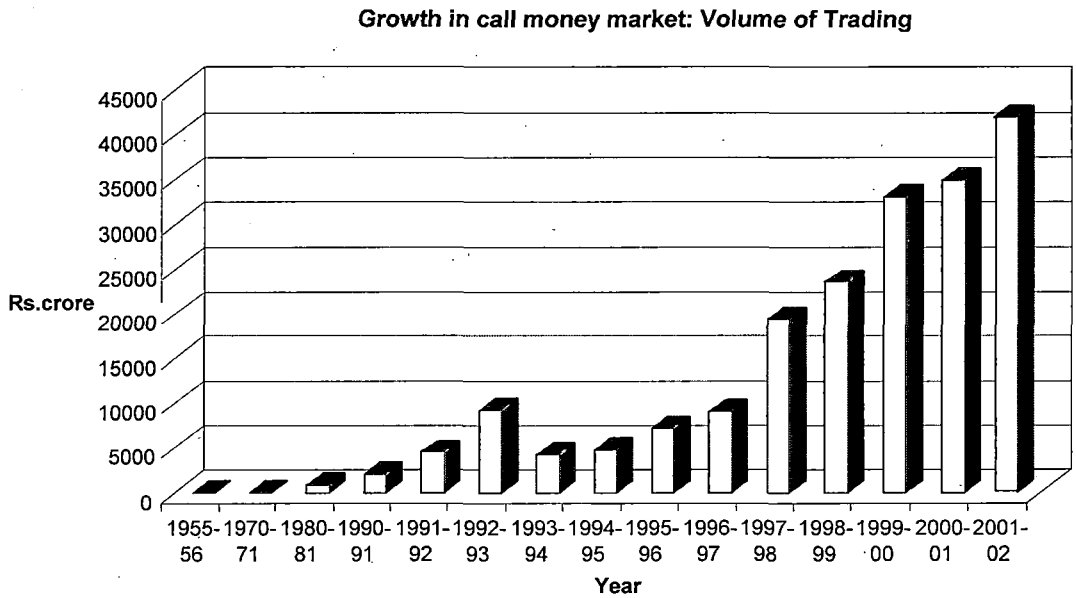

Fig. 3.2.1

Despite of all these developments, it still lacks the virtues of a competitive market. The interest rate of the market is highly volatile because everybody in this market reacts in the same way, whenever, there is need to borrow, the entire market seems to be chasing money. Similarly when one has fund to lend every one seems to lending.

In effect this high rise in interest followed by a fall is often described in the theory of financial economics as mean-reversing phenomenon. Since banks have to meet their reserve requirements at the end of every fortnight, it indulges in heavy borrowing during these days and we witness a big spur in the call money rate. Thus money market interest rate of our country, alike many others developed economies shows a calendar day effect associated with the maintenance period of reserve requirements. The issues that follow: Is there any spill over effect of gradual reduction in reserve requirements on gyration of call money rate of our country? Do the mutual funds and corporate sectors that can lend money in this market were successful to exploit calendar day effect? Banks under constant pressure to show profit after liberalisation, it is alleged, often indulge in arbitrage operation – borrowing from call market and investing in forex market to earn quick money, what is the implication of this operation on call rate? In sum, an in-depth evaluation of the current behaviour of otherwise less discussed call market is essential for an impassionate evaluation of the impact of regime shift on this market.

Movements of CRR and Call Rates (1991-2003)

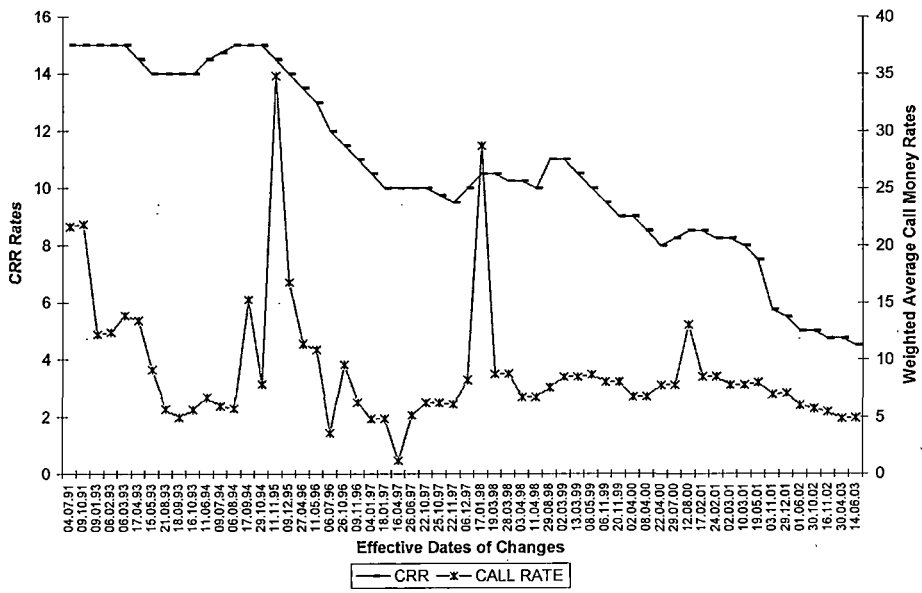

Fig 3.2.2

Fig.3.2.2 shows, effective dates of changes in cash reserve ratio (CRR) and changes in the weighted average call money rates. Gradual reduction of CRR from 15 percent to 4.5 percent during the period 1991 to 2003 is followed by a fall in call rate from nearly 21.15 percent to 5.86 percent. There were few 'spike' movements in the call rate during the year 1994, 1998 and 2001. This was due to arbitrage operation by the banking sector in the foreign exchange market (See Money Market Review, Various issues of E.P.W.).

Figure 3.2.2 depicts a positive co-movement between the Cash Reserve Ratio (CRR) and call rate. We have tried to capture in the regression equation the extent of relationship between these two variables. We have considered only the change in CRR on various effective dates running from 1991-2003 and call rates on that particular date are regressed to measure the extent of relationship between these two. CRR is considered as independent variable because the change in the CRR is generally tuned by government to adjust the credit policy. As part of reserve requirement, changes in CRR can influence the borrowing and lending pattern in the call market – so the call rate.

Call Rates=1.321+0.734 CRR $\quad \overline{R^2}$ =0.16 $\quad$ DW 1.46

T (0.532) (3.294)* $\quad$ F=10.84*

Our regression results also support the claim of positive and significant nexus between the two. Co-efficient value of CRR showing the variability of almost 74 percent with a significant t and F value at 5% level of significance.

A series of conclusion may be drawn from our descriptive analysis and the findings from regression equation.

(a) When banks operation explain nearly 74% percent of movement in call rate and if demand and supply of bank money in the call market show a patterned behaviour centering around reported friday, then the episode may be considered as calendar day effect.

(b) Gradual reduction of CRR offering more stability to call money market – the condition that satisfies the promise of liberalist. Lower the reserve requirement lesser is the volatility of money market. (See Brunner and Lown 1993).

(c) Excepting bank, other participants play a marginal role in the call market.

(d) Lower the required reserve (CRR), lesser will be borrowing of banks from call market that with all probabilities influence both borrowing and lending rate of banks.

3.3 Certificate of Deposits and Commercial Papers

For the purpose of this writing we are intentionally ignoring any detailed discussions on commercial papers (CP) and certificate of deposits (CD) market that is often being treated as the

best solution to meet surpluses and deficit of cash position of corporations – which may be treated as one of the basic functions of any efficient financial system. These markets are free from informational problem as the issuers of these instruments are highly rated institutions. But it lacks the basic quality of a competitive market because buyers and sellers are limited in number. These marketable credit instruments as substitute of bank finance are less popular in Japan and Western Europe but play an important role in United States. Gradual popularity of CPs and CDs in India is an encouraging development for an economy that has promised to develop a competitive money market. While CP is issued by corporation with high credit rating, CD by banks and financial institutions. The market has an intricate relationship with call market and banking business that deserves attention for an understanding how different segments of our financial system gradually becoming more integrated and to explain the reason of shift in demand of these two instruments.

Table 3.3.1: Average Amount Outstanding

(Rs. crores)

Year	CP	CD
1992-93	na	8361
1993-94	2333	8443
1994-95	2755	6261
1995-96	439	14271
1996-97	349	14991
1997-98	2793	9405
1998-99	4585	6506
1999-00	7014	1861
2000-01	6751	1155
2001-02	7927	965
2002-03	8268	1224

Source: Handbook of Statistics on Indian Economy, RBI, 2003.

At the time of excess liquidity, banks can park funds towards CP at interest rates usually higher than call rates, similarly, when banks face tight liquidity condition; it finds CD as an appropriate instrument to raise funds. Conversely, when liquidity condition eased, as it is in the current time, CDs outstanding amongst would decline.

3.4 Government Debt Market

Call and Treasury bill markets are highly integrated, as almost same set of handful of big investors with nearly identical investment behaviour operate in this market. Government Treasury Bills (T-Bills) are virtually one of the most important money market instruments around the world. It is short term money market instruments issued by Reserve Bank of India (RBI) on behalf of the government to meet the challenges of short term liquidity and to bridge the gap of

temporary budget deficit. Financial economists prefer to treat yield on T-bill as risk free rate of return that influences the interest rate structure of an economy. Unlike most other money market instruments, it enjoys the support of an active secondary market and is used by a variety of participants ranging from commercial banks, corporations, mutual funds etc. Introduction of Repurchase Agreement (Repos) added further liquidity in this market.

There are three categories of treasury bills, they are 'on-tap', 'ad-hoc' and 'auctioned'. The on-tap T-bills can be bought from the RBI at any time at an interest yield of 4.663 percent; but with the deregulation of interest rates, they have lost much of their relevance. The ad-hoc T-bills are created to replenish the government cash balances with the RBI. They have a maturity period of 91 days, but can be redeemed prior to the final maturity date.

The auctioned T-Bills, first introduced in 1992 April, are the most active of the three categories. In effect they are the only one among three categories which can actually be called an active money market instruments. At present, RBI issues T-Bills of two maturities, 91 days and 364 days. While the 364 days T-Bills were introduced through a fortnightly auction basis in April 1992, the weekly auctions of the 91 days T-Bills were started in January, 1993. Typical auction size for the former ranges from Rs.300crs to Rs.1000crs, whereas for the latter, the range is Rs.100crs to Rs.500crs. In the auction, the RBI receives the bids from various participants and issues the bills subject to some cut off limit.

Table3.4.2: Average Amount of Outstanding in Treasury Bill Market (Rs. Crores)

Year	14 - T Bill	91 -T Bill	182 – T Bill	364 – T Bill
1992-93	-	950	1050	6478
1993-94	-	3043	-	8994
1994-95	-	3052	-	11970
1995-96	-	5513	-	3184
1996-97	-	6433	-	5190
1997-98	2425	3588	-	15567
1998-99	625	4132	-	8242
1999-00	631	2025	1167	13483
2000-01	396	1800	1300	13417
2001-02	50	4842	433	18244
2002-03	-	6617	-	23282

Source: Handbook of Statistics on Indian Economy, RBI, 2003.

Apart from T-Bill, dependence of government on long term dated securities has also increased tremendously to meet the challenge of stupendous budget deficit.[1] Infact, there is a buoyancy of the fixed income securities market in India despite almost a secular decline in its yield rate.

Table3.4.3: Range of Yield and Turnover of Government Securities

Year	Range of Yield by Maturity (percent)			Turnover in Government Securities Market (Rs. billion)		
	Under 5 yrs	5-10 yrs.	Over 10 yrs	Outstanding	Repos	Total
1995-96	13.25 – 13.73	13.25-14.00	-	176	928	1272
1996-97	13.40 – 13.72	13.55-13.85	-	599	254	1229
1997-98	10.85-12.14	11.15-13.05	-	1185	208	1857
1998-99	11.40-11.68	11.10-12.25	12.25-12.60	1431	381	2272
1999-00	-	10.73-11.99	10.77-12.45	4053	757	5393
2000-01	9.47-10.95	9.88-11.69	10.47-11.70	5091	1091	6981
2001-02	-	6.98-9.81	7.18-11.00	11385	3359	14744
2002-03	-	6.65-8.14	6.84-8.62	13781	5635	19416
2003-04	4.69	4.62-5.73	5.18-6.35	16852	9547	26399

Source: Reserve Bank of India, October 2004

Fiscal Deficit, Yield and Issues on Macroeconomic Management

Market related interest rate of government bond is good in the sense that it reminds government – borrowing is now costlier, use it efficiently, discipline fiscal policy or face the music. But what is important in our economy – mounting budget deficit, nearly unbearable government borrowing that too at a high cost contributing in greater budget deficit and economy is now truly vulnerable. (Ahluwalia 2002, Acharya 2001, 2002) World Bank on various occasions has expressed concern over excessive accumulation of debt even when it is domestic debt and called for urgent measure to tackle these problems. However, experience of other developing countries (See Fig. 3.4.3) that relies on free economy is no exception, debt and interest on debt growing at a faster rate than does the real economy, and if it continues to grow unchecked it may undeniably adversely affect long run growth path of poor countries. (See Pinto and Zahir 2004) Thus following many other scholars we believe prudent management of public finance is prerequisite for the success of financial liberalisation (McKinnon 1989, World Bank 1989).

[1] Reduction in custom, excise and other duties along with award of fifth pay commission or simply "cost of liberalisation" contributed immensely in the rise in budget deficit.

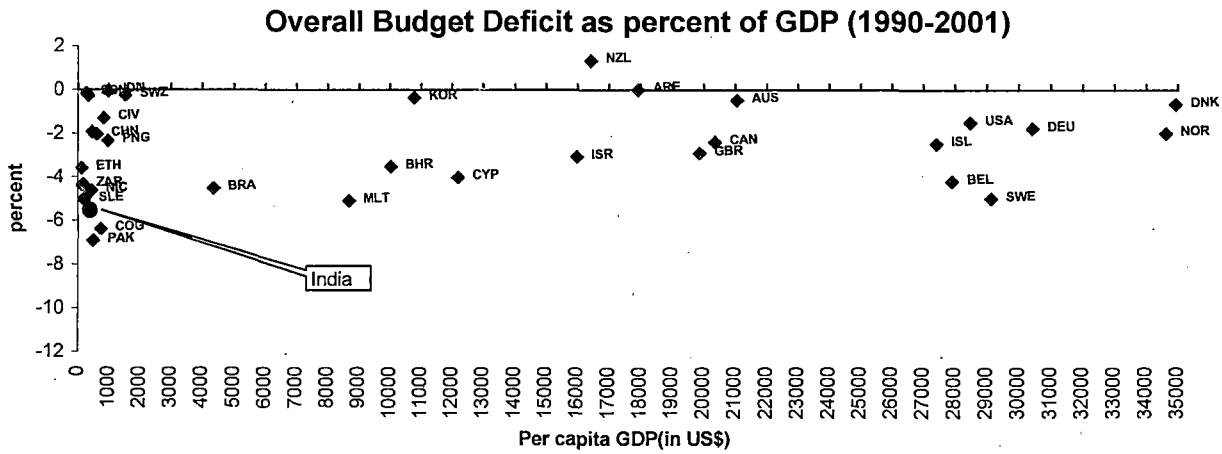

Fig. 3.4.3

Control of fiscal deficit is possible either by suppressing interest rate or by increasing tax, or by the efficient use of borrowed funds so that real growth rate of GDP remains equal to or more than the cost of government borrowing. What happens if cost of government borrowing is higher than economic growth rate? Under this unfortunate circumstance a continuing unpaid deficit implies that the debt must grow to become an infinite multiple of GDP.

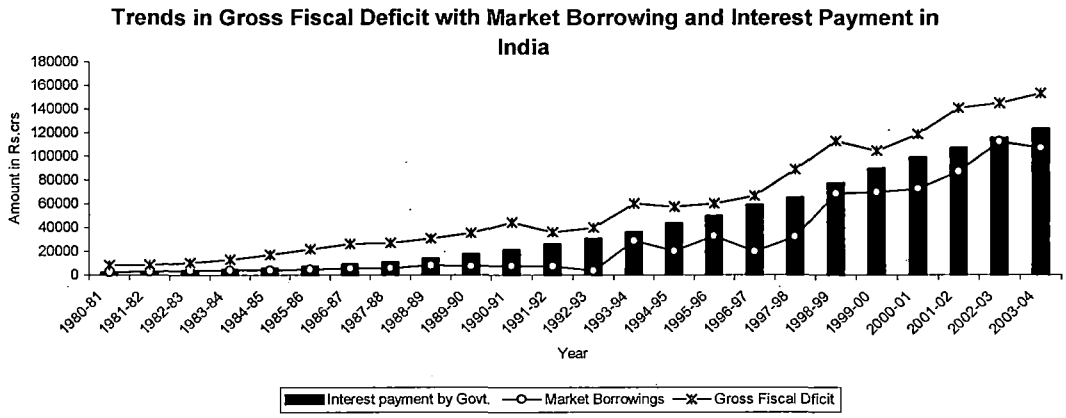

Fig 3.4.4

Even a cursory glance of the yield on government security would reveal some typical feature that apparently does not satisfy the basic foundation of financial economics. In an efficient market framework, information about any determinants of interest rate should be quickly incorporated into observed rates. Thus when information about the size of the deficit released, a relatively quick impact on the interest rate can be anticipated. This is simply because that an increase in current or future deficit leads to an increase in yields on government security in

anticipation of higher level of deficit financing. In a rational expectation theory, an announcement of higher future deficits will lead to a current increase in interest rates in anticipation of future financing (Reinhart and Sack 2000). The government can accumulate ever growing debt through perpetual deficit financing has a mathematical parallel in the proposition that prices can rise continually in a self fulfilling speculative bubble.

In India, booming fiscal deficit, rising market borrowing (See Fig. 3.4.4) but dramatic fall in yield of government bond (See Fig. 3.4.5) is an interesting feature for study of any serious researchers of development economics. Even if rate of inflation is considered then too this level of interest rate is unexplainable by any theoretical framework.

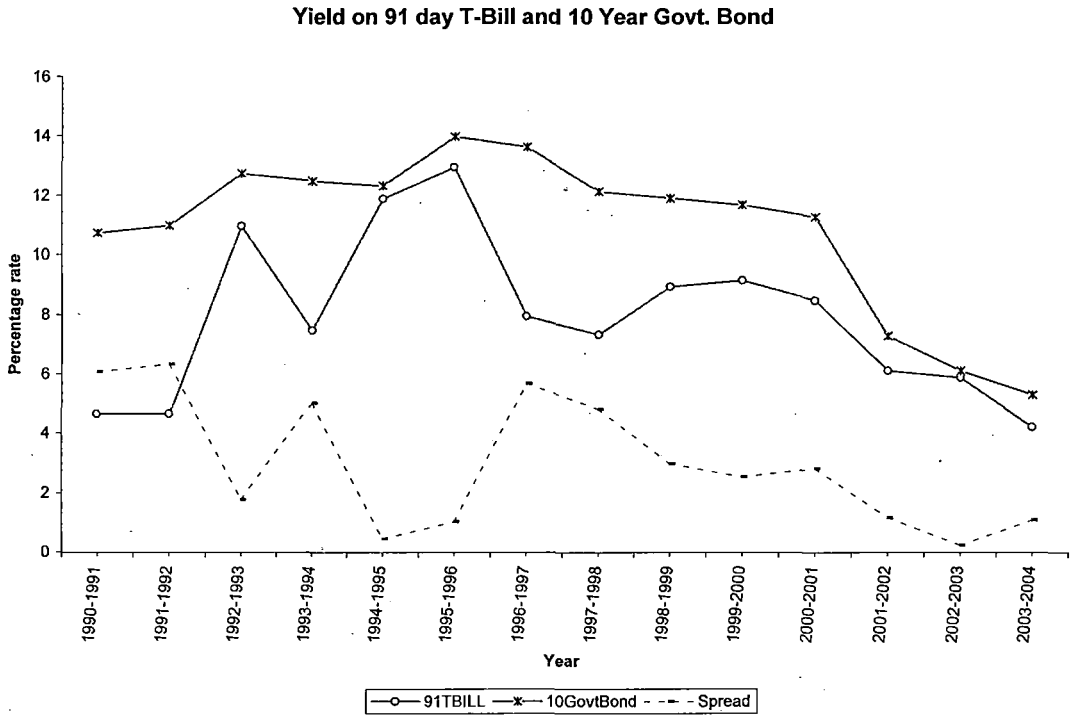

Fig 3.4.5

One plausible explanation of this trend is the failure of rational expectation theory in a market primarily dominated by few big players who are either government owned or controlled entities. Thus banks who own nearly 85 percent of government bond suffering from the problem of excess liquidity (Marjit 2005), with no options available for diversification of portfolio, compelled to invest in government bond irrespective of interest rate otherwise funds will remain idle. At this stage, however, we are ignoring the impact of the present trend on bank efficiency, though it is undeniably an important issue for the development of a well functioning financial system.

Another interesting characteristic of government securities (See graph 3.4.5) is nearly indistinguishable return between long and short term bond. Theory of finance recommends investors require compensation for the risk of longer maturity periods and the present trend suggests that little premium being available for long waiting period.

Table 3.4.4: Weighted Average Yield and Maturity of Outstanding Stock (Maturity in Years and Yield in Percent)

Year	Weighted Average Yield	Weighted Average Maturity	Weighted Average Maturity of Outstanding Stock
1995-96	13.75	5.7	NA
1996-97	13.69	5.5	NA
1997-98	12.01	6.6	6.5
1998-99	11.86	7.7	6.3
1999-00	11.77	12.6	7.1
2000-01	10.95	10.6	7.5
2001-02	9.44	14.26	8.2
2002-03	7.34	13.83	8.86
2003-04	5.74	14.94	9.78

Source: Reserve Bank of India, October 2004.
NA: Not available

At the bottom, this anomaly in interest rate allowing our government to borrow at a lower weighted average cost, particularly when long term borrowing dominant over short term.

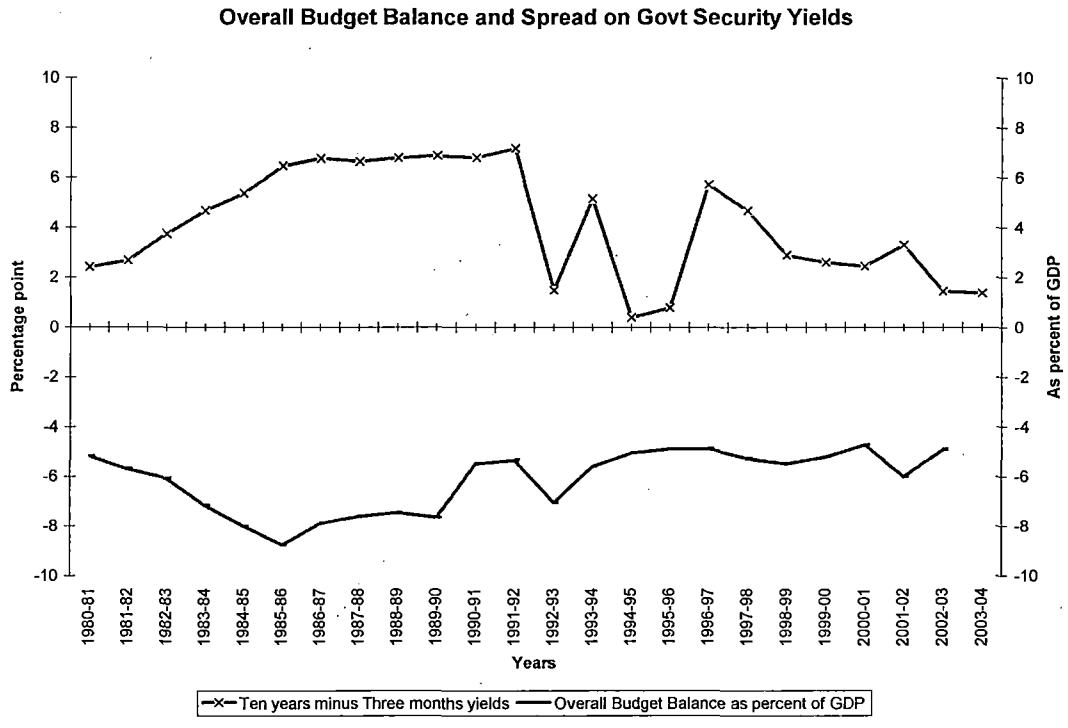

Fig 3.4.6

Fig. 3.4.6. shows in controlled regime (1980-91) with deterioration of fiscal balance, as usual, yield curve also steepened reasonably – the trend that satisfies theoretical framework explaining relationship between these two variables. Experiences of developed economy such as U.K. and Germany are in consonance with the trend of regulated regime of our country. (See Fig 3.4.7)

General government Budget Balances and Interest Spreads on Government Debt, 1980-2000[a]

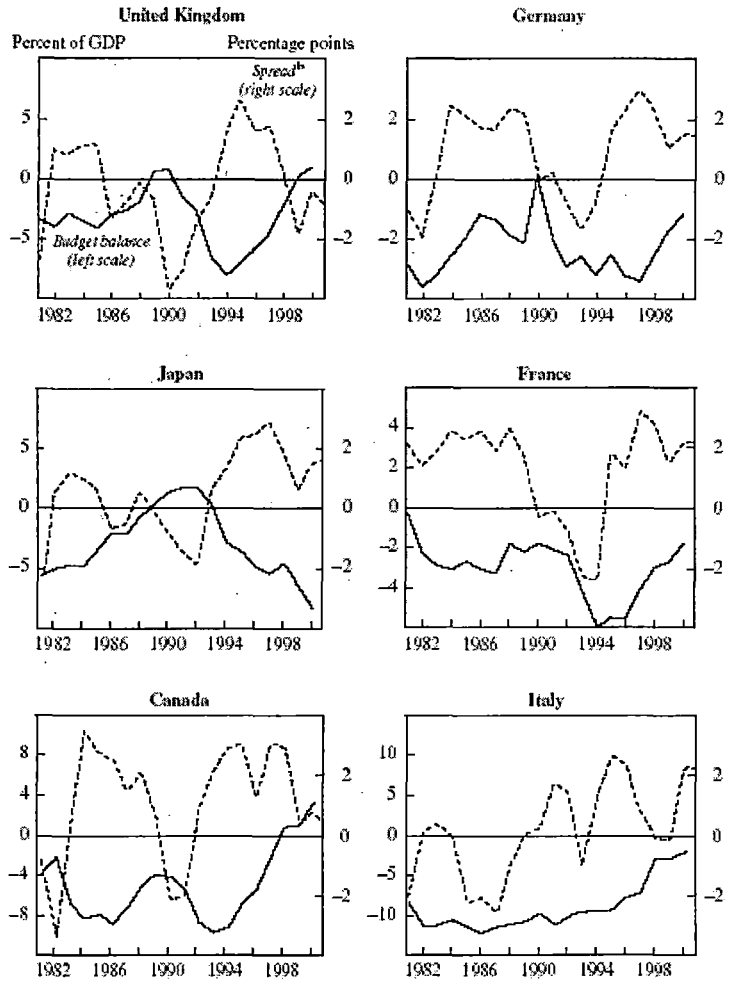

Fig. 3.4.7

Source: Vincent Reinhart and Brian Sack ;(2000) "The Economic Consequences of Disappearing Government Debt." Brookings Papers on Economic Activity, 2:2000.

a. Though the second quarter. Budget data for 2000 are projections.

b. Ten-years yield minus the three-month yields.

Interestingly, yield curve defying the argument "higher the deficit, more is the cost of government borrowings" depicts opposite trend in the post reform period (1991-92 to 2003-04) that is close to the experiences of Italy and France (See Fig. 3.4.7). From these contradictory evidences, we suggest there is no such straight forward relation between deficit and yield on

government securities. Several studies suggest that change in inflation expectation, risk premium, global interest rate, pattern of capital inflows also influence the yield curve. To go beyond this thought provoking theoretical discussions, we prefer to offer some facts to explain this post reform typical phenomenon. From mid 1990s maturity period of debt issued by government has more than doubled from 6.6 years to 14.9 years and spread measured in terms of differences between short term government bond (T-bill) and dated securities nearly vanished. This anomalies in interest rate inspiring government to issue low cost dated securities virtually without paying any premium for long maturity (R.B.I. 2001). The practice facilitating government to borrow at cheaper rate after regime shift.

Indian experience shows (See Table 3.4.5) that a significant part of the pressure of the primary deficit is absorbed by the excess growth over interest rates. However, this rate of absorption varies over time and current experiences are quite discouraging.

Table3.4.5: Decomposition of Debt Accumulation Relative to GDP

Year	Cumulative changes in			Relative impact of cumulative primary deficit	
	Debt-GDP Ratio (b)	Primary deficit – GDP ratio (PD)	Growth and interest rate Differential (g – r)	Increase in Debt – GDP ratio Δ (PD)	Absorption by Growth – Interest differential Δ (g – r)
1970-71 to 1979-80	0.07	26.18	26.12	0.25	99.75
1990-91 to 2002-03	14.67	39.09	24.42	37.53	62.47
1996-97 to 2002-03	19.55	19.77	0.22	101.14	- 1.13
1951-52 to 2002-03	46.21	168.94	122.73	27.82	72.18

Source: Rangarajan and Srivastava (2005).

During the 1970's, as high as 99.75 percent of the impact of the cumulative primary deficit was absorbed by the growth-interest differential leading to a negligible increase in the debt-GDP ratio. But in post reform period (1990 onward) only 62 percent of the cumulative primary deficit was absorbed by growth-interest differentials. Thus the extent of absorption of interest cost after regime shift is lower than controlled regime (99.75 percent) and the long range average (72 percent) running through 1951-52 to 2002-03.Condition deteriorated dramatically due to negative growth interest differential in 2001, 2002 and 2003, which is reflected by a negligible portion of absorption during the period 1996-97 to 2002-03[2] (Rangarajan and Srivastava, 2005).

[2] Growth-interest rate differential and its impact on Debt GDP ratio is also clear from the table no. 3.4.5

At the bottom, in the post reform period, government borrowing to meet budget deficit increased tremendously and both short and long term bond market were active enough to support the trend. But the story behind this debt market buoyancy may frustrate market economists. With limited demand for private investment (Marjit 2005), banks victim of excess liquidity are investing massively in low yielding government securities in excess of reserve requirements. Thus the theory of crowding out of private investment appears irrelevant in the present context.

For public policy it is important to address the following two issues : can government spending help economy to overcome prolong demand deficiency and depress private investment ? (See Rakshit 2004). Can we sustain with this excessive debt burden ? It is difficult to provide any categorical answer of the questions. It will partly depend on – how government dis-savings will act as a catalyst to boost demand, raise household disposable income and savings so that long range growth of GDP will be sufficient to meet cost of borrowings.

Conclusion

Undeniably financial liberalisation contributed in widening and deepening of Indian money market. The market is now much active, more integrated than it was in the repressed regime that satisfies the claim of liberalist. While some developments are obviously encouraging, there are some areas that deserve attention. Some of our observations are:

(a) Denomination constraint does not allow retail investors to participate in the market. Most money market instruments are beyond the rich of retail investors in both primary and secondary market. Market is mostly dominated by banks or other government controlled institutions thus it lacks the flavor of competitive market.

(b) There is a general trend of declining interest rate both in call and government bond market. Call rate from late 1990's gradually stabilized due to massive reduction of CRR. The stabilization of call rates may also be attributed to better fund management of banking and corporate sector.

(c) Functioning of CP and CD market has a close relation with call money market and liquidity condition of banking system. Decline in outstanding CD market turnover partially reflects the excess liquidity of the banking system.

(d) While government borrowing is increasing to support growing budget deficit, aggregate cost of borrowing by government shows a declining trend. However, productive use of borrowed funds is an important issue for better macro-economic management that is at the core of financial liberalisation theory.

Appendix I. Country List

Country Code	Country Name
ARG	Argentina
AUS	Australia
BEL	Belgium
BGD	Bangladesh
BHR	Bahrain
BRA	Brazil
CAN	Canada
CHE	Switzerland
CHL	Chile
CHN	China
CIV	Cote d'Ivoire
COG	Congo.Rep.
CYP	Cyprus
DEU	Germany
DNK	Denmark
ETH	Ethiopia
FIN	Finland
GBR	United Kingdom
GRC	Greece
IDN	Indonesia
IND	India
ISL	Iceland
ISR	Israel
ITA	Italy
KOR	Korea, Rep.
LKA	Sri Lanka
MLT	Malta
NIC	Nicaragua
NLD	Netherlands
NOR	Norway
NPL	Nepal
NZL	New Zealand
PAK	Pakistan
PNG	Papua New Guinea
SWE	Sweden
SWZ	Swaziland
THA	Thailand
USA	United States
ZAR	Congo, Dem. Rep.

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