FINANCIAL EXUBERANCE:
Savings Deposits, Fiscal Deficits and Interest Rates In India

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Financial Exuberance

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There have** been significant financial sector reforms **through the 1990s.** One of the **major policy changes affecting the financial markets has been reduction in government's recourse to claims on loanable funds through statutory liquidity ratio as well as high levels of Cash Reserve Ratios. The central government has switched to market borrowing to finance its fiscal deficit on a larger scale than before. There is a general move towards market determined rates and flows in' the financial sector. One area where administered rates are still important is the small saving instruments. The government sets these interest rates and mobilises funds for meeting the fiscal deficits at the centre and more so at the state level. If these rates were to be determined by the markets, ivhat would happen to the interest rates in general. One argument' is that the small saving rates act as a floor to the deposit rates of the banking sector and hence also determine the lending. rates., If the overall balance of demand and supply of loanable funds is such that interest rates can be lower, the small saving rates do not let that emerge, Further, as. interest rates decline, there would be significant gains in economic growth. This. paper i's an attempt to examine this viewpoint. We develop a monetarist model of the economy and assess the implications of alternative meth' ds of financing the fiscal deficit of the government, central and states combined. The results support the view that overall interest rates would decline if the small saving rates were to be liberalised but the gains in economic growth would not be dramatic.

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I Introduction

The 1990s saw major institutional reforms in the Indian financial sector. The stock markets. commercial banks, non-banking financial institutions, insurance companies all saw phases of major restructuring and reforms. One underlying expectation of these reforms was to provide Indian enterprises access to funds at globally competitive interest rates or cost. While the nominal interest rates have declined, real interest rates have remained high during the decade. Figure 1 shows that real interest rates, using consumer price index for industrial workers as a measure of prices, have in fact been higher for the period from mid-1998 onwards as compared to the period from 1993-93 to 1997-98. Explanation for high real interest rates has varied from the large fiscal deficit to the remaining vestiges of the administered interest rate regime reflected in the interest rate on small savings (SS). Mohan (2000) argues that the necessity of financing high fiscal deficits forces the RBI to impose high reserve ratios on bank deposits, which in turn makes it necessary for banks to have higher lending rates. Patnaik (2000.2001) suggests that for a given money supply a fiscal deficit can raise the interest rate by raising the demand for money, but this linkage would beeffectivconly if bank credit is supply-constrained. He also justifies the high real interest rates prevailing in India on the grounds that investment in third world countries is exposed to higher risk relative to developed countries; therefore the real rate of return has to be correspondingly higher in order to attract and retain international capital.

One of the more extreme positions in the current debate has been put forward by Surjit Bhalla. In a series of papers and newspaper articles, he has argued for liberalisation of interest rate regime. Two of his papers [Bhalla 2000 and Oxus Research and Investments 2000] provide the fullest statement of his position. The arguments can be summarised in terms of five key points. First. Indian interest rates -despite official disclaimers – are administered rates where a floor is set by the administered nominal rates on SS – mainly postal savings deposits – and provident fund (PF) schemes. The nominal interest rate on these from 1985 was 12 per cent, and despite declining inflation in the 1990s. these rates were kept fixed till February 1999, when the SS interest rates were reduced to 11.5 per cent and in January 2000 the interest rate on both SS and PF schemes was reduced to 11 per cent with the 200 1 Budget further reducing it to 9.5 per cent.

Nevertheless. the real interest rates have

remained high. As an illustration, linking the nominal SS and PF rates as the floor (at 9.5 per cent), current inflation rntc of 3.5 per cent and the gap hctwccn deposit and lending rates of 3 pcrccntagc points, the real interest rate works out to 9 per cent per year as compared to 8 per cent in 1985. The spread between SS rates and the prime lending rates (PLR) of the commercial banks varies from 200 to 400 basis points today implying real interest rates of 11 to 13 per cent for the best customers of the banks. They arc among the highest real interest rates in the world. If the government were to free interest rates, then based on the experience of other developing countries [Bhalla 1995], the real interest rate on IO-year government paper should decline to 5 per cent.[1] This in turn, based on estimates made in Bhalla (1999). should raise the real GDP growth rate from the current 6 per cent to 9 per cent per annum.

Secondly, Bhalla argues that, because of the floor on interest rates, the normal causation from high fiscal deficits to high interest rates does not apply in India. Most macro-relationships have been non-existent in India over the last 20 years, as most of the key macro variables, like the growth rate of the money supply and the fiscal' deficit as a proportion of GDP have been constants. As such, he argues, the causation runs from' high interest rates to high fiscal deficits and hence reducing the latter involves reducing the former by reducing the administered rates on SS and PF which set the floor for the rates at which the government can currently borrow.

Third, and the most original and convincing part of his thesis is that the states which receive 75 per cent of the savings depositscollectedare currently using these funds to finance about a third of their deficits (which were about 5 per cent of GDP in 1999-2000) in a pyramid (Ponzi) scheme, whereby the deposits collected in any year are immediately used to finance the states' deficits. Next year the new deposits are used to finance new expen-,diture. Thus, from financing 10 per cent of the states' deficits in 1985, by 1999 they were financing 32 per cent. As this is a; non-transparent Ponzi scheme, state politicians find the opportunity cost of these: funds to them is nearly zero as they do not have to explain to their electorates what they have done with the borrowings.

Fourth, he, therefore, concludes that attempts to control the fiscal deficit directly are misguided, that the rates on SS and PF should be freed and that all public borrowing should be done at market determined interest rates with the states funding their deficits transparently by issuing their own bonds.

Finally, Bhalla recommends that the RBI should be granted independence to conduct monetary policy.

In this paper we propose to: (a) set these arguments in 3 framework which is the exact oppositeof the well known 'financial repression' model of Mckinnon. which is labelled 'financial exuberance' (Section II); (b) examine the arguments within an analytical framework from Lal (1995) which distinguishes between different theories of the macro-economy – the 'monetarist', the 'new classical' and the 'Wicksellian' (Section III),[2] and (c) to provide some empirical validation for what appears to be the applicability of the monetarist model in India. and to show how the Bhalla 'facts' can be accommodated within it (Section IV). This allows us to show that some of the Bhalla policy conclusions are invalid (Section V).

Figure 1: Real Interest Ralos

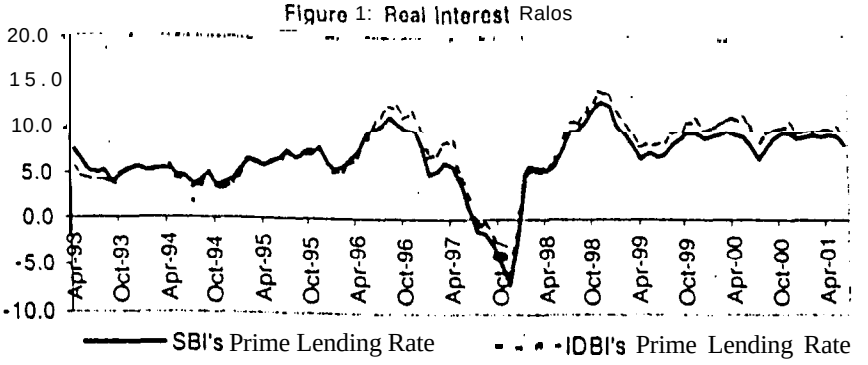
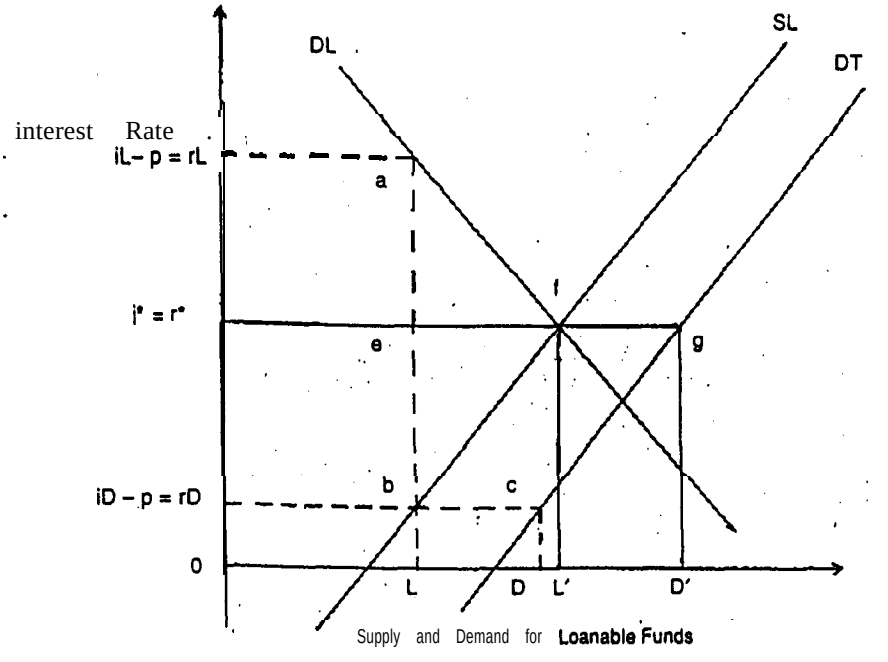


Figure 2: Flnanclal Repression



II

Financial Repression and Financial Exuberance

Consider the well known model of financial repression due to Mckinnon, which is depicted in Figure 2. Assume that the government finances its fiscal deficit purely through the inflation tax. Let us also assume that bank deposits are the only financial assets held by the households. If DT is the demand for time deposits at real deposit rates rd. which,given an equilibrium inflation rate of p implies a nominal deposit rate id , with rd = id-p. If the bank reserve ratio is k, then the supply of loanable funds is given by the SL schedule that is by (l-k) DT.

The demand for loans (from the private sector, as the government is printing money

IO finance its deficit) is given by the schedule DL, which is a function of the real loan rate rl= il–p, where il is the nominal rate on loans.

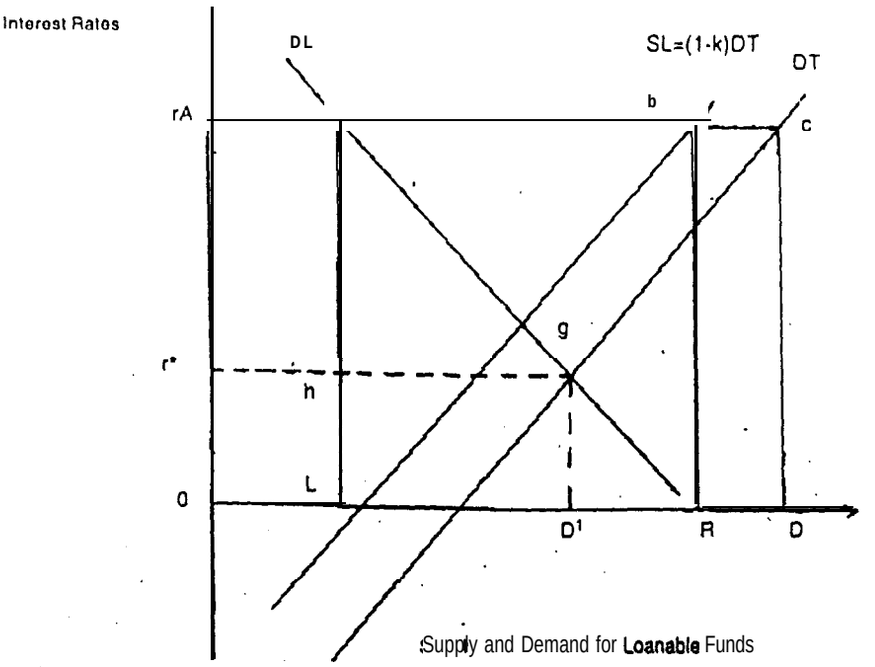
For a given fiscal deficit. the required rcvcnuc from the inflation tax implies an equilibrium inflation rate p, which in turn will imply a divergence in the real lending (rl) and deposit (rd) rates. At the real deposit rate 'rd', there will be OD of time deposits of which 'bc' will have to be held as reserves leaving OL to be lent out to the private sector at the equilibrium real lending rate rl. The gap 'ab' between rl and rd provides a measure of the revenue from theinflation tax. The larger the fiscal deficit the higher the equilibrium inflation rate p, and hence the wedge 'ab' between rl and rd.

Compared with the position without a fiscal deficit – when the equilibrium real loan and deposit rates will be equal at r* with OD'of time deposits, L'D'of reserves and OL' of loans to the private sector – there is crowding out of private investment of 'ef'. Also, the size of the time deposits is lowerby DD'and of loans by LL'. Hence this is a financially repressed economy.

Now, considerthe case where the fiscal deficit is financed entirely through public borrowing at a real interest rate (given by the administered rates on SS and PF funds) which provides a floor to the real interest rate 'above the equilibrium interest rate. This is depicted in Figure 3. As before, DT is the demand for time deposits (of which 'ab' constitute SS and PF deposits), SL is the supply of loanable funds for the given reserve ratio k, and DL is the demand for loans from the private sector. The equilibrium at the administered interest rate r^A implies a demand for time deposits of OD, of which RD are held as reserves and are available to fund the consolidated (central and states) fiscal deficit, and LR the share of the savings deposits accruing to the government (in particular the states) to fund the fiscal deficit, leaving OL as the loanable funds available to the private sector.

As. ex hypothesi, the whole of the consolidated fiscal deficit is funded by borrowing from time deposits, clearly there will be no inflationary impact of the fiscal deficit, unless as on the 'new classical' view the public realises that bond financing of the deficit is unsustainable and will mean that at some future date the government will have to levy the inflation tax to meet its debt obligations. The inflationary expectations assumed on this view seem unrealistic for India.

Figure 3: Financial Exuboranco



If this model is applicable to India. and the Bhalla conjecture encompassed within it is true, then the government has found a canny way of funding the budget deficit in a non-inflationary way. However, whether this is done within the limits set by the' overall long run-sustainability condition for bond financing will be discussed in the next 'section.

This would also explain why the standard macro relationships concerning the 'effects of the fiscal deficit on inflation do not hold in India. But there would still be crowding out of private investment of 'hg' – as compared with the case where there is no fiscal deficit.[3] Moreover, in this model, there is an over mobilisntion of time deposits (as compared with the no deficit case) of D' D. So as compared with the Mckinnon model of 'financial repression', this model Should be labelled as one of financial exuberance!

III

A Framework for Analysing the Macro-Economy

In India clearly there is inflation, so the pure bond financing of fiscal deficits of the 'financial exuberance' model will not be strictly applicable. What we need is a model, which combines bond and money financing ofdeficits. A general framework used in Lal (1995) within which alternative views about the inflationary process can be subsumed is helpful.

Thus let M be base or reserve money, B(t) the stock of nominal interest bearing government debt at date t, which has a r(t) real interest rate,
where r(t)'= i(t)-P(t),
w i t h
i (t) the nominal interest rate, and
p (t) the inflation , so if
P (t) is the price level $p=(dP/dt)/(1/P)$[4]
Y (t) is nominal GDP, whose growth rate y is $(dY/dt)/(1/Y)$ and
g is the growth rate of real GDP= y-p.
The demand for money is given by,

$$(dM/dt)(1/M) = a1-a2pe(t) + a3g(t) \quad ...(1)$$

so demand for real base money depends inversely upon the expected rate of inflation and positively on the growth rate of real GDP. If there are rational expectations, expected inflation pe(t) will equal actual inflation p, i e, pe(t)= p(t).

Second, there is the government's budget. constraint. If D is the nominal non-interest or primary deficit. then in nominal terms the constraint is:

$$PSBR= D + iB = dM/dt + dB/dt \quad ...(2)$$

that is, the total government deficit (public sector borrowing requirement or PSBR) which includes the interest payments on the government debt will have to be financed by some combination of increased base money (yielding the inflation tax revenue) and/or bond sales.

Broadly, three competing frameworks for explaining the inflationary process can be identified [Lal 1995]. We concentrate on the monetarist explanation as the new classical

and Wicksellian frameworks do not seem applicable to India. The 'new classical' because its assumption about inflationary expectations do not seem valid for India (see previous section) and the 'Wicksellian' because it assumes that there is no non-interest bearing money as through the intermediation of the banking system. all the , interest bearing debt of the government is 'money' - which is again invalid for India.

Within the monetarist framework, the government finances the primary deficit (D) by increased base money (D= dM/dt) and rolls over interest on its debt by issuing new bonds (iB= dB/dt). Hence inflation is determined by the increase in base money which in turn is determined by the primary deficit D,[5] that is,

$$p = (dM/dt)(1/M) = D/M \quad \ldots(3)$$

The financing of the interest payments by rolling over debt has no effect on the inflation rate. For assuming that (as in the financial exuberance model) all deficits are bond financed so that dM/dt =0, and defining

b = B/Y, the debt-income ratio

d = D/Y, the primary deficit-income ratio, and noting that,

$$b' = d(B/Y)/dt = (dB/dt)(1/Y) - (dY/dt)(1/Y)(B/Y)$$

$$= (dB/dt)(1/Y) - y\ b = (dB/dt)(1/Y) - (g+p)b \quad \ldots(4)$$

Then in (2) with dM/dt = 0, dividing through by Y, and substituting 'for (dB/dt) (1/Y) from, (4) we have

$$d + ib = b' + (g+p)b \quad \ldots(2a)$$

Dividing through by b and noting that r = i-p, we get

$$b'/b = (d/b) + (r-g) \quad \ldots(2b)$$

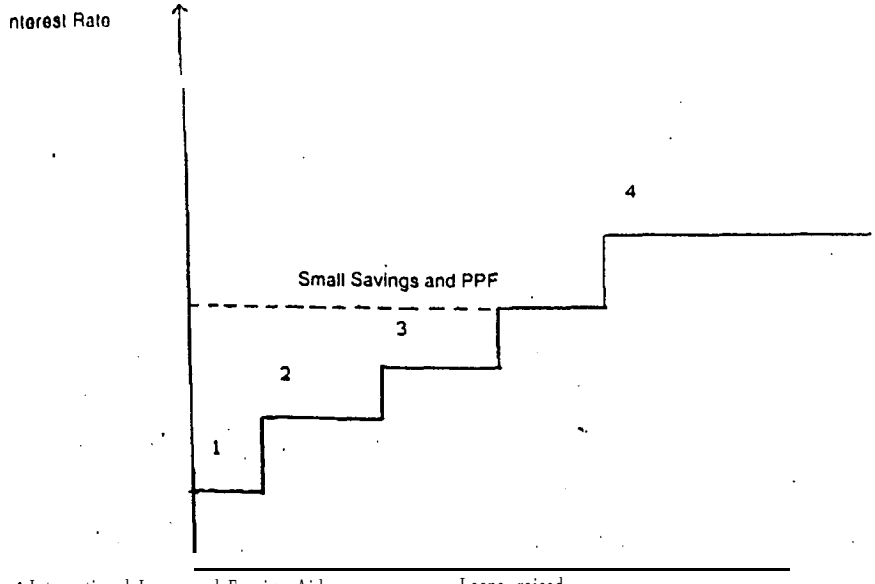
as the government's budget constraint. For sustainable debt financing, the debt-income ratio must stabilise at a future date, that is,

b' = 0, and hence there will have to be a long 'run budget surplus (-d) of.

$$-d = (r-g)b \quad \ldots(5)$$

Thus, on the monetarist analysis there need be no inflationary consequences of the internal debt of government if the primary deficit is converted into the long run surplus given by (5) which stabilises the debt-income ratio, and the growth of the monetary base (dM/dt) which determines the inflation rate (p) is limited to the growth of the real economy (g). This would, given a near unit income elasticity of demand for money, yield a stable price level. The other components of the model, namely, the demand and supply of loanable funds or deposits are presented in the next section.

Figure 4: Interest Rate Structure of Governmont Borrowings



1 International Loans and Foreign Aid
2 Bank Reserve Rates
3 special Deposits of RBI
4 Market Borrowings

Clearly, the 'financial exuberance' model (which incorporates the Bhallaconjectun) is encompassed by the above monetarist model as it allows for determination of an equilibrium, interest rate needed to finunce'the fiscal deficit and hence to show if 'the equilibrium rate' is below the administered rate.

I V Estimating the Monetarist Model for India

Next, we estimate this monetarist model for India, to see if the Indian authorities have implicitly been' following this model. We first estimated the 'financial exubennce' model given by Figure 3, which covers the bond-financed part of the gross fiscal deficit (PSBR). This was done in two steps:

First the DT and DL schedules, were estimated as a function of the nominal interest rate. This was because the inflation rate relevant for determining the real deposit rate which determines the demand for time deposits is likely to be the consumer price index (CPI) while that for the privatedemand for loanable funds is likely to be the wholesale price index (WPI). As, ex hypothesi. the whole of the non-primary deficit is financed by borrowing, on which despite the differing interest rates paid on different parts of government borrowing, the marginal rate on comparable maturity government debt is likely to be set by the postulated floor given by the administered rate on SS and PF funds. Following Bhalla's conjecture (Figure 4), we assume that the government pre-empts this from the supply of time deposits.

The resulting equilibrium in terms of nominal and real interest rates is given in Figun 5. As before the DL and DT curves relate to the demand for time deposits and loans with respect to real interest rates, whereas the DL' and DT' curves which are shifted by the relevant inflation rates pw (the WPI inflation rate) and pc (the CPI inflation rate) respectively. With a nominal non- primary fiscal deficit of 'ed', the market clearing interest rate would be i^A. OR' of demand deposits are created, of' which L'R' would be used to fund the deficit 'ed', and OL' would be given as loans to the private sector. This equilibrium would imply that for the given p and pw (and hence shifts in the DL and DT curves) the real interest rates on deposits would be rd' and that on loans rl'.

The DT' curve was estimated from a least squares regression of the form:

$$\log(TD) = c_0 + c_1 * IDBIPLR - c_2 * INFCPI + c_3 * \log\text{-}(GDPNOM) \quad (R\text{-}l)$$

where

TD are time deposits of the banking sector

IDBIPLR is the IDBI minimum lending rate

INFCPI is the CPI inflation rate

GDPNOM is nominal GDP

We used the IDBI minimum lending rate as our nominal interest rate variable (i) as

the SS and PF nominal rates have been constant for most of the period and only changed in small jumps. But as most interest rates are highly correlated in India [NCAER 2000], and on the Bhalla conjecture the SS and PF fund rates influence the real rates charged in the rest of the money market, the IDBI minimum lending rate, which shows considerable variation would be a statistical proxy for our desired nominal interest rate i.

The estimated regression equation for demand for time deposits is as follows.[6]

$$\log (TD) = -5.5347 + 0.0584 * IDBIPLR \quad (-11.09)^{***} \quad (2.54)^{**}$$
$$-0.0064 * INFCPI \quad (-1.00)$$
$$+ 1.2687 * \log (GDPNOM) \quad (22.24)^{***}$$

$R^2 = 0.9858$

DW Statistic = 0.4529

Sample: 1971-72 to 1998-99

The coefficients have the right sign and except for the CPI inflation rate are statistically significant.

For the DL' function we estimated the least squares regression:

$$\text{Xog (SCBNFC)} = a_0 - a_1 * IDBIPLR + a_2 * INFWPI + a_3 * \log(GDPMFGN) \quad \text{(R-11)}$$

where

SCBNFC is scheduled commercial banks' non-food credit

INFWPI is the WPI inflation rate

GDPMFGN is nominal manufacturing output.

As food credit is determined by a number of non-economic factors, we would expect the demand for non-food credit to be more responsive to the economic forces of real interest rates. Moreover as most of the non-food credit demand is likely to be from the manufacturing sector, we take its output level as a measure of Y. The estimated regression model for demand for credit is as follows:

$$\log (SCBNFC) = 0.2377 - 0.0101 * IDBIPLR \quad (1.07) \quad (1.43)$$
$$+ 0.0009 * INFWPI \quad (0.19)$$
$$+ 1.0152 * \log(GDPMFGN) \quad (52.32)$$

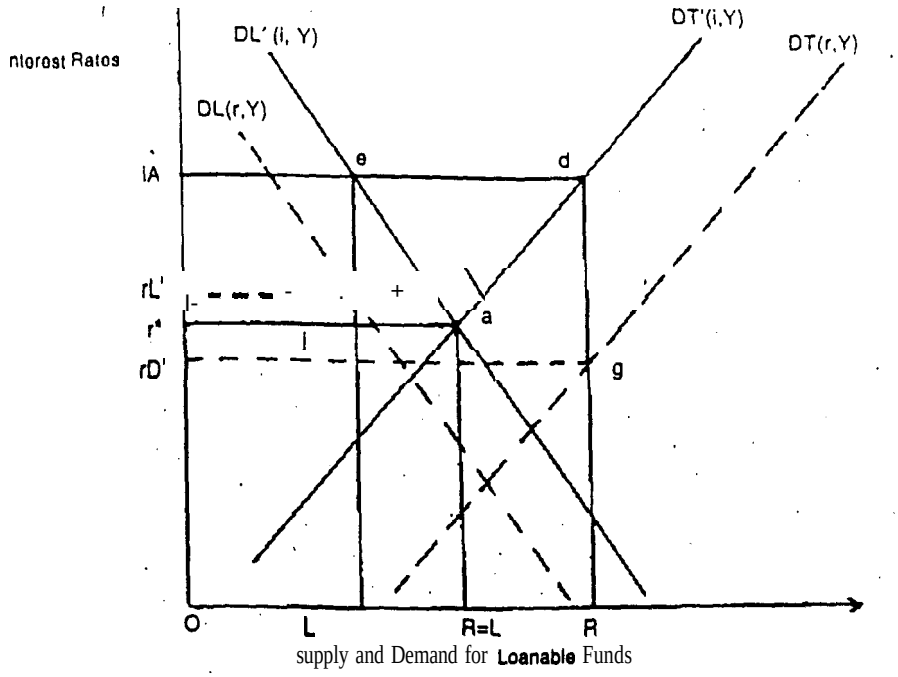
$R^2 = 0.9972$

DW Statistic = 2.02

Sample: 1986-87 to 1998-99

Though the coefficients are of the right sign they are not statistically significant except for the output variable, even though the overall regression is highly significant, So, faute de mieux. we will be using the estimated coefficients in our exercises on the 'financial exuberance' model..

Figure 5: The Financial Exuberance Model with Nominal and Real



supply and Demand for Loanable Funds

Given these estimates of the DT and DL schedules we first, determined what would be the equilibrium interest rate if there was no fiscal deficit and hence no need for any government borrowing (including any need for bank reserves 'which also represent government borrowing) which is the nominal interest rate i* in Figure 5. This is done by equating log(TD) = log (SCBNFC) in the estimated regression models R-I and R-II and solving for the IDBIPLR which would equate the demand and supply for loanable funds, given the CPI and WPI inflation rates and nominal GDP and manufacturing output in each year. These estimates are given in Table 1 (part A. row 1).

We next estimated how much higher the interest rate would have to be, given the non-primary deficit, which is financed by borrowing, that is i^A in Figure 5. We need to determine the change in the interest rate from the equilibrium level i^* for the given non-primary deficit B. This can be derived from R-I and R-II, for any given year that the shift variables. INFCPI, INFWPI and 'log (GDPNOM) and log (GDPMNFG) are constant. Then the total supply of loanable funds available for private sector loans with. the deficit B will be SL=TD-B.

Then, from R-I,

$$\log (TD) = c0 + c1.PLR$$
$$SL = e^{c0 + c1.PLR} - B \quad \text{(R-Ia)}$$

The demand for loanable funds from R-II (with inflation and output constant for a given year) will be,

$$\log(SCB) = a0 - a1.PLR$$

so,

$$SCB = e^{a0 - a1.PLR} \quad \text{(R-IIa)}$$

Equating R-Ia and R-IIa, we get,

$$e^{c0+c1.PLR} - B = e^{a0-a1.PLR}$$

denoting $(c0 + c1PLR) = x$, and $(a0 - a1\ PLR) = y$, we get

$$-dB = -c1.e^x .dPLR + a1\ e^y .dPLR,$$

So,

$$dPLR = dB/[c1e^x + a1e^y] \quad \text{...(A)}$$

From (A) we can calculate the change in interest rate; dPLR, implied by the non-primary deficit financed by borrowing, given our estimates of the coefficients c0, c1, a0 and a1 from R-I and R-II.' These estimates are given in Table 1 (Part B, row 1). The non-primary deficit financed by borrowing is computed as total non-primary deficit (gross fiscal deficit less primary deficit) less the amount of deficit financed by small savings schemes. This is because small savings funds used for financing the deficit are not appropriated from time deposits of commercial banks.

Next, we estimated the inflation rate, which according to the monetarist model is given by the primary deficit financed by expanding base money. The estimated money demand function is of the form,

$$\log(M) = b_0 + b_1 * \log(Y/P) - b_2 * \log(P) \quad \text{(R-III)}$$

where

M is reserve money

Y/P is real GDP

P is the GDP deflator

The estimated results are as follows:

$$\log(M) = 1.6334 + 0.7503^{*}\log(Y/P) \quad (0.35) \quad (2.16)^{**}$$
$$-1.3471^{*}\log(P) \quad (6.88)^{***}$$

$R^2 = 0.9954$

DW Statistic = 0.69

Sample: 1970-71 to 1998-99

Both coefficients are of the right sign and statistically significant. This implies, $dM/M = b1.\ d(Y/P)/(Y/P) + b2.dP/P$ denoting $dM/M = m$, and using $d(Y/P)/(Y/P) = g$, and $dP/P = p$, we have,

$m = b1\ g + b2\ p$

Or.

$p = (m - b1g)/b2$ . ..(R-IIIa)

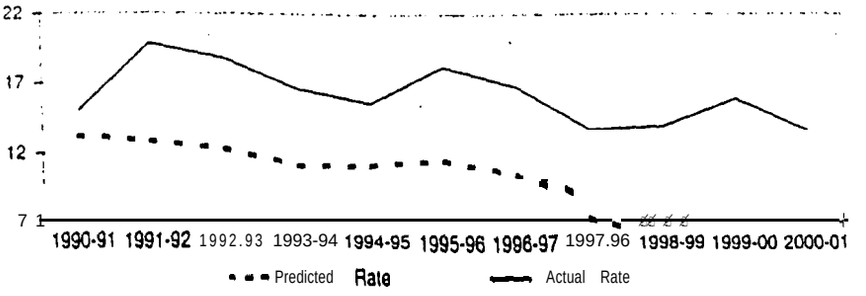
As in the monetarist model, expanding reserve money finances the primary deficit $m = dM/M = D/M$.

Substituting this in R-IIIa gives us the predicted inflation rate for various years shown in Table 1 (Part C).

V
Policy Analysis

Figures 6 and 7 chart the actual and predicted **nominal interest rates,** and the actual and predicted GDP deflator. The predicted rates are derived based on the hypothesis that the government is implicitly following the monetarist model by financing the consolidated primary deficit by increasing base money (and hence through the inflation tax) and the non-primary deficit by rolling over the interest on debt.

Figure 6: Nominal Interest Rate (Per Cent) with Bond-Financed Non-Primary Deficit



'Figure 7: GDP-Deflator (Per Cent Change) under Simulation of Bond-Financed Non-Primary Deficit

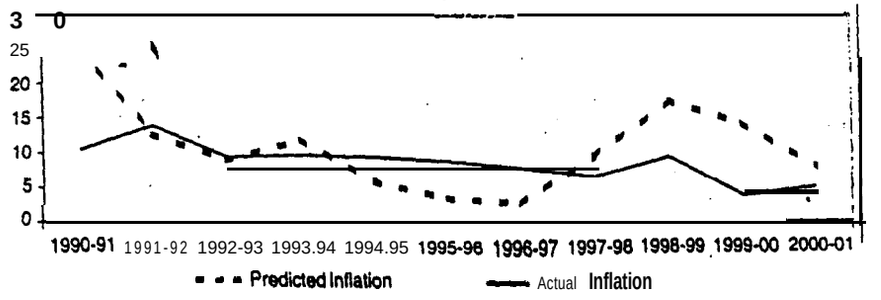


Figure 8: Nominal Interest Rate (Per Cent) with Actual Inflation Rate Used to Compute Monetised Deficit and Bond-Financing of Non-Primary Deficit

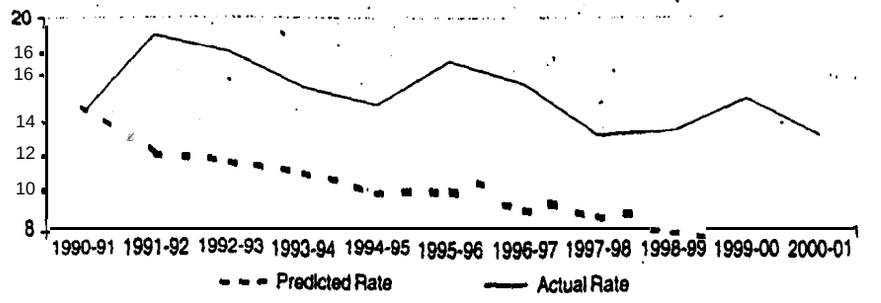


Table 1: Results of Altemative Simulations of the Monetarist Model

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-w	2000-01
A No Public sector borrowing and market equilibrium											
Equilibrium nominal interest rate (per cent)	10.663	9.412	8.673	7.736	8.130	6.341	7.296	6.034	5.038	3.832	2.960
Elasticity of demand for loans	-0.108	-0.095	-0.088	-0.078	-0.082	-0.084	-0.074	-0.061	-0.051	-0.039	-0.030
Elasticity of demand for deposits	0.624	0.550	0.507	0.452	0.475	0.407	0.426	0.352	0.294	0.224	0.174
Inflation- cpi_iw(per cent)	11.561	13.472	9.569	7.500	10.078	10.211	9.265	7.016	13.115	3.362	3.800
Inflation-wpi-all (per cent)	10.260	13.736	10.056	6.352	12.500	6.069,	4.605	4.403	5.944	3.269	7.113
Real interest rate: deposits (Per cent)	-0.877	-4.059	-0.916	0.236	-1.948	-1.671	-1.969	-0.983	-8.077	0.450	-0.820
Real interest rate: credit (per cent)	0.424	-4.326	-1.384	-0.615	-4.370	0.252	2.691	1.632	-0.906	0.563	-4.133
B With public sector borrowing											
Non-primary fiscal deficit without small savings (Rs crore)	16779	26721	33340	37340	40135	52086	62146	60700	63109	61716	101299
Rise in interest rate to finance non-primary fiscal deficit (per cent)	2.046	2.965.	3.189	3.075	2.691	2.637	2.964	2.664	2.509	2.884	3.287
Nominal interest rate if non-primary deficit is financed by borrowing (per Cent)	12.730	12.378	11.862	10.812	10.821	11.177	10.261	6.698	7.546	6.716	6.267
Actual IDBI PLR (per cent)	14.5	19	Ia	16	15	17.5	16.2	13.3	13.5	15.35	13.2
C Inflation rate under public sector borrowing to finance non-primary fiscal deficit											
Predicted gdp-deflator inflation (per Cent)	25.162	12.374	0.727	11.806	5.730	3.444	2.642	9.462	17.343	14.120	7.890
Actual gdpdeflator ifIltation (per cent)	10.409	13.633	9.146	9.636	9.371	0.764	7.033	6.543	9.261	3.614	5.055
D Special cases of monetisation of non-primary fiscal deficit											
Nominal interest rate with actual inflation rate to obtain monetised deficit (per cent)	14.660	12.190	11.802	11.146	10.264	10.416	9.619	9.089	8.666	8.090	6.642
Inflation assuming the entire fiscal deficit is monetised (per cent)	50.683	40.381	36.403	39.933	33.564	30.922	34.414	40.656	49.904	50.317	46.020
E Crowding out of private investment (as a per cent of loans)											
At predicted nominal interest rate under Scenario B above	2.072	3.003	3.229	3.115	2.725	2.673	3.002	2.698.	2.541	2.921	3.3207
At actual nominal interest rate	3.865	9.710	9.446	8.369	6.958	9.277	9.016	7.359	6.571	11.665	10.351

From Figure 6, it can be seen that the actual nominal interest rate has been higher by over 5 percentage points than the rate predicted to finance the non-primary deficit. The trends in the actual and predicted rates are the same. This is to be expected as on the Bhalla conjecture, the nominal interest rate is tied to the SS and PF administered rates and has only been slowly adjusted. So he is right that if the nominal interest rate were market determined it would be about 4-5 percentage points lower than the administered rate to bond-finance the given non-primary deficit in any year.[8]

High nominal interest rates have distorted credit allocation within the economy in two ways. First. investment in government debt by banks has been considerably higher than the mandated Statutory Liquidity Ratio (SLR), leading to a reduction in the availability of bank credit to the private sector.[9] Second. high lending rates reduce corporate demand for credit, further pushing bank funds into government. securities.

From Figure 7. it appears that the predicted rate both over- and under-estimates the inflation rate in various years. This implies that the government is not strictly following the monetarist prescription, and in years when the predicted rate is above the actual rate it is financing part of the primary deficit also by borrowing, and in years where it is below the actual rate it has been monetising part of the non-primary deficit. It seems to have been following an implicit inflation target (which is linked to the growth of base money). Thus, there is a constant downward trend in the actual inflation rate between 1992 and 1997, with a blip in 1998-99, largely due to large capital flows which were not sterilised and hence meant a rise in base money above the previous trend.[10]

Since it is apparent that the entire primary deficit is not strictly financed by monetisation each year, we also conducted another exercise. As the actual inflation rate is determined by the growth of base money which is determined partly by the gross deficit financed by money creation (the other part by changes in forex reserves), we can determine for each year what part of the gross deficit must then be financed by bond financing. This then allows us to determine the predicted nominal interest rate for the estimated bond financing. Results of this exercise are shown in Table 1, Part D). As the actual and predicted inflation rates in this exercise are the same, we only chart the actual and predicted nominal interest rates in Figure 8. There is not much difference in the pattern of predicted and actual interest rates in Figure 8 as compared with Figure 6. Hence. it seems that the assumptions of the monetarist model about bond financing are largely valid.

Next, we considered what would be the inflation rate if the whole of the gross deficit had been financed through increases in base money, and thus the inflation tax. The results are given in Part D of Table 1. The required inflation rates are much higher than those assumed by Joshi and Little (1996) as the inflation rates which would result from safe seignorage. In an inflation-shy economy such monetary accommodation of the deficit would be politically disastrous, and with the danger of slipping into hyper-inflation also economically. The government has been right, therefore, to target the inflation rate by keeping the growth of reserve money to roughly yield an inflation rate of around 8-10 per cent, whilst financing the rest of the fiscal deficit through bond financing.

But if our estimates are right, the government has paid a much higher interest rate than it needed it to because of the administered interest rate regime, and Bhalla is right that in a market determined interest rate regime the interest rate and hence the interest component of the fiscal deficit would have been smaller.

But he is wrong to suggest that the fiscal deficit does not matter or that the interest rates are determining the fiscal deficit. As the monetarist model encompasses the model of financial exuberance incorporating his conjecture. and seems applicable to India. it is clear that monedsing the primary deficit will - as it seems to have in practice - determine the inflation rate. Moreover. from the condition for the sustainability of bond financing (equation 5) it is clear that with the economy currently growing at about 6 per cent per annum, real interest rates above that will only lead to 3 sustainable debt-income ratio if the government runs 3 long run primary surplus.

Even if sustainable. any fiscal deficit (as well as non-investment public expenditure) involves crowding out of private investment. We have estimated by how much investment has been crowded out from the level without 3ny fiscal deficit (aj in Figure 5).[11] These estimates of crowding out are given in Part E of Table 1. There are two sets of reported estimates. One is for the crowding out which must necessarily occur if borrowing funds the non-primary deficit. These estimates are based on our estimated changes in interest rates, *di's*, for each year. But as the actual interest rate has been higher than this estimated market clearing rate, we have also estimated the crowding out from the actual interest ntes. The difference between them provides an estimate of the extra crowding out resulting from the administered interest rate regime. This difference. 3s well 3s the necessary crowding out from public borrowing is not large. mainly because our estimated interest elasticity for the demand for loans is fairly low. To that extent. replacing the administered by 3 market based interest rate regime would increase the investment - GDP ratio by about 1/2 to 3/4 per cent. Even with no borrowing. the investment ratio would *rise* by *just* over 1 per cent. So the great boost to growth postulated by Bhalla from the change in the interest rate regime also seems insecure. Nevertheless, cutting unproductive public expenditure remains imperative, both to turn the primary deficit into a surplus as well as to prevent the large squandering of domestic savings in various forms of predatory rent seeking by the state.

Finally. the most important measure to bring down interest rates in the economy is to open the capital account with 3 floating exchange rate. There, thus, remains 3 substantial amount of unfinished business if India's financial sector is to be become the efficient engine of intermediation it ought to become. EPW

Notes

1 And by implication interest rates on other debt instruments would also decline significantly.

2 The new classical view can be found in Sargent and Wallace, and the Wickscllian view in Bombcrger and Makinen.

3 Wc assume that reserve requirements would not be needed in the 'no deficit' case.

4 The differentiation is indicated by the standard notations of (dx/dt) or x'.

5 Changes in forex reserves also affect base money. We ignore thii aspect in the current analysis as it is not critical to the arguments here.

6 The t-ratios of estimated regression coefficients are given in parentheses below the respective coefficients. The significance is indicated by *, ** and ** for 10 per cent. 5 per cent and 1 *per cent* level of probability. The same notation is followed in the case of the other estimated equations as well.

7 We can also determine the elasticity of demand for loans (eL) and deposits (eD) at the equilibrium interest rate without any fiscal deficit (i*) for each year as follows. From R-I and R-II if the quantity of equilibrium loans/deposits at point a in Figure V is q, and the equilibrium PLR is denoted by i*, and as in any year the inflation and output variables are constant, then:

fmm R-I.

log q = c0 + c1.i* . . . A.1

and from R-II

log q = a0 -al. i* . . . A.2

Differentiating,

dlogq = dq/q = cl.di . . . A.1a

= -a1.di . . . A.2a

Hence,

eD = (dq/q). (i*/di) = c1.i* A.1b

eL = (dq/q). (i*/di) = -a1.i* A.1c

Thus, for 1998. the estimated i* in Table 1 is 5.038. and from estimated equations the values of the interest rate coefficients are. *cl* =0.058 and al = -0.01.

The estimated elasticities arc.

eD= 0.29: eL= 0.05

Thus, both cures are relatively inelastic with the demand curve for deposits being more elastic than that for loans.

8 Of course, the deviation of the predicted interest rate from the actual can also be due to the inadequate fit of the model. However. indications of investments hy the banks in excess of statutory rcquircmcnts at rates lower than WLR suggests that the floor for commercial lending holds up rates for the private sector but not for the government. If the interest rates were to be flexible downward for everyone. they would bc lower than the administered level.

9 The ratio of bank holdings of government and other approved securities to aggregate deposits has averaged 38 per cent for the period 1992-93 to 2000-01, which is much higher than the prescribed SLR of 25 per cent.

10 The higher inflation rate was also on account of supply shocks: Onion prices shot up as the crop was affected by poor rainfall.

11 Given the estimate of cL in any year, wc can derive the extent of crowding out (aj in Figure 5) as follows:

As cL= (dq/q)(i*/di), and as the percentage change in the demand for loans (crowding out) is dq/q, we have:

dq/q= eL.di/i*

Thus, for example. In 1998-99. eL=0.05, di = 4.528, i* = 5.038. Substituting these in the above gives dq/q of 5 per cent. which as a ratio of GDP. is 1.15 per cent. as the investment-GDP ratio in the year was 23 per cent. Similarly based on the actual interest rates. di = *8.46,* the dq/q for the actual rate was 8.3 *per* cent. So the administered interest rate regime leads to an extra crowding out of investment of 1.9-1. 15= 0.75 per cent of GDP.

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FINANCIAL EXUBERANCE:
Savings Deposits, Fiscal Deficits and Interest Rates In India

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Abstract

Even with the substantial liberalization of India's financial sector in the 1990's, administered rates still remain important for small savings instruments. This has allowed the government to finance its large fiscal deficit including that of the States by bond financing. This has led to higher real interest rates and crowding out of private investment. This paper develops a model of financial exuberance- the other side of the coin to Mckinnon's well-known model of financial repression- to show how despite high fiscal deficits the inflation rate has remained low in India. It then examines alternative methods of financing the fiscal deficit within a monetarist model of the economy, and finds that liberalizing small savings rates would lower overall interest rates but the gains in economic growth would not be great.

JEL Classification: E44, E63, O11, O16, O53