

**Working Paper 225**

**CAPITAL ILLUSIONS ABOUT INDIA'S  
REVENUE DEFICIT**

**By**

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**April 2004**

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## **Abstract**

There is a broad consensus that India's fiscal situation worsened over the 1990s due to a sharp rise in the revenue deficit, which in turn has raised interest rates, crowded out private investment and hindered growth. This article critiques this consensus view. It shows, using Domar arithmetic, that a rise in the fiscal deficit and revenue deficit can occur due to the easing of financial repression that leads to higher interest rates and thus higher interest payments on government debt, but simultaneously stimulates growth by lowering private borrowing rates. It then provides robust evidence that the rise in the revenue deficit (Centre) has been the byproduct of financial liberalization. This rise was accelerated by the policy changes associated with the structural adjustment program of 1991, leading to higher rates on government borrowing but lower private rates and greater private credit availability. The decline in private interest rates is consistent with a surge in private investment during the 1990s substituting for a fall in public investment, indicative of a reverse crowding out effect. The consolidated Centre-State finances indicate some deterioration, judged by the rise in the primary revenue deficit, but much less than that implied by the rise in the revenue deficit.

**Keywords:** Revenue and fiscal deficit, financial liberalization, interest rates, crowding out.

**JEL Classification:** E 43, E62, E 63.

## Capital Illusions About India's Revenue Deficit

'Twixt optimist and pessimist,  
The difference is droll.  
The optimist sees the doughnut,  
The pessimist sees the hole  
(Old English proverb)

The revenue deficit plays a pivotal role in all assessment of India's fiscal situation, and more so in policy formulation, as evident in the Fiscal Responsibility Bill goal of zero revenue deficit in five years. Most discussion and analysis emphasizes the fact that fiscal consolidation, as part of the structural adjustment program since 1991, has failed. While the combined Centre-State deficit was roughly the same, the quality has worsened: there is a higher revenue deficit and less capital expenditures. The rise in unproductive revenue expenditures in turn **ostensibly** pushes up interest rates, crowds out private investment, and/or leads to a cut in public investment to meet the fiscal deficit target, and thus hinders growth. Hence the overall situation is considered to be worse. Numerous economists, analysts and officials subscribe to what can be called this consensus view, outlined in detail later.

This paper provides an economic analysis of the causes and consequences of the rise in the revenue deficit since the 1970s upto 1999-2000. It does this by breaking it down into its two underlying components: interest payments and the primary revenue deficit.<sup>1</sup> It argues that this rise in the revenue deficit is not as economically harmful as generally portrayed. While, ceteris paribus, a rise in the revenue deficit is not beneficial, the rise in the revenue deficit that has occurred is the byproduct of underlying trends and the

financial liberalisation program of the 1990s that has raised interest payments on the government debt, but also promoted growth by lowering the costs of borrowing for the private sector. The consensus view is erroneous because it has completely ignored the consequences of the de facto trends and de jure policy changes leading to a higher revenue deficit on private borrowing costs, and thus on growth. The consolidated Centre-State finances do indicate a possible deterioration, but this conclusion requires further disaggregated analysis of the data.

The paper is organized as follows. Part II conducts a literature survey to document the pervasiveness of the consensus about the harmful consequences of the rise in the revenue deficit. Part III works out numerical examples of theoretical cases, linking interest rates and related fiscal variables using the Domar debt stability formula, to illustrate how the end of financial repression leading to a rise in the revenue deficit can stimulate growth. Part IV documents stylized facts about the Centre's fiscal ratios and interest rate and other banking sector variables, indicating the extent to which the rise in the revenue deficit over the 1980s and 1990s broadly corresponds to the example in Part III. Part V analyzes the consolidated Centre-State finances, where the deterioration is more pronounced. Part VI presents data on the fall in private borrowing costs and an associated surge in private investment. The paper concludes by discussing what fiscal policy should focus on in lieu of the revenue deficit.

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<sup>1</sup> A related article by this author (Moorthy, 2004), in the context of broadly projecting the debt outlook and assessing the relevant fiscal burdens, also provides a critique of this consensus view. This paper is not an

## PART II

### THE REVENUE DEFICIT CONSENSUS VIEW

The 'official' consensus view is well captured in various Government of India Economic Survey issues and RBI publications , including the latest RBI Annual Report.

“Moreover, the monotonic rise in public debt has eroded the Government sector’s ability to generate savings and service the internal debt. The quality of the fiscal deficit has worsened, with the revenue deficit having increased substantially. (2003, Ch V, p. 52)

The latest RBI Report on Currency and Finance (2004) mechanically repeats this view.<sup>2</sup>

Given the wide divergence of views that generally prevails among economists, especially regarding the impact of the fiscal deficit on interest rates and on the economy, to categorize the position described above as a consensus view requires adequate justification. This section provides such justification, and outlines alternative views.

The reader is referred to Table 2 (Fiscal Variables, Symbols and Accounting Identities) in Part III for any definitions and clarifications regarding relevant variables.

#### The Orthodox versus Keynesian View of the Fiscal Deficit

Before getting to the revenue deficit, it is necessary to go over the divergence of opinion among macroeconomists over the fiscal deficit. While each economist may hold an almost unique viewpoint on some aspect of the fiscal situation, there are broad categories

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assessment of the current fiscal situation nor is it meant to provide projections for debt variables per se.  
<sup>2</sup> "Notwithstanding modest successes in expenditure containment in the recent period, the slippages from the budgetary projections underscore the deterioration in the quality of fiscal adjustment. The quality of the revenue deficit has worsened, with the revenue deficit having increased substantially, indicating that a larger share of borrowed funds is being preempted by consumption expenditure." (P.19, Report on Currency & Finance, 2002-03).

of opinion. In the Indian context the long standing divide between the Keynesian view and the orthodox view has been well adumbrated by Lahiri and Kannan (2004).

The Keynesian view, as repeatedly espoused by Rakshit (2000, 2001) and Mulji (2004), emphasizes the demand stimulus from a higher fiscal deficit. It claims that under current conditons in India, demand stimulus is desirable, and hence a high, or higher fiscal deficit, is desirable. The Keynesian position is that crowding out effects from the fiscal deficit are either negligible or can be alleviated by monetization of the deficit and related measures.<sup>3</sup>

The orthodox view, to use Lahiri and Kannan's (2004) term, is espoused by the World Bank and IMF. It states that a higher fiscal deficit raises interest rates, crowds out private investment, and has a negative impact on growth. Although the orthodox view suggests less monetization to lower excessively high inflation, it also points to the adverse crowding out impact on private investment of the ensuing higher fiscal deficit.

To cite Srinivasan who supports this view:

"Studies of the the experience of a cross-section of countries suggest that large public sector deficits reduce growth by crowding out private investment. Attempts to reduce the monetization of the deficit through domestic borrowing raise interest rates and reduce the profitability of borrowing. Some studies (World Bank...) suggest that in India, during the ten-year period since 1986-87, an increase in the central government's fiscal deficit (inclusive of oil pool deficit) by one percent of GDP reduced private investment by one percent of GDP." (Srinivasan, 2002, p. 35)

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<sup>3</sup> "Monetised deficit, through operation of credit and money multipliers..... produces per se an expansionary impact through (financial) crowding in of private investment. Borrowing through enhanced SLR requirements on the other hand produces an equivalent crowding-out effect and hence is as contractionary as a cut-back in public consumption of the same magnitude. (Rakshit, 2001. p. 27)"

The latest exposition of the orthodox view on the fiscal deficit is that of Kochhar (2004), who concludes, like others at the Conference cited here, that India has avoided a fiscal crisis by restricting external debt and lengthening the maturity structure of external debt.

"Despite the apparent ease with which the fiscal imbalances seem to have been tolerated, they are taking their toll on the economy in terms of foregone growth.(p.1)"

### Mixed Evidence

There is evidence in favor of both the Keynesian and orthodox view: empirical studies examining the link between fiscal deficits and interest rates for the USA do not come to a clear consensus, as Lahiri and Kannan (2004) emphasize in a footnote to their article.<sup>4</sup>

This link is often difficult to find empirically because the actual deficit is cyclical, and given the procyclical pattern of interest rates and taxes minus transfers, it is often difficult to identify statistically, despite using simultaneous equation techniques. A good study documenting the positive impact of the fiscal deficit on interest rates is that of Easterly and Schmidt-Hebbel (1991). Their conclusions, according to this author, are noteworthy since they use robust cross-country regressions and take averages of country's data, thus avoiding simultaneity bias and other statistical problems that arise when dealing with time series data (in particular, distinguishing trend from random walk since the power of the statistical tests used to establish the time series properties of the data and choose the appropriate functional form are not very robust).

The lack of consensus about the impact of the fiscal deficit upon interest rates carries over to studies about India. Lahiri and Kannan ( p. 39, 2004) cite three dated studies on

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<sup>4</sup> Lahiri and Kannan (p.39.40) cite four studies that found no link between the deficit and interest rates for the USA, and two other studies which focussed on structural deficits that did find a link.

India that did not find any impact. Chakroborty (2000) found that the fiscal deficit did not Granger-cause interest rates, but interest rates Granger cause the fiscal deficit.

This author's view, built into the model in the next Section, is that there is a small positive impact of structural (full employment) deficits on real interest rates, as suggested by an IS/LM, crowding out model. A higher fiscal deficit is moderately bad.

In general, unemployment and unutilized capacity that can be permanently reduced by demand stimulus rarely exist. Whatever the interest elasticity of money demand and bank credit availability that determine the extent of nominal crowding out, there is almost always real crowding out. In textbook parlance, the long run Aggregate Supply Curve is vertical.<sup>5</sup> Hence a fiscal deficit raises the real rate of interest. Neither the Keynesian view, nor the Ricardian view (saving to pay anticipated future taxes) both of which conclude, for very different reasons, that a fiscal deficit does not raise real interest rates are empirically valid.<sup>6</sup> However, the crowding out effect is small and weak compared to the effect of inflation upon nominal interest rates, and compared to the impact of the easing of financial repression upon private borrowing rates, discussed in the next section.

### Views on the Revenue Deficit

The revenue deficit consensus view, as described here, falls within a subset of what Lahiri and Kannan (2004) describe as the orthodox view. It represents the thinking that has led to the framing of the Fiscal Responsibility Act:

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<sup>5</sup> Patnaik (2001) argues that a flattish LM curve due to the supply of bank credit, in effect, precludes a fiscal deficit impact on real interest rates. While this may be generally be the case (an interest elastic money supply can have the same macroeconomic implications as interest elastic money demand, as Tobin (1971) first pointed out, real crowding out would reduce the real money supply in the long run and push up rates.



“ There is near unanimity across a wide spectrum of opinion about the need to eliminate the revenue deficit and that the recommended option is desirable and feasible. Indeed, it is desirable to go beyond the elimination of the revenue deficit and build up a revenue surplus. The Committee is of the view that the quality of fiscal adjustment is as important as the level of fiscal correction. (Ministry of Finance, 2000a and 2000b).”

Lahiri and Kannan themselves seem to espouse this view.<sup>7</sup> Ahluwalia (2002) also posits a consensus view<sup>8</sup> and so does Kelkar (2001).<sup>9</sup> Shome (2002) takes a similar position.<sup>10</sup> Goyal (2000), Jha (2000) and Parikh (2000), all in the India Development Report, draw attention to the deteriorating revenue deficit as an indication of a worsening fiscal situation.<sup>11</sup> Jalan (1996) had very early on argued for a revenue deficit cap<sup>12</sup>.

Rangarajan (2000) has also stressed the dangers of a rising revenue deficit,

“The change in the fiscal regime since 1982-83 from revenue surplus to revenue deficit has meant that what was earlier a non-debt creating source of financing has become a source of rising internal indebtedness. The build up of public debt and the consequent interest burden which is now the fastest growing item of expenditure has further fuelled the growth of revenue expenditure” (p. 25, Keynote address, January 1999, reprinted).

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<sup>6</sup> There is a wealth of evidence against Ricardian equivalence: for cross country evidence and citations, see Easterly and Schmidt-Hebbel (1991).

<sup>7</sup> “Apart from the speed of fiscal consolidation, its quality is equally important (2004, p. 55)”

<sup>8</sup> In the context of discussing State finances, Ahluwalia wrote, “ As recently as 1990-91, several states had a positive balance from current revenues which contributed something to finance the plan. This balance has now turned negative for all States.... Over the years, both the Centre and States have seen a burgeoning of non-Plan expenditure in the face of inadequate buoyancy of resources. They have responded by resorting to larger and larger volumes of borrowing to finance Plan expenditure, which is shrinking as a percentage of GDP.” (Ahluwalia, 2002).

<sup>9</sup> “Already, these growing revenue and fiscal deficits lead to enhanced market borrowing by the Government. This means higher interest rates and crowding out of private sector investment. Consequently a cruel choice is between higher inflation by printing of money or higher interest rates which choke off investment and growth. ” (Kelkar, 2001, p. 4)

<sup>10</sup> “In sum, the fiscal performance of the Centre and States worsened over the past decade, both in terms of the level and quality of the fiscal deficit, and it has been exacerbated more recently... (Shome, 2002, p. 209)”

<sup>11</sup> “ A fiscal responsibility act should be adopted but it should focus on backload reductions of revenue deficit, while protecting capital expenditures... (Parikh, 2002, Overview, pp. 23,)

<sup>12</sup> “It is therefore necessary to go further and put a limit on the size of the revenue deficit. Such a limit would also constrain the fiscal deficit. Fiscal deficits would have to be limited only to borrowings for capital investment. (1996, Jalan, p. 59)”

Chelliah (2000) and Bagchi (2000) can be characterised as holding a relatively orthodox view. While differing from the Keynesian view, they also advocate a revenue deficit target.<sup>13</sup>

Although the Keynesian view on the fiscal deficit differs from the orthodox view, there is some congruence between the two views regarding the undesirability of the revenue deficit: it represents wasteful expenditure, as Balakrishnan (1997) and Chandrasekhar (2000) stress. In addition, Rakshit (2000) uses textbook Keynesian principles to point out that, compared to an equivalent fiscal deficit, the revenue deficit provides a smaller demand stimulus and advocates a revenue surplus.<sup>14</sup>

This author's viewpoint on the revenue deficit is explained in detail in the next section. It differs from the broad consensus that exists between the Keynesian and orthodox views that a higher revenue deficit, for a given fiscal deficit, reflects fiscal deterioration.

Briefly, in my opinion, a higher revenue deficit may not be bad if it results from financial easing that lowers private borrowing rates. Allowing for variations in individual views, the broad similarities and differences in the three viewpoints outlined above (Orthodox, Keynesian and this author) on the fiscal deficit are summarized below in Table 1.

<sup>13</sup> All three of us agree that, over the medium run, as percentages of GDP, revenue deficit should be brought down to near zero." (Rakshit, 2001, p. 38, footnote 47)

<sup>14</sup> Rakshit's (2001) argument can be explained as follows, using Symbols from Table 2: Suppose the fiscal deficit is 100, consisting of a *prrevdef* of 50, *capex* of 20 and *intp* of 30. An equivalent *revdef* would be *prrevdef* 50 and *intp* 50 (*capex* has been cut to meet rising *intp*). Since *intp* are a transfer, they do not add to GDP at the first round. Further, the marginal propensity to consume out of transfers (in particular *intp*, much of which is income of the rich is lower than out of *capex* and spending on say food for work programmes. With a smaller multiplier, the total demand stimulus is much less. This argument has two limitations. First, at round one whether government spending is classified as a transfer or government output, such as spending on wages and salaries, is often a matter of GDP accounting rather than of economic utility, which is related to the consumption component (second round and beyond) of GDP. Second, it ignores permanent versus transitory income aspects of the demand multiplier.

TABLE 1

<u>Broad Categorization of Different Views About Deficit Impact</u>			
	<u>Keynesian*</u>	<u>Orthodox</u>	<u>This author</u>
Higher Fiscal Deficit	Good. Boosts demand & if due to more <u>capex</u> it boosts long-term growth	Bad. Crowds out private investment by raising int. rates. World Bank, IMF RBI.	Moderately bad in general, but not necessarily so if due to financial easing
Higher Revenue Deficit	Bad. Wasteful Spending compared to same <u>fiscdef</u> Less demand stimulus.	Same int rate impact as <u>fiscdef</u> , but adverse growth impact since <u>capex</u> falls	A priori unclear. Depends on why <u>revdef</u> rises.

Note: Ricardian view is also that, while more government expenditure is inefficient, the fiscal deficit itself does not affect interest rates. (Symbols and abbreviations in Table 2).

Further analysis of this issue requires more precise specification about which component of the revenue deficit has risen, done in Part III below.

### Part III

#### IMPACT OF ENDING FINANCIAL REPRESSION ON FISCAL VARIABLES

The consensus view, in my opinion, is fundamentally flawed. The revenue deficit (revdef) first needs to be broken down into its economically meaningful, structural components: the primary revenue deficit (prrevdef) and interest payments (intp) respectively (cf. Table 2 for all symbols). A rise in revdef due to the former versus that due to the latter can have very different economic consequences. If the rise in revdef has been mainly due to intp, then analysis of the factors underlying the rise in the interest

rate and/or the debt ratio is called for, before concluding, as the consensus view has done, that this rise is harmful.

Using the symbols in Table 2, suppose **revdef** (**prrevdef** + **intp**) rises only because **intp** rises; **prrevdef** is assumed to be constant. Also **prdef** (**prrevdef** + **capex**) is constant since **capex** is also assumed constant. Hence **fiscdef** (**revdef** + **capex**) also rises by **intp**.

Further assume this rise in interest payments occurred due to a rise in the interest rate on government borrowing, resulting from the end of financial repression in which high cost private borrowing subsidized low cost government borrowing. Then the end of the financial repression raises the revenue deficit, but also lowers private borrowing costs. Thus the ensuing rise in the revenue deficit is, by itself, not harmful to growth: it merely reflects and results from lower cost and/or greater availability of credit for the private sector, which is a stimulus to growth. A numerical example can best elucidate this fundamental point. Relevant variables, identities and symbols are listed in the Table below.

#### TABLE 2

##### SYMBOLS FOR IMPORTANT FISCAL VARIABLES

Lower case symbols denote fiscal ratios as percentages of GDP:

Fiscal deficit (**fiscdef**) = Primary Deficit (**prdef**) + Interest Payments (**intp**)

Primary Deficit = Capital Expenditure (**capex**) + Primary Revenue Deficit (**prrevdef**)

Revenue Deficit (**revdef**) = Primary Revenue Deficit (**prrevdef**) + Interest Payments

Interest Rate (**intp**) = Rate on Government Bonds\*(Debt/GDP ratio) [i.e.  $R(G)*d$ ]

### Long Run Equilibrium (LRE) Domar debt formula values

Suppose to begin with,

Nominal GDP Growth = 8%,  $R(G)$  the (controlled) rate on government bonds = 4%

and relevant fiscal ratios, expressed as percentages of GDP are:

$prrevdef = 1\%$ ,  $capex = 1\%$  and so  $prdef = prrevdef + capex = 2\%$

Then by the Domar (LRE) formula:

$d^*$  (debt to GDP ratio) =  $prdef / [g(Y) - R(G)] = 2 / (8 - 4) = 50\%$ .

So  $intp$  (interest payments) =  $R(G) \times d^* = 4 \times 0.5 = 2\%$ .

Hence  $revdef$  (revenue deficit) =  $prrevdef + intp = 2 + 1 = 3\%$ , and

$fiscdef$  (fiscal deficit) =  $prdef + intp = 2 + 2 = 4\%$ .

Last but not the least, the rate on private borrowing,  $R(PVT)$  can be decomposed as:

$R(PVT) = R(G) + \text{Risk Premium Spread} + \text{Financial Repression Spread}$ .

Suppose  $R(PVT) = 4 + 1 + 5 = 10\%$  (i.e. there is a 100 basis point default risk premium spread of private over government bonds, the same as in a financially open market, and also a 500 basis point spread due to financial repression). Apart from the artificially low  $R(G)$ , financial repression may also entail a range of lending rates with various administrative controls on private lenders. In this example, while credit is rationed to the private sector, amongst private borrowers, it is assumed the market clears by price (interest rate) rationing.<sup>15</sup> Some credit rationing also results from the optimizing decisions of private lenders, as much academic literature has gone to show. But such

<sup>15</sup> In practice this has not been the case in India. Among private borrowers, credit rationing prevailed during financial repression with specified maximum and minimum lending rates.

voluntary credit rationing does not affect this analysis, which deals with policy enforced credit rationing that would not occur otherwise.

Now suppose financial repression ends by an overnight policy change that (i) removes both the obligation for commercial banks to buy government bonds at the controlled rate  $R(G)$  and the compulsion for the central banks to monetize the government deficit, and (ii) also frees up financial institutions to decide upon lending rates. This example is ambivalent as to whether the lender is a private or public sector entity, such as public sector banks, but the borrower is private.  $R(PVT)$  can be thought of as the bank lending rates respectively. Suppose  $R(G)$  rises, as a result, to 6%. (All debt is assumed to be one period, so 6% is the average rate on debt, relevant for the Domar equation.)

Then from the Domar debt formula, in long run equilibrium,  $d^* = 2/(8-6) = 100\%$ .

$intp = 6\%$ ,  $revdef = prrevdef + intp = 1 + 6 = 7\%$ , and  $fiscdef = 8\%$ .

The fiscal deficit and the revenue deficit both rise by 4 percentage points, but with the financial repression spread now zero, the cost of borrowing falls:  $R(PVT) = R(G) + \text{risk premium} = 6\% + 1\% = 7\%$ . Basically, the end of repression raises the revenue deficit, but also lowers private borrowing costs substantially.

The following Table 3 (A) summarizes the consequences of the easing of financial repression. For analytical convenience, the example here compares long run equilibrium convergent Domar values. As explained in Moorthy (2003a) using discrete time simulations, convergence (say within 1% of long run equilibrium values) can take over

hundred periods (years) to achieve. In that sense, the numerical values used here do not exactly correspond to the changes in the fiscal ratios over a much shorter horizon (say ten years, the time span to compare the impact of liberalization). But these numerical values do capture the broad trends in fiscal ratios and interest rates due to liberalisation.<sup>16</sup>

TABLE 3 (A)

Fiscal Ratios and Related Interest Rates Before and After Ending Financial Repression

Base Case A: Primary deficit unchanged, financial repression ends

	<u>prrevdef</u>	<u>capex</u>	<u>prdef</u>	<u>R(G)</u>	<u>g(Y)</u>	<u>debt</u>	<u>intp</u>	<u>fiscdef</u>	<u>revdef</u>	<u>R(PVT)</u>
Before	1	1	2	4	8	50	2	4	3	4+1+5=10
After	1	1	2	6	8	100	6	8	7	6+1=7
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Growth Impact	1	1	2	6.5	8.7	90.9	6	8	7	6.5+1=7.5

Despite the 'worsening' of the fiscal situation, which is the interpretation of the above changes from a consensus viewpoint, the cost of borrowing, an important determinant of growth, has come down a lot. The removal of the compulsion to buy government bonds raises R(G) but simultaneously makes it feasible for lenders to lower R(PVT). The drop in R(PVT) is a stimulus to growth, although the rise in fiscdef and revdef, ceteris paribus, may hurt growth by second order and subsequent effects on interest rates, discussed below. Ignoring these second order effects, this example implies that the higher revenue deficit due to the end of financial repression stimulates growth.

<sup>16</sup> The relevant ratios can be computed over a shorter horizon using dynamic Domar equations but that would add unnecessary detail to the numerical results without changing the basic conclusions.

In reality, we would also need to distinguish between  $R(G/AVG)$  and  $R(G/NEW)$ , respectively the average cost of debt that enters the Domar formula versus the marginal cost i.e. the rate on newly issued loans. Similarly, a distinction between  $R(PVT/AVG)$  and  $R(PVT/NEW)$  is needed. For analytical simplicity, both government and private debt are assumed in the above example to be one period. In general, an easing of financial repression would raise  $R(G/NEW)$  and lower  $R(PVT/NEW)$ , but what happens to the average cost of debt  $R(G/AVG)$  cannot be predicted *a priori*: it would depend upon the actual cost and share of maturing debt relative to new debt.<sup>17</sup>

Standard IS/LM analysis in which more government borrowing pushes up the interest rate and crowds out private investment is valid when there is **no financial repression to begin with**. i.e.  $R(PVT) = R(G) + \text{Risk Premium}$ . The rise in  $R(G)$  with an unchanged risk premium raises  $R(PVT)$  as well. But such analysis is not relevant to an economy in which the rise in government borrowing is mainly due to higher interest rates resulting from the transition to open financial markets for government borrowing, as has partially been the case for India during the 1980s and into the 1990s.

Subsequent effects on interest rates and growth due to the rise in the fiscal deficit:

To what extent does the rise in the revenue deficit, and equal rise in the fiscal deficit of 400 basis points, adversely affect growth by raising interest rates, via a standard crowding out effect?. To begin with, in principle, it is the volume of borrowing (the



fiscal deficit) that determines interest rates, not the use to which that borrowing is put.

While there are various different types of crowding out and crowding in effects that need to be categorized and analyzed, the standard IS/LM effect pertains to a rise in  $R(G)$  due to more government borrowing i.e. a higher fiscal deficit. The revenue deficit per se should not determine the extent of crowding out. In this example, since both deficits rise equally, the crowding out effect could apply to either **fiscdef** or **revdef**.

Suppose the rise in the fiscal/revenue deficit raises interest rates by 50 basis points, a standard crowding out effect. So the market clearing  $R(G)$  now =  $6 + 0.50 = 6.50\%$  and  $R(PVT) = 6.5\% + 1\%$  (risk premium) =  $7.50\%$ . Because, by assumption, the ending of financial repression effect dominates the crowding out effect (500 and 50 basis points respectively) the net result is a lower  $R(PVT)$  by 250 basis points.

This is a reasonable assumption to make: it is backed by general evidence. Broad facts suggest that the initial link between fiscal deficits and interest rates is small and tenuous, compared to the impact of the easing of financial repression upon private interest rates. Changes in India's interest rates in India during the 1990s also back this assumption. But even when the net effect is lower  $R(PVT)$ , as assumed above, the higher interest rate  $R(G)$  will feed back into debt (via the Domar formula), with subsequently higher **intp** and **fiscdef**.

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<sup>17</sup> The actual trends in  $R(G/AVG)$  and  $R(G/NEW)$  can diverge substantially over several years, as they have in India. Between 1995-96 to 1999-2000,  $R(G/AVG)$  rose by 80 basis points (9.3% to 10.1%) while  $R(G/NEW)$  fell by about 200 basis points.

These subsequent repercussions of the initial rise in  $R(G)$  need to be taken into account. For the numerical values chosen here, when  $R(G)$  rises to 6.5%, then all other fiscal ratios rise:  $d^* = 133.3\%$ ,  $intp = 8.67\%$  and  $fiscdef = 10.67\%$ . There will be a further rise in  $R(G)$  due to crowding out from the higher  $fiscdef$ , setting in an explosive cycle of rising  $R(G)$ , debt and deficit. Even if one ignores long run equilibrium numerical values above as being very far away, feedback effects in the medium term should be reckoned with.<sup>18</sup>

However, due to the end of financial repression, the subsequent repercussions of the initial crowding out effect can be justifiably ignored. The large drop in  $R(PVT)$  [250 basis points in this example, after allowing for 50 basis points crowding out] is likely to provide a stimulus to growth  $g(Y)$  larger than the adverse impact of a higher  $fiscdef$  upon  $R(G)$ . The positive impact of lower  $R(PVT)$  on investment and thus on  $g(Y)$  through standard cost of capital and other channels is generally accepted by most schools of thought, while the adverse effect of  $fiscdef$  and debt on  $R(G)$ , as discussed earlier, is likely to be of smaller magnitude and uncertain.<sup>19</sup> As a result the denominator in the Domar formula [ $g(Y) - R$ ] is likely to rise, the net subsequent effect on debt is actually likely to be favourable.

<sup>18</sup> The crowding out effect implies that, if there were no financial repression to begin with, then from a theoretical standpoint, certain restrictions on its magnitude and/or functional form of the crowding out effect would need to be imposed for the long run equilibrium Domar debt stability condition to hold. Insofar as debt stability generally holds empirically, this implies that either crowding out effects are weak and/or non linear or operate only in certain ranges, or that other corrective mechanisms, cyclical or political, operate upon the primary deficit, growth and interest rate so as to ensure stability, despite standard crowding out.

<sup>19</sup> A brief discussion of cyclical versus structural influences on investment is required. Both the real interest rate and investment are procyclical, reflecting the dominance of animal spirits and sales and accelerator effects upon investment, compared to the negative interest rate effect. But, *ceteris paribus*, the negative impact of a higher real rate through cost of capital and other channels (loan cutoff rules based on payment to income ratios that rise with the interest rate, as in housing loan and consumer durable markets) is very much present and econometrically verifiable. The negative relationship between the yield curve and GDP growth points to the importance of interest rates in determining growth.

The third row C in Table 3 (A) elucidates this point by incorporating both the crowding out effect of higher R(G) and the investment and growth stimulus of lower R(PVT). The numbers have been chosen so as to have offsetting impact:  $g(Y)$  rises by 70 basis points due to lower R(PVT) while R(G) rises by 50 bps due to the crowding out effect of the rise in **fiscdef**. Compared to Situation B, **intp** ( $6.50 \times 10/11$ ) and **fiscdef** remain the same. Hence there are no further effects due to the initial crowding out effects. Although the higher **fiscdef** raises R(G) to 6.5%, growth rises to 8.7% and economic welfare is higher.

It is more than reasonable to ignore the consequences of these opposing second order effects. If anything, it is likely that the growth effect would have a more favourable impact than the crowding out effect, which Ricardians and Keynesians claim does not exist at all. The clear implication of this example is that the rise in **revdef** due to the end of financial repression is not harmful, but a by product of the stimulus to growth.

#### Clarifying crowding out and crowding in phenomena

The fall in R(PVT) despite a higher **revdef** and **fiscdef** above scenario does not strictly correspond to crowding out or crowding in, concepts which were developed for an economic environment in which there was no financial repression to begin with, and so R(PVT) moved in tandem with R(G). As is well known, crowding in refers to the positive impact of government capital expenditure (in critical infrastructure areas) upon private investment through physical complementarities and external economies.

Implicitly, under standard crowding in, private investment rises despite the likely rise in

R(G), and hence in R(PVT) for a given risk premium, due to the higher borrowing to finance capital expenditure.

The situation(s) outlined in Table 3 (A) does lead to a rise in private investment, but it should not be misconstrued to be 'crowding in.' It is best categorized as quasi reverse crowding out, i.e the government's reduced claim on funds, when financial repression ends, frees up resources for the private sector (in this case, despite a rise in the fiscal deficit.) By contrast, standard reverse crowding out would be when, in an IS/LM model, a fall in **fiscdef** or government spending stimulates private investment by lowering both R(G) and R(PVT).

#### The End of Financial Repression Coupled with a Cut in Capital Expenditure

The above base scenario needs to be modified to deal with a case where, along with the end of financial repression, capital expenditure gets cut when interest payments rise, in order to adhere to fiscal deficit targets. This modified case is more suited to the Indian structural adjustment program of the early 1990s described by the consensus view: lower **capex**, the same or lower **fiscdef**, but a decline in its quality (due to a higher **revdef**) which is supposed to hurt growth in the long run.

Suppose to start with, **capex** = 2%, **prrevdef** = 1%, R(G) = 4% and  $g(Y) = 10\%$ . Along with financial easing that raises R(G) to 6%, **capex** gets cut to 1%. The accompanying changes are presented in the Table below.

TABLE 3 (B)CASE B: Financial repression ends, but capex also gets cut to meet the fiscdef target

	capex	prrevdef	prdef	R(G)	g(Y)	d*	intp	fiscdef	revdef	R(PVT)
Before	2	1	3	4	10	50	2	5	3	4+1+5=10
After	1	1	2	6	10	50	3	5	4	6+1=7
Growth Impact	1	1	2	6	10.5	44.4	2.67	4.67	3.67	6+1=7

In this example, since the **fiscdef** is the same, there is no crowding out effect as earlier, **R(G)** does not rise beyond the initial jump to 6%. *Ceteris paribus*, the cut in **capex** would adversely affect growth, as the consensus view emphasizes. However, the drop in **R(PVT)** is assumed to provide a larger offsetting stimulus. Insofar as much **capex** is disguised revenue expenditure, the private investment stimulus effect is likely to dominate and overall boost growth and improve the long run equilibrium Domar outcomes. It is assumed that growth rises to 10.5%, with some resulting improvement in fiscal ratios since the debt ratio falls. There will be further favourable feedback effects of the decline in debt, but these are ignored here.

Inflation and the easing of financial repression

The above analysis was carried out for nominal rates, and it is analytically convenient to think of the above example as corresponding to a zero inflation (actual and anticipated) economy, with nominal and real rates being the same. Financial repression can certainly prevail in a zero inflation economy, based only on the government preempting funds at

favourable interest rates, and explicit price and non-price rationing of the surplus funds to the private sector at higher rates.

In practice, much of financial repression is financed by the central banks monetization of the deficit, whether at controlled or market rates, leading to inflation. But a changing degree of monetization, and hence inflation, is not relevant to explain what happens to the spread between  $R(G)$  and  $R(PVT)$ , which is the crux of our analysis, since both are equally affected by inflation. Putting inflation into the above model will not adversely affect its conclusion. Lowering inflation will gradually reduce  $R(PVT)$ , and allowing for the one-time jump in  $R(G)$  when monetization of the deficit ends, reduce  $R(G)$  as well.

#### PART IV

##### FISCAL RATIOS AND INTEREST RATE CHANGES: INTERPRETING THE EVIDENCE

The stylized facts pertaining to the consequences of a higher revenue deficit are presented in Table 4 which reports decadal changes. Since data series for some variables for 1969-70 are not available, the 1970s decade changes are measured using 1970-71 as the base year. The end of the decades, fiscal years 1989-90 and 1999-2000 happen to provide natural cutoffs corresponding to regime changes. Since the economy underwent great turmoil in 1990-91 leading to the balance of payments crisis and the IMF initiated structural adjustment program, the preceding normal year 1989-1990 is a suitable benchmark to measure changes pertaining to the end of financial repression. The year 1999-2000 also happens to provide a natural cutoff, albeit to a lesser extent. It marks a change in India's interest rate trends: the end of a rising cost of debt  $R(G/AVG)$  and also

a fundamental change in U.S. economic conditions impinging upon India, i.e. the start of Federal Reserve easing.

In analysing movements in  $R(G/NEW)$  and  $R(PVT)$  it is vital to consider the impact of capital inflows and world (in particular, U.S.) interest rates. The fall in India's  $R(G/NEW)$  has occurred in two phases: the late 1990s when the US Federal funds rate target was being raised up to 6.5%, and from January 2001 onwards when it was lowered down to 1% by end 2001. Given the fairly high level of capital account convertibility, and the exchange rate expectations fostered by the RBI's control on rupee appreciation, and scope for NRI deposit arbitrage, Indian policy and market interest rates have been influenced by US interest rates in recent years. Confining the analysis of this paper up to 1999-2000 implies that the decline in  $R(G)$  should not be attributed to lower foreign rates. In any case, the focus here is on the spread between  $R(G)$  and  $R(PVT)$ , which is much less affected by the change in world liquidity conditions than the level of rates.

Relevant evidence is presented in Summary Table 4. The trends in fiscal ratios and government rates during the 1980s (but not in private interest rates) correspond more closely to Base Case A: unchanged  $prrevdef$ , a rise in  $R(G/AVG)$ , leading to a rise in  $intp$ , and thus in  $fiscdef$  and  $revdef$ . The change in  $revdef$  of 1.9 percentage points is almost all due to the rise in  $intp$ . Both  $prrevdef$  and  $capex$  show very small changes, 0.1 and 0.2 percentage points respectively. During this period,  $R(G/NEW)$  rose sharply, reflecting both underlying economic trends and the Chakravorty Committee

recommendations to align G-Secs to inflation so as to yield a 3% real return, leading to a rise in  $R(G/NEW)$  and  $R(G/AVG)$ .

However the rise in  $R(G/NEW)$  during the 1980s was not enough to adequately mitigate financial repression. The RBI was compelled to issue ad hocs to monetize the deficit and further continue hiking the SLR to ensure that banks were captive buyers of Government bonds (Rangarajan, 2001). Indeed, the rise in  $R(G/NEW)$  was not enough to cope with rising inflation and the government's borrowing needs. Hence stringent financial repression continued to prevail, evidence of which is discussed and analyzed later.

The experience of the 1990s corresponds to some extent with that of Case B regarding fiscal ratios: a cut in capital expenditure (3%) to offset the rise in  $intp$  (1%) so as to keep the fiscal deficit in check. The difference in the actual 1990s changes from Case B is that these do not exactly offset each other. In fact, the cut in  $capex$  during the 1990s (3 percentage points) is much larger than the rise in  $intp$  (1 percentage point), so as to meet a lower  $fiscdef$  target as part of the structural adjustment program. By contrast, in Case B,  $capex$  is cut just enough so as to keep the  $fiscdef$  at the same level.

However, the combined 1980s and 1990s Centre's fiscal ratios perfectly fit the scenario outlined in Case B: an almost unchanged  $prrevdef$ , and a large rise in  $R(G/AVG)$  and  $R(G/NEW)$ , about 500 basis points each, leading to almost a 3 percentage point rise in  $intp$  and  $revdef$ , offset by an equal drop in  $capex$  that keeps the  $fiscdef$  unchanged.<sup>20</sup>

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<sup>20</sup> Mohan (2000) has correctly stressed that the Centre's worsening fiscal situation should not be attributed to wages and salaries, when taking a longer view back to the 1980s, but to interest payments, "The Fifth



The financial changes pertaining to private borrowing during the two decades are harder to club together than the fiscal ratios, to correspond to the model scenario (Case A or B, note that both scenarios are identical with regard to the end of financial repression).

Financial repression continued and in some ways increased, since both the CRR and SLR were raised during the 1980s. Nevertheless, combining the two decades overall, the drastic fall in the SBI advance rate, and more so in the spread between the SBI advance rate and  $R(G/NEW)$ , from 984 basis points in 1979-80 to 33 basis points in 1999-2000, is a robust indicator of the impact of economic policy changes leading to a higher revenue deficit but also lower private borrowing costs.

The policy changes to end financial repression and the movement in  $R(PVT)$  during the 1990s correspond closely to the model scenarios. The government abolished the issue of ad hocs to monetize the deficit, financed a greater share of the deficit through market borrowing, and reduced the Statutory Liquidity Ratio on the banks.  $R(G/NEW)$  rose beyond 14% during 1995-96 and averaged 13.75% during that fiscal year. During the initial years of structural adjustment,  $R(PVT)$  rose, reflecting the removal of non-price ceilings on lending. However, by 1995-96, when  $R(G/NEW)$  peaked at 13.69%, over 200 basis points higher than the base year 1989-90, the SBI Advance rate had fallen by 200 basis points since then. This clearly indicates the differential trend in  $R(G)$  and

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Pay commission is currently regarded as the villain of the piece in causing the current fiscal problems. Analysis of this data suggests that this is not the case at the central government level. The total cost of government salaries excluding defence and police (roughly corresponding to the item 'other non-plan expenditure'), when expressed as a proportion of GDP, can be seen to be much lower than it was through the 1980s. Interest payments are now at least three times that of non-plan government expenditure excluding the militia and the police." However, his conclusion that "rising debt-service obligations constitute a problem" can be questioned for the reasons outlined in this paper.

R(PVT). The movement of the call rate, which had a 10% ceiling until 1989, though erratic, fits the same pattern. It rose to almost 20% at the start of liberalization, fluctuated sharply during the decade, ending at 7.83%, almost 400 basis points lower at decade end.

Thus the most striking stylized fact about the data in Table 3 is that along with the rise in the revenue deficit during the 1990s, the level of R(PVT) and the spread between R(PVT) and R(G/AVG) and R(G/NEW) has come down. This indicates an improvement in the loan rate situation, in contrast to the crowding out view.<sup>21</sup>

Equally critical is the fact that the investment/deposit ratio was close to the Statutory Liquidity Ratio (SLR) during the 1980s but has greatly exceeded it in subsequent years: the gap between the investment-deposit ratio and the SLR was 0.6 percentage points in 1989-90 but rose to 12.8 percentage points by 1999-00 (cf. Table 4. For brevity, data is presented only for 1989, but the situation is similar for most previous years in that decade). This shows that banks are voluntarily holding government bonds, which would be far from the case if they were crowded out. Indeed, the switch from being compelled to hold government bonds to holding them voluntarily, implying no lending constraint, is the single biggest change in the financial environment since liberalisation.<sup>22</sup>

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<sup>21</sup> Critics of this conclusion may claim that the real private lending rate influences investment, and it is generally presumed to have risen in the 1990s. In response, it can be argued that the quantity data on excess government bonds voluntarily held, implying lack of lending constraints, constitutes unambiguously robust evidence about the favourable credit environment. Further, trends in real rates are a function of many factors, including growth and the investment climate. A rise in the real rate may be the result of an investment boom. The movement in the spread, however, isolates the impact of changing financial repression. In any case, a three year moving average of inflation, reveals a 30 basis point drop in the CPI and a 300 basis point drop in the WPI, less than the 450 basis point drop in the SBI advance rate over the decade, a very good indicator of borrowing costs.

<sup>22</sup> Some analysts describe this as a crowding-out effect that hurts bank lending. While the option of investing in a large stock of risk-free gilts does reduce the incentive to lend, the solution to this situation is changes in the legal environment pertaining to lending, such as the SARFAESI Act. When loan rates have

These robust, vital stylized facts can be explained by a basic, two sector model of rationing applied to loanable funds, as has been done using the numerical examples for both Case A and Case B in Part 4. I have done so earlier in a newspaper article (Moorthy, 2000a) interpreting the data on interest rate movements after liberalization:

"Whenever a government preempts savings by borrowing at concessional rates, less is available for the private sector. Hence, under financial repression there is likely to be a large spread between private and government rates. But after liberalisation government rates are likely to rise and private rates fall. At the same maturity, some spread will remain due to the default risk of private borrowers, but it should be lower....Movements in interest rates over the last decade broadly follow this textbook pattern...The big push to financial liberalisation in 1991 led to large swings in interest rates. But comparing 1998-99 with 1989-90 the pattern is clear. Over this period government rates have risen while private rates have fallen....Over any period, the change in the spread between private and government rates is a better indicator of the impact of market borrowings than the change in the level of rates. This is because the **level** of interest rates is affected by several factors: expected inflation, the cyclical state of the economy, the external financial sector and capital account regulations, the current money market operations of the RBI, the level of government spending etc. By contrast, the **spread** filters out the influence of most of these common factors.....Between 1989 and 1999, the spread for the SBI advance rate has fallen by about 500 basis points.....Another clear indication that borrowing conditions are much easier for the private sector comes from the commercial banks excess investment in government securities. For 1998-99, the banks combined investment-deposit ratio was 36%, way above the required SLR of 25%. By contrast in 1989-99 it was 38.6%, just above the prevailing SLR of 38%."

Our co-authored study (Moorthy, Singh & Dhal, 2000) covering various other aspects of the consequences of more market borrowing concluded that

"While R(Commercial Bank weighted lending rate) and the call rate may not closely correspond with the overall cost of private capital (debt plus equity) it is likely that overall private borrowing costs have fallen after liberalization (Moorthy, Singh and Dhal, 2000, pp. 55-56)".

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fallen, providing greater incentive to borrow, and there is no regulatory constraint on lending, this can hardly be described as crowding out.

The only one to recognize this critical conclusion of our study, which is contrary to the crowding out view of more market borrowing, has been Dr. Y.V. Reddy.<sup>23</sup> The amount of sub PLR lending has gone up since the mid 1990s, as is generally known, indicating even lower interest rates than basic data suggest.

#### Other Types of Financial Repression

Most other studies pertaining to the fiscal variables and interest rates have not paid heed to the impact of the end of financial sector repression upon private lending rates. An exception to this has been that of Lall, Bhide and Vasudevan (2001) which uses a variant of McKinnon's (1981) well-known model of financial repression. Their paper makes various assumptions and comes up with various simulation based results. To discuss these results is beyond the domain of this paper; however, their basic conclusions warrant discussion since it is necessary to sort out the consequences of different types of financial repression.

Their main conclusion is that government support for the Small Saving and Provident Fund Rate, henceforth called R(SSPF), leads to extra crowding out since extra interest payments raise the fiscal deficit, and hence keep R(G/AVG) and the IDBI lending rate to private borrowers higher than it would be in a free market. This conclusion: lowering R(SSPF) or abolishing the scheme would lower R(G/NEW) and related private lending rates is certainly correct. Our co-authored study also suggested this, as many others have

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<sup>23</sup> "Above all, as clearly brought out by Professor Vivek Moorthy....in a recent study of the subject, the market orientation of overnment borrowing had a significant favourable impact on the cost of borrowing by the corporate sector..."(Reddy, 2000)

done.<sup>24</sup> However, the magnitude of their estimate (abolishing the SSPF deposit rate support would lower market rates by 400-500 basis points) is empirically tenuous, in my opinion.

More crucially, their model does not distinguish between deposit rate support versus bond yield ceiling. Our paper focuses upon the latter, their paper focuses upon the former. In our approach,  $R(PVT)$  falls despite a rise in  $R(G/New)$  when the ceiling on the latter is removed. In their approach,  $R(PVT)$  falls when  $R(G)$  falls, which is linked to a decline or abolition of the support  $R(SSPF)$ . Further, while the situation they describe pertains to the late 1990s, it is not relevant for the early to mid 1990s and the 1980s, when SLR requirements and other administrative controls prevented  $R(G)$  from rising. But their estimated model covers the whole period. Even as late as 1995-96 and 1996-97, when market borrowing had risen substantially, and the market clearing  $R(G)$  was well above  $R(SSPF)$ , pegged at 12% from 1989 to 1999, nevertheless  $R(PVT)$  fell.

## PART V

### WORSENING OF CONSOLIDATED CENTRE-STATE FINANCES?

For analytical convenience, we first compared the Centre's fiscal trends along with the movements in  $R(PVT)$  to elucidate the model results in Tables 3 (A) and 3 (B).

However, much of the discussion of the worsening fiscal situation during the 1990s (cf. RBI Annual Reports) refers to the combined or consolidated Centre-State finances, which

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<sup>24</sup> "The immediate and subsequent response of yields on government securities to the 1 percent reduction in the PPF rate, announced in January 2000, supports the view that these high administered yields are holding up the cost of government debt. As of late February 2000, government bonds of maturity up to ten years

are in much worse shape than the Centre's finances. The consolidated ratios correspond broadly to Case A: unchanged **fiscdef**, higher **revdef** and a worsened quality of deficit. For the Centre and States combined, a comparison is typically made between the onset of the structural adjustment year, 1990-1991 and 1999-2000. In these years, **fiscdef** was virtually the same (9.4% and 9.5% respectively) while the **revdef** increased by 2.5 percentage points. From a consensus viewpoint, although the Centre's position may have improved, the States' position has worsened enormously.

Comparing our benchmark years 1989-1990 and 1999-2000, the **fiscdef** increased by 0.6 percentage points, while **revdef** went up by 3.1 percentage points, composed of 1.4 rise in **intp** and 1.7 rise in **prrevdef** respectively. The changes in the 1980s are quite similar, as can be seen in Table 5. The cumulative change over both decades, indicates, at first glance, substantial worsening: a 2 percentage point rise in **fiscdef**, a 3.9 percentage point drop in **capex**, and an enormous 5.9 percentage point rise in **revdef**. The level and quality of **fiscdef** have worsened substantially, from a consensus viewpoint.

But decomposing the aggregate deficit measures reveals a less adverse picture. A huge rise in **intp** of 3.6 percentage points over two decades was partly offset by a 1.6 percentage point drop in **prdef**, which fell by 0.8 percentage points in both decades. If the capital-revenue expenditure distinction has no economic significance, then the **prdef** decline is a significant improvement in consolidated Centre-State finances, since the rise in **fiscdef** has come about solely due to rising **intp** and thus due to the end of financial

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were yielding below 11%, typically around 100 basis points or more lower than before the PPF rate cut." (Moorthy, Singh and Dhal, 2000, pp. 41)

repression. Even Rangarajan (2000) has acknowledged that the capital-revenue expenditure distinction is somewhat porous:

"It must be noted that the argument that borrowing by the government for the purposes of capital expenditures which create assets causes no harm loses much of its validity in the Indian context, since the financial return on these assets is nowhere near the rate of interest paid on the borrowing. (p. 26)

However to conclude that the capital-revenue distinction is not meaningful is too extreme. Assuming that capital expenditures are completely productive, the 2.3 percentage points rise in consolidated  $prrevdef$  over two decades is a substantial worsening. But the consensus view, when pointing to the consolidated Centre-State finances, as in Rao and Nath (2001), does not decompose the rise in  $revdef$  to argue that, since  $prrevdef$  has risen substantially, there is an unambiguous fiscal worsening. Their focus is merely on the revenue deficit.

Further, even when assessing the fiscal position by accepting that  $capex$  is beneficial, what needs to be assessed is the content and productivity of capital expenditures and their economic impact. There are two ways to do this: one is to incorporate the impact of current period capital expenditures into the Domar formula and calculate future period returns. In the Domar formula, higher user charges would raise non-tax revenues and lower  $prdef$ , the numerator, while, indirectly, loans repaid with principal and interest would lower  $R(G/AVG)$  in the denominator. Both these changes would improve fiscal outcomes. The other approach is to simply treat some portion of capital expenditure as non-performing revenue expenditure.

This latter approach is more suited to adjusting and comparing current period fiscal ratios, as generally done and in this paper as well. The unadjusted fiscal change of the 1980s and 1990s is as follows: the 2 percentage point rise in **fiscdef** can be considered a substantial worsening since it is 'due to' a 2.3 percentage points rise in **prrevdef**, although the **prdef** has fallen due to a 3.9 percentage point drop in **capex**. However, suppose that 50% of capital expenditure is disguised revenue expenditure. Then adjusted **capex** has fallen by 2.0 percentage points, adjusted **revdef** has risen by 4.0 percentage points, and adjusted **prrevdef** has risen by only by 0.5 percentage points. The fiscal worsening is much less: depending on what share of capital expenditure is assumed to be productive, there could even be a fiscal improvement based on adjusted **prrevdef**.

## PART VI

### SUBSTITUTION OF PRIVATE FOR PUBLIC INVESTMENT

Part IV has argued that the fall in  $R(PVT)$ , and more so the spread between  $R(PVT)$  and  $R(G)$  can be traced to the easing of financial repression and the ensuing rise in  $R(G)$  and in the revenue deficit. While the link between the rise in  $R(G)$  and  $R(PVT)$  is clearcut and robust, the links between lower interest rates and easier credit availability and private investment is weaker. This is true in general: investment is a function of many variables (regulation, confidence, accelerator effects etc) and it is often difficult to precisely isolate the contribution of interest rates and credit conditions, as discussed in footnote #19. It is beyond the domain of this paper to empirically examine whether investment and growth have been boosted by the drop in private borrowing rates over this decade. However, the broad evidence is documented in Table 6 and then assessed.



TABLE 6

<u>Year</u>	<u>GDP Shares at Current Market Prices</u>		<u>Sectoral Shares in Capital Formation</u>		
	<u>Gross Domestic Capital Formation</u>	<u>Net Domestic Cap. Formation</u>	<u>Household</u>	<u>Private Corporate</u>	<u>Public</u>
1989-90	24.5%	16.5%	42.5%	17.1%	40.3%
1999-00	25.2%	17.5%	43.3%	27.3%	29.3%
1999-2000			405	637	289

1989-00 = 1000. Indexed value.

Source: RBI Handbook of Statistics on Indian Economy 2002-03, Table 9 p. 21 and Table 210, p. 443

Overall, there has been a slight rise in both gross and net capital formation (comparison in gross terms, and at current market prices, is better since depreciation estimates and capital goods deflators are unreliable). Turning to the components (household, private corporate and public), the large drop in public capital formation has been offset by a roughly equal ten percentage point rise in private corporate investment.

The indices of capital formation are more relevant than the shares, since they capture the cumulative rise over the period. As can be seen, the index for the private corporate sector has risen sixfold, more than double the rise for the public sector, while that for the household sector has risen over fourfold. Insofar as construction data are substantial underestimates due to black economy related activity, the rise in household investment is vastly understated.

A weath of data indicate a large drop in private lending rates for home construction, consumer durables leading to lower monthly installments and associated surge in lending since the mid 1990s. Undoubtedly investment during the 1990s was determined by

various other factors as well: easier foreign direct investment norms, delicensing, privatization etc. Overall, the evidence is consistent with a large scale substitution of private for public capital formation, along the lines of Part III, and a reverse crowding out effect, as our earlier study concluded.<sup>25</sup>

Although some infrastructure components of public capital expenditures may not be substitutable by private activity, the decline in total public capital expenditures, as a first approximation does not seem to have had an adverse impact. The decline in capital stock in agriculture has led to the suggestion, based on a simulation model, that the deficit be monetized to promote agricultural growth (Rangarajan and Mohanty, 1997). However, Gulati and Bhatia (2001) point to a trend of reverse crowding out in capital formation in agriculture also. This trend offsets the decline in public investment.<sup>26</sup> Further, with the advent of agricultural futures markets, the incentive and prospects for private investment in refrigeration, storage and warehouse facilities is greatly enhanced even if some of these investments do not get classified as agricultural investment.

### SUMMARY

The consensus view that high revenue expenditure or deficit is wasteful and is a drag on growth is conceptually flawed. It has been argued here that nothing should be said

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<sup>25</sup> The drop in public capital formation (1.9 percentage points) has been offset by a greater rise in private investment, indicative of a reverse crowding out effect, and not the crowding in effect that is often emphasized. The indices of capital formation may be more informative in some respects, since the absolute amount of investment and not the ratios to GDP determine the potential output of a country... (Moorthy, Singh and Dhal, 2000, p. 56)

<sup>26</sup> The study, after redefining and reestimating trends in capital formation in agriculture that the situation is not good, but definitely not as bad as is sometimes made out to be. This is because of the increasing share and role of private sector investments over time. And the trend in that has remained robust, despite the

about the economic impact of the revenue deficit without first breaking it down into its two components: interest payments and the primary revenue deficit. If the primary revenue deficit has risen, that is certainly an adverse development. But if the revenue deficit has risen due to a rise in interest payments despite a drop in the primary revenue deficit, a priori nothing can be said without further examining the factors underlying the rise in interest rates.

During the 1980s and 1990s the rise in the Centre's revenue deficit stemmed from a rise in the interest rate on government borrowing, due to de facto and de jure policy changes which simultaneously eased restrictions on lending to the private sector and lowered the rate on private borrowing. It can be concluded that the ensuing rise in the Centre's revenue deficit has indirectly stimulated growth. However, the consolidated Centre-State fiscal situation can be said to have worsened since the primary revenue deficit has gone up by over 2 percentage points. But this rise, and ensuing fiscal worsening, is much less than the enormous 6 percentage point rise in the consolidated revenue deficit that the consensus view points to. Further, if adjustments are made for the quality of capital expenditures, the rise in effective **prrevdef** is even much less. Subsequent changes in fiscal ratios after 1999-2000 are worrisome because of an explosive pension situation (Howes and Murgai, 2004) and the ensuing rise in the primary deficit, but this paper's analysis is confined up to 1999-2000.

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decline in public sector formation in agriculture, and despite the fact that public sector investment has an inducement effect on private sector capital formation. (Gulati & Bhatia, 2001)"

Since the revenue deficit has no clearcut implication for the fiscal situation, the focus of fiscal policy legislation should be the primary deficit, or the primary revenue deficit measure, as argued elsewhere by this author. Further, fiscal control is better achieved by preemptive rules that create procedures to ensure Constitutional checks on legislature mandated spending increases, rather than reactive rules geared to fiscal ratios as is the case in our Fiscal Responsibility Act. (Moorthy, 2001a, 2001 b).

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TABLE 4

## FISCAL RATIOS INTEREST RATES

April 2004

YEAR	prdef	Intp	fisdef	revdef	prrevdef	capex	Centre's	SBI	ICICI	Call	Investment/	Statutory	InvDepRatio	Cash		
							Debt	Advance	PLR	Rate	Deposit	Liquidity	SLR	Reserve		
							Ratio	R(G/AVG)	R(G/NEW)	Rate	Ratio	Ratio	Gap	Ratio		
1970-71	1.8	1.3	3.1	-0.4	-1.7	3.5	41.2	3.4	5.37	7-8.5	8.5	6.38	30	26-28	3	5
1979-80	3.4	1.9	5.3	0.6	-1.3	4.7	41.6	5.3	6.64	16.5	11	8.47	33.5	34	-0.5	6
1970sChange	1.6	0.6	2.2	1.0	0.4	1.2	0.4	2.1	1.27							
1989-90	3.7	3.7	7.3	2.5	-1.2	4.9	55.2	7.7	11.49	16.5	14	11.49	38.6	38	0.6	15
1980sChange	0.3	1.8	2.0	1.9	0.1	0.2	13.6	2.2	4.85							
1990-91	4.1	3.8	7.8	3.3	-0.5	4.6	55.3	8.0	11.41	16.5	14-15.0	15.85	39	38.5	0.5	15
1991-92	1.5	4.1	5.6	2.5	-1.6	3.1	54.3	8.5	11.78	16.5	18-20.0	19.57	39.1	38.5	0.6	15
1992-93	1.2	4.2	5.4	2.5	-1.7	2.9	53.7	8.8	12.46	19	17-19.0	14.42	39.3	37.75	1.55	15
1993-94	2.7	4.3	7.0	3.8	-0.5	3.2	55.6	9.1	12.63	19	14.5-17.5	6.99	42	34.75	7.25	14
1994-95	1.4	4.4	5.7	3.1	-1.3	2.7	53.2	9.2	11.90	15	14.0-17.5	9.4	38.6	31.5	7.1	15
1995-96	0.9	4.2	5.2	2.5	-1.7	2.7	51.0	9.3	13.75	16.5	14	17.73	37.9	31.5	6.4	14
1996-97	0.5	4.3	4.9	2.4	-2.0	2.5	49.4	9.8	13.69	14.5	16.5	7.84	37.7	31.5	6.2	11
1997-98	1.5	4.3	5.8	3.1	-1.3	2.8	51.1	9.7	12.01	14	14-14.5	8.69	36.5	25	11.5	10.25
1998-99	2.0	4.5	6.5	3.8	-0.6	2.7	51.2	10.0	11.86	12.0-14.0	13	7.83	35.6	25	10.6	9
1999-00	0.7	4.7	5.4	3.5	-1.2	1.9	52.7	10.1	11.77	12	13	8.87	37.8	25	12.8	8.5
90sChange	-3.0	1.0	-1.9	1.0	0	-3	-2.5	2.4	0.28						12.2	
80s90sChange	-2.7	2.8	0.1	2.9	0.1	-2.8	11.1	4.8	5.13						na	

Source: RBI Handbook of Statistics on Indian Economy 2002-03. Fiscal ratios, Tables 221, 224. Interest rate and bank variables, Tables 41, 42 and 63. Definitions Tables 2 & 3 of paper..

Note that SLR and CRR have been subject to multiple changes in a given year e.g. 14% Mar 1996, 13.5% Apr 1996, 12% Jun 1996, down to 11% Nov 1996, which prevailed until March 1997. Here 11% is the rate entered for 1996-97.

Investment/Deposit Ratio is the ratio of Investments to Aggregate Deposits, from table 42. SLR is the required minimum investment/deposit ratio.

SLR gap is investment/deposit ratio minus SLR. Small negative values possible, as during some years in 1980s.



TABLE 5

## CONSOLIDATED CENTRE-STATE DEFICITS

April 2004

Year		GRFiscdef	intp	grprimdef	prrevdef	capex	revdef
1980	81	7.5	2.1	5.4	-1.7	7.1	0.4
1981	82	6.3	2.2	4.1	-2.8	6.9	-0.6
1982	83	5.9	2.5	3.4	-2.3	5.7	0.2
1983	84	7.3	2.5	4.8	-1.4	6.2	1.1
1984	85	9	2.8	6.2	-0.7	6.9	2.1
1985	86	8	3.1	4.9	-1.2	6.1	1.9
1986	87	9.9	3.4	6.5	-1	7.5	2.4
1987	88	9.2	3.7	5.5	-0.8	6.3	2.9
1988	89	8.5	3.9	4.6	-1	5.6	2.9
1989	90	8.9	4.3	4.6	-1.1	5.7	3.2
1990	91	9.4	4.4	5	-0.2	5.2	4.2
1991	92	7	4.7	2.3	-1.3	3.6	3.4
1992	93	7	4.9	2.1	-1.7	3.8	3.2
1993	94	8.3	5	3.3	-0.7	4	4.3
1994	95	7.1	5.2	1.9	-1.5	3.4	3.7
1995	96	6.5	4.9	1.6	-1.7	3.3	3.2
1996	97	6.4	5.1	1.3	-1.5	2.8	3.6
1997	98	7.3	5.2	2.1	-1.1	3.2	4.1
1998	99	9	5.3	3.7	1.1	2.6	6.4
1999	0	9.5	5.7	3.8	0.6	3.2	6.3
2000	1	9.5	5.8	3.7	0.8	2.9	6.6
2001	2	10.3	6.3	4	0.7	3.3	7
2002	03F	9.5	6.4	3.1	-0.2	3.3	6.2
80s change		1.4	2.2	-0.8	0.6	-1.4	2.8
90s change		0.6	1.4	-0.8	1.7	-2.5	3.1
1970s/90s		2	3.6	-1.6	2.3	-3.9	5.9
change							

Source: RBI Handbook of Statistics on Indian Economy, 2002-03 Table 223