
Fiscal Expansion: Keynesian Recent Econometric Evidence from India

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Feeling or sense of 'adjustment fatigue' becomes costlier. The present study tries to get some preliminary econometric evidence of fiscal impact on growth during 1990-91 to 2000-01, using data (relative fiscal variables as well as growth variable) relating to the Indian Economy. The study indicates that fiscal policy was marginally effective to influence the growth of the Indian Economy contemporaneously (Keynesian) during the reform period from 1990-91 to 2000-01.

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Introduction

How effective is fiscal policy at stimulating economic activity? Is Keynesian multiplier effect in evidence? The issue continues to be focus of economic research in general and for developing countries in particular, even at present. Recent studies on market economies in recession, conclude that fiscal expansions are more effective when (a) there is excess capacity in the economy in the year before a recession and (b) the economy is open and has fixed exchange rate. Fiscal multipliers are larger for expenditure increases than for the tax cuts.

In this context, the present study tries to get some preliminary econometric evidence of fiscal impact on growth during 1990-91 to 2000-01, using data (relative fiscal variables and growth variable) relating to the Indian economy.

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Section I

Review of Some latest Evidence on Developed as well as Emerging Market Economies - Fiscal Experience

Hemming and others examine the evidence that despite Keynesian orthodoxy, fiscal policy is only marginally effective in countering economic downturns. Uncertainty about the impact of fiscal policy on growth is reflected in debates about its role during the Asian crisis, in attempts to turn around the stagnant Japanese economy, and in questions about the best response to the recent slow down in the United States, as well as in the concurrent weakening in the euro area.

With an average length of slightly less than one and a half years, the typical recession is quite short - most last year, while only a few longer than two years, Japanese experience is historically unique.

Fiscal response to a recession is on average towards a larger deficit, with the fiscal balance deteriorating by slightly less than 2 percent of GDP. Of the 61 recession episodes, fiscal policy was expansionary in this sense in 49 (or 80 percent) of the cases, with the fiscal balance deteriorating by 2.5 percent of GDP on average. For the 12 recession episodes in which policy makers responded with fiscal contraction, the fiscal balance improved by about 0.75 to 1 percent of GDP on average. Fiscal deficits are the norms before, during, and after recession episodes.

The initial fiscal position could clearly be important, and, on average, fiscal deficits and debt are indeed much lower before fiscal expansions. This provides more room for fiscal policy manoeuvre. Inflation was higher and fiscal policy was looser in many advanced economies during the year 1970s and 1980s.

The study concludes that fiscal expansions are more effective when

- (a) there is excess capacity in the economy in the year before a recession; and

(b) the economy is open and has a fixed exchange rate.

Monetary policy is directed toward preserving the fixed exchange rate and fiscal policy is therefore not significantly crowded out by interest rates or the exchange rate. Fiscal expansions are also more effective in closed economies than in open economies with a flexible exchange rate.

Fiscal expansions are generally more effective when government is big because larger automatic stabilizers provide more timely and effective response to recessions. Fiscal multipliers are larger for expenditure increases than for tax cuts.

Authors find that in a closed economy the marginal effect of fiscal policy is Keynesian. A fiscal expansion equivalent to 1 percentage point of GDP increases growth during a recession by 0.7 percentage point. However, the result is different in open economies, which see an overall reduction in growth by 0.8 percentage point when the exchange rate is flexible and by 0.4 percentage point when it is fixed - in other words, in an open economy, fiscal policy becomes non-Keynesian.

Masson and others discuss the experience with budgetary convergence in the West African Economic and Monetary Union (WAEMU: Benin, Burkina, Faso, Cote d'Ivoire, Guinea - Bissau, Mali, Niger, Senegal, and Togo). WAEMU's budgetary convergence criteria specify a budget deficit (fiscal revenue minus expenditures and excluding both grants and - foreign - financed investment) of no more than 3 percent of GDP.

A ceiling on the overall ratio of public debt to GDP is set at 70 per cent as a norm (Central Government finances) in the WAEMU, whereas the EU has a 60 per cent target (Central Government). Authors feel that cyclical conditions are very important factors in a country's ability to meet convergence criteria. Some of the Europe's current difficulties are due to relatively unfavourable cyclical conditions over the past few years. The strength of automatic stabilizers supports progressive taxes and welfare payments that kick in when workers lose their jobs.

In looking at the effect of the cycle on the budget deficit, authors found that, indeed, the fiscal stance is highly sensitive. They estimated that a 1 percentage point shortfall of output from potential worsens the fiscal balance by 0.3 percentage point of GDP on average in the WAEMU, compared with the euro-zone average of 0.5 percentage point. Although smaller in WAEMU, these effects are still significant. For the terms of trade, the effect would be on the order of 0.08 percentage point, which given the large movements in that variable, is associated with a substantial impact on deficit. So they argue that both the growth performance and the terms of trade need to be taken into account to some extent in assessing countries' progress towards fiscal adjustment. Electoral cycle resists governments for fiscal adjustments. However, fiscal adjustment might look at the composition of government spending.

Section II

Recent Empirical Evidence Relating to the Indian Economy

With a view to drawing policy lessons for India, Khatri and Kochhar examined fiscal adjustments pursued by four East Asian countries - Korea, Indonesia, Malaysia and Thailand in the 1950s in the context of their contributions to growth, and increases in savings and investment in these countries. In the 1970s and 1980s, these countries pursued, to varying degrees, a developing strategy relying on protection and heavy government intervention to "pick winners" and influence the direction on industrialisation. It was initially relatively successful. However, these policies proved not to be sustainable and resulted in large domestic and external imbalances - a large public sector, a widening external current account deficits, rising external debt and structural problems.

Fiscal consolidation was at the heart of the adjustment strategy in all cases. After the initial sharp reduction in fiscal deficits, the fiscal consolidation effort was sustained and strengthened with all four countries running fiscal surpluses for a number of years (prior to the Asian crisis). The strengthening of the fiscal consolidation came primarily on the back of strong GDP growth, but also a

continuation of vigilant expenditure policies and further structural reforms.

The outcome of fiscal adjustment (improved tax administration and rational expenditure management) and structural policies in terms of key activity variables - growth, saving and investment were spectacular. Per capita growth rates strongly export led, in excess of 6 per cent per annum was maintained. A sharp increase in domestic investment, led by private investment occurred. However, public saving increased national saving. Any offsetting reduction in private sector savings was felt to only be partial. Fiscal adjustment strongly influenced investors' confidence and led to the surge in capital inflows.

According to authors, in many ways, the initial macroeconomic conditions facing India in 1990-91 were very similar to the ones faced by the four East Asian countries more than a decade earlier. The adverse external shocks of early 1990s precipitated a crisis, which brought India to the brink of default in 1991. In response, a strong stabilisation and adjustment package was put in place, focused on fiscal consolidation, and major structural reforms- including industrial deregulation and trade liberalisation. The India economy's response to the adjustment efforts undertaken since 1991 surpassed even the most optimistic projections. However, India did not succeed in initiating a strong virtuous circle of growth, saving and investment. More progress was needed in reducing fiscal current spending and reorienting its composition.

Salgado highlighted that following the policies implemented in response to the 1991 balance of payments crisis, economic growth in India accelerated in the mid-1990s. Annual GDP growth (at factor cost) in five years to 1996-97 was 6.75 percent, the highest five-year average (based on a moving average) recorded in India since 1950-51. The benefits of reforms were most evident in private fixed investment growth, which surged to an average of 15.25 per cent in the period.

In the late-1990s, however, economic activity weakened substantially. Growth in 2000-01 was only 4 per cent and in the five years to 20012-02 averaged 5.25 per cent.

Following a secular rise starting in the early 1950s, the domestic investment rate of India stagnated in the 1990s. The investment rate peaked in 1995-96 at 27 per cent of GDP and subsequently fell to 24 per cent of GDP in 2000-01. In particular, the private fixed investment rate (in real terms) fell to under 18.5 per cent of GDP in the late-1990s, and the private corporate fixed investment rate fell to 6.75 per cent of GDP.

A model of private investment growth in India was estimated starting with a broad set of potential variables. The regressions were estimated based on annual data from 1970-71 to 1999-2000 and using ordinary least squares with white heteroskedasticity-consistent standard errors. A number of the variables-including lagged output growth, lagged investment growth, inflation, real interest rates, real credit growth were found to be insignificant. The final estimation result was:

$$\begin{aligned} IP = & 0.07 - 0.92 IG + 4.56 WGDP + 0.93 IG \text{ infra} (-1) \\ & (0.07) \quad (-3.05) \quad (1.81) \quad (3.41) \\ & -0.70 EXG(-1) - 0.07 VINFL \\ & (-1.173) \quad (-2.03) \\ R\text{-Square} = & 0.46 \\ \text{Adjusted R-square} = & 0.35; \text{DW statistic} = 2.30 \end{aligned}$$

Where IP was private investment growth (in log), IG was public sector investment growth (in log), WGDP was world output growth (in log), IG infra was public sector infrastructure investment growth (in log), EXG was public expenditure growth excluding infrastructure investment (in log), and VINFL was the monthly variance of WPI omissions; government investment included inventories; and infrastructure investment was investment in agriculture, electricity, gas and water, and transportation, storage and communication.

Almost 70 per cent of the slow down in private investment in the late 1990s was attributed to a deterioration in the composition of public expenditures, which shifted toward public consumption and non-infrastructure investments after 1995-96 compared to the earlier part of the decade.

Section III

Empirical Results in Present Exercises

In the late 1990s, a series of very insightful works on public finance policy issues for India was published. The insights and analysis presented were found useful in designing the next phase of fiscal reforms in India. Public finance experts have devoted most of their attention to taxation and the revenue side of the budget. However, efficacy of public expenditure in order to stimulate growth potential needs to be analytically assessed in order to provide some input towards the sustainability and efficiency of fiscal reforms. Feeling a sense of 'adjustment fatigue' becomes costlier.

The present exercise attempts to stress some econometric evidence out of recent period data indicating fiscal led growth. A full-fledged analysis of the determinants of growth during the current reforms period is not attempted. The note tries to observe any growth dimension of fiscal response during the period from 1991-92 to 2001-02. Empirical debate on various definitions of fiscal deficits is avoided for sake of easy availability of data on fiscal deficits.

Table 1 : Relative Fiscal Variables (% of GDP)

Year	C.F.D.	G.F.D.	C.T.E.	C.D.E.	C.S.S.	RGDP (Growth Rate)
1990-91	9.4	7.85	-	-	-	5.4
1991-92	7.0	5.56	17.05	9.08	1.04	0.8
1992-93	7.0	5.37	16.38	8.75	0.97	5.3
1993-94	8.3	7.01	16.51	8.43	1.40	6.2
1994-95	7.1	5.70	15.87	8.18	1.50	7.8
1995-96	6.5	5.07	15.01	7.11	1.57	7.2
1996-97	6.4	4.88	14.69	6.88	1.48	7.5
1997-98	7.3	5.84	15.24	7.29	1.63	5.0
1998-99	8.9	6.45	15.89	7.81	1.65	6.5
1999-2000	9.4	5.35	15.23	6.60	1.63	6.1
2000-01	9.1	5.13	15.36	6.44	1.58	4.0
2001-02	8.1	4.70	15.16	6.36	1.56	5.4
Period Average	7.80	5.70	15.60	7.40	1.40	5.6

Source: RBI Reports

Notations:

CFD	=	Combined Fiscal Deficit (Gross) State and Central
GFD	=	Central Gross Fiscal Deficit
RGDP	=	Real GDP Growth
CTE	=	Central Total Expenditure
CDE	=	Central Development Expenditure
CSS	=	Central Social Sector

Simple econometric exercise was carried during the same period using all variables of Table 1 in order to have some preliminary idea about correlations among different fiscal variables and real GDP. It might be focused that the association between real GDP and other fiscal variables did not show any significant contemporaneous relation. Central social expenditure showed some contemporaneous association. However, association was in the lagged nature among variables during the reform period. Table 2 below presents Pearson correlation.

Pearson Correlation Matrix : 1990-91 to 2001-02

	RGDP
GFD	.041
GFD-1	.494
GFD-2	-.014
CFD	-.092
CFD-1	-.340
CFD-2	-.400
CTE	-.557
CTE-1	.215
CTE-2	.342
CDE	-.309
CDE-1	.377
CDE-2	.484
CSS	.514
CSS-1	-.005
CSS-2	-.591

Taking a cue from the correlation matrix, the various ordinary regression models were attempted during 1990-91 to 2001-02. The following estimated models are reasonably accepted.

$$(1) \text{ RGDP} = 4.970 + 0.041 \text{ GFD}$$

(t value) (0.932) (0.122)

Adjusted R Square = 0.109
D-W Statistic : 1.034

$$(2) \text{ RGDP} = 3.733 + 0.708 \text{ GFD-1} - 0.594 \text{ CFD-1}$$

(t value) (1,290) (2.610) (2.192)

Adjusted R Square = 0.424
D-W Statistic: 1.806

The preliminary empirical exercises thus suggest that fiscal response during the current fiscal reform initiatives had some evidence of Keynesian orthodoxy. However, fiscal policy was marginally effective to influence the growth of the Indian economy contemporaneously during the reform period. Lagged effect of fiscal deficits on growth signalled more towards some policy input for fiscal reforms. Using partial coefficients, it might be crudely implicated that a reduction of 1 percentage point in the combined fiscal deficit ratio might increase the real growth of the economy by around 0.6 percentage point within a span of two years (non Keynesian). However, a reduction of 1 percentage point in Central gross fiscal deficit ratio might reduce the real growth by around 0.7 percentage point within a span of two years (Keynesian). The quality of fiscal deficit matters. Vigilant expenditure policy is deeply warranted.

Section IV

Concluding Remarks

Sound performance of public institutions (less direct roles in productive economic activity) is increasingly felt to be at the heart of the sustainable economic development. Proper resource allocation for targeted interventions established the private-public economic linkages. Decisive government action through long-term goal might emphasize protecting increasing budget allocation in critical areas. The authorities might thus achieve a break through in community

participation and civil society involvement in basic social services, especially for the poor.

The social protection in Keynesian perception through temporary employment, job-skills training and assistance for job search or self-employment might need special attention as indispensable to enhancing development effectiveness. However, further efforts are needed on public expenditure issues-including improving the quality and efficiency of public expenditure, and strengthening government spending management system.

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