AN EMPIRICAL ANALYSIS OF THE FINANCES OF THE INDIAN UNION GOVERNMENT

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Abstract

In this paper, a trend analysis of fiscal deficits is done and impacts of various reforms for fiscal consolidation are studied. Trends of government finances in India since 1980s have remained a cause of worry. In the latter half of the eighties, fiscal and revenue deficits were in the range of 7-8 and 2-3 percent of the GDP. Fiscal consolidation was, hence, a major focus of the reform process introduced in 1991-92. The nineties had also seen varied performance of the deficit indicators. In the early nineties, there was a decline in the deficits. However, during the latter half of the nineties and the early 2000s the deficit indicators climbed back to near-about their mid-eighties levels. Fiscal Responsibility and Budget Management Act was adopted in 2003 with the focus on tax reforms, expenditure management, restructuring of PSUs and better co-ordination between monetary and fiscal policies. Post these reforms the fiscal status of India had improved. Again in 2008-09, the deficits widened because of the global financial crisis. With the recovery of the economy, on the path of fiscal consolidation, the deficits have shown some improvements in the recent years.

The study is based on secondary data collected from the various issues of Reserve Bank of India Bulletin, Reports on Currency and Finance, Economic Surveys and various reports of the Ministry of Finance. The study regresses Fiscal Deficit to GDP (at market price) ratio against various components of deficits to find out the impact of these variables on fiscal balance. An empirical analysis of the finances of the Indian union government show that deficits could be controlled by cutting down the expenditures, as the revenue enhancement was not happening. Thus, there is a need for reforming and restructuring the economy.

Keywords: fiscal deficits, fiscal reforms, revenue deficits.

I. Introduction

A comprehensive indicator of the government's deficit is the Gross Fiscal Deficit. It is the difference between the government's total receipts (excluding borrowing) and total expenditures. In simpler words, it is the difference between the total incomes and the total expenditures of the government, which are financed through borrowings. Therefore, it also provides a measure of the increase in public debt during the year.

Gross Fiscal Deficit = Total Expenditures (Revenue Expenditures + Capital Expenditures) – Total Receipts (Revenue Receipts + Recoveries of Loans + Other Capital Receipts)

The difference between revenue expenditures and revenue receipts is known as revenue deficit. It shows the shortfall of government's current receipts over current expenditures. Revenue deficit gives evidence of the deficit between revenue incomes and expenditures, which are normally met by a capital account surplus, or borrowings. The revenue deficit or the revenue surplus measures the difference between the revenue receipts of the government (made up of tax revenues plus non-tax revenues) and the non-investment (consumption) expenditures of the government. It seeks to focus on the revenue account in the gross fiscal deficit by excluding the capital account.

Revenue Deficit = Revenue Expenditures – Revenue Receipts
(Tax + Non-tax Revenues)

Reducing fiscal deficits is, both necessary and sufficient for macroeconomic adjustments. However, the real issue is the allocation and end-use of government expenditures in relation to the cost of borrowings by the government. Thus, there is a need for a sound fiscal policy, which helps the government to minimise the negative impact of the business cycles in the economy, without compromising on growth. Fiscal policy is an instrument by which the government adjusts its levels of spendings in order to monitor and influence the economy. It encompasses the taxation and expenditure policies of the government. A sound tax system, with moderate rates and a broad base, is an integral part of a prudent fiscal policy. Increased tax compliance and improvement of the efficiency of tax administration needs to be emphasised along with a focus on reducing the expenditures, reduction in subsidies and disinvestments, to bring in a sustainable economic development.

The rest of the paper is organised as follows: Section II deals with the available studies on the trends of government finances and deficits in India since 1980. A detailed analysis of the trends of the government finances is done in section III. Section IV deals with the Regression analysis of the determinants of fiscal deficits. Lastly, Section V, is the concluding section and policy implications for the study are discussed.

The study is based on secondary data collected from the various issues of Reserve Bank of India Bulletin, Reports on Currency and Finance, Economic Survey and various reports of the Ministry of Finance. Simple Ordinary Least Square (OLS) method has been applied to examine the determinants of fiscal deficits in India. Fiscal deficit to GDP ratio has been taken as the indicator of fiscal balance. The study regresses Fiscal Deficit to GDP (at market price) ratio against various components of deficits to find out the impact of these variables on fiscal balance.

II. Literature Review

The empirical work during the last three decades have focused on the magnitude and growth of fiscal deficits, reasons for the persistence and remedial measures taken to contain the deficits. Lahiri (2000), Mohan (2000, 2004), E.A.S. Sarma and J.V.M. Sarma (2003), Kochhar (2004), Rajaraman (2004), Roubini and Hemming (2004), Hausmann and Purfield (2004), Heller (2004), Nirvikar Singh and T. N. Srinivasan (2004), Nayyar (2008) and Rao, M.G. (2009) have provided qualitative and empirical summaries of India's fiscal situation. Ajit Karnik (2002), Brian Pinto and Farah Zahir (2004), C. Ranrarajan (2005), Kumar and Soumya (2010) and Supriyo Dey (2012) have analysed the reasons for the deterioration in India's public finances. They were high oil prices, a slowdown in the economy, increasing interest payments, high defence expenditures, rising subsidies, Pay Commission awards, elimination of financial repression and incomplete tax reforms. The economic crisis and reforms in the Indian economy has been discussed in detail by Srinivasan (1994), Rao D. Tripati (2002), Nirvikar Singh and T. N. Srinivasan (2004) and Mihir Rakshit (2005). The fiscal reform measures suggested in Economic Surveys of various years were aimed at reduction of the budget deficits through expenditure controls – elimination of monetisation of deficits, progressive reduction of subsidies and closure of sick public sector units (PSUs), controlling government pay and allowances and revenue generation through greater tax compliance with tax reforms – reduction and rationalisation of tax rates.

From the review of the literature, it emerges that the trends of deficits and a series of reform measures have been suggested by many and most of them have concluded that the reforms have not been able to make a great impact on the economy. The study is a comprehensive attempt to study the frequent variations in the fiscal performance of the union Government and the causes thereof with an aim to suggest reforms that will help long term.

III. Trends in Fiscal and Revenue Deficits

Table 1 shows that the budgetary position of the Central Government was under a considerable strain during the eighties. The gross fiscal deficit increased about 5 times during this decade, from 5.55 per cent of GDP in 1980-81 to 7.61 per cent in 1990-91.

In absolute terms, the revenue deficits increased by almost six times from Rs.2,037 crores to Rs. 18,562 crores in this decade. As a proportion of GDP, the Centre's revenue account deficit was 1.36 per cent in 1980-81 and had increased to 3.17 per cent in 1990-91. The expenditures were high because of the high non-plan expenditures on defence and interest payments and high expenditures undertaken on development projects. Rapid deterioration in the government finances during the late eighties caused by the implementation of the fourth pay commission and the severe drought of 1987 resulted in a steep rise in the Central Government's fiscal deficit to GDP ratio, which culminated in a balance of payments crisis. During the eighties, fiscal deficit as a percentage of GDP increased from 5.55 per cent to 7.10 per cent, showing an increase of 1.55 per cent with a peak at 8.13 per cent in 1986-87. This could be attributed to the implementation of the fourth pay commission and the severe drought of 1987. It was at this time the need for reforms was realized and thus the government undertook the economic reforms of 1991.

Rapid deterioration in the government finances during the late eighties caused by a faster rise in expenditures growth relative to revenues growth resulted in a steep rise in the Central Government's fiscal deficit to GDP ratio, which culminated in a balance of payments crisis.

Post 1991 reforms the fiscal performance in terms of movements in the revenue and gross fiscal deficits may be characterised in distinct phases based on the performance: the period of improvement from 1991-92 to 1996-97; the period of worsening from 1997-98 to 2001-02 and the period of improvement since 2002-03 which was accelerated by the enactment of the Fiscal Responsibility and Budget Management Act, 2003 and finally the phase following the global financial crisis in 2008. The progress on fiscal correction was mixed during the nineties. Because of the efforts undertaken to restore fiscal balance through tax reforms, institutional reforms, financial sector reforms and expenditure management in the first half of the nineties, there was a significant reduction in the magnitude of fiscal deficits during the period 1991 to 1997. While there was some reduction in the Centre's fiscal deficits up to 1996-97, the trend was reversed afterwards under the impact of the industrial slowdown and the implementation of recommendations of the Fifth Pay Commissions' award. Fiscal consolidation, which was sought to be achieved through revenue enhancements and curtailment in current expenditures growth, was, however, brought about through compression of capital expenditures, with consequential effects on growth and infrastructure constraints in the future.

Table 1: Gross Fiscal and Revenue Deficits of the Central Government

Year	(Rupees in Crores)		As a Percentage of GDP							
	Revenue Deficits	Gross Fiscal Deficits	Revenue Deficits	Gross Fiscal Deficits	Total Receipts	of which		Total Expenditures	of which	
						Revenue Receipts	Capital Receipts		Revenue Expenditures	Capital Expenditures
1980-81	2037	8299	1.36	5.55	13.56	8.27	5.29	15.21	9.63	5.58
1981-82	384	8666	0.21	4.93	13.58	8.55	5.03	14.37	8.76	5.61
1982-83	1308	10627	0.66	5.40	14.82	8.87	5.95	15.66	9.53	6.13
1983-84	2540	13030	1.11	5.69	14.90	8.61	6.29	15.52	9.72	5.80
1984-85	4225	17416	1.65	6.79	15.54	9.14	6.40	17.00	10.79	6.21
1985-86	5889	21858	2.04	7.55	16.35	9.68	6.67	18.19	11.72	6.47
1986-87	7777	26342	2.40	8.13	16.87	10.21	6.66	19.42	12.61	6.81
1987-88	9137	27044	2.48	7.34	16.96	10.06	6.90	18.54	12.54	6.00
1988-89	10515	30923	2.40	7.08	16.82	9.98	6.84	18.11	12.38	5.73
1989-90	11914	35632	2.37	7.10	16.40	10.42	5.98	18.51	12.79	5.72
1990-91	18562	44632	3.17	7.61	16.02	9.37	6.65	17.96	12.54	5.42
1991-92	16262	36325	2.41	5.39	15.52	9.80	5.72	16.53	12.21	4.32
1992-93	18574	40173	2.40	5.19	14.24	9.57	4.67	15.83	11.97	3.86
1993-94	32716	60257	3.68	6.76	14.68	8.46	6.22	15.91	12.14	3.77
1994-95	31029	57703	2.97	5.52	15.28	8.71	6.57	15.37	11.68	3.69
1995-96	29731	60243	2.42	4.91	13.74	8.98	4.76	14.53	11.40	3.13
1996-97	32654	66733	2.30	4.70	13.24	8.90	4.34	14.16	11.20	2.96
1997-98	46434	88937	2.95	5.66	14.82	8.52	6.30	14.76	11.47	3.29
1998-99	66976	113349	3.71	6.29	15.50	8.29	7.21	15.49	12.00	3.49
1999-00	67596	104716	3.36	5.20	14.77	9.02	5.75	14.81	12.38	2.43
2000-01	85234	118816	3.93	5.48	15.07	8.88	6.19	15.01	12.81	2.20
2001-02	100162	140955	4.27	6.00	15.49	8.57	6.92	15.43	12.84	2.59
2002-03	107879	145072	4.26	5.73	16.25	9.12	7.13	16.33	13.38	2.95
2003-04	98261	123273	3.46	4.34	16.75	9.30	7.45	16.60	12.76	3.84
2004-05	78338	125794	2.41	3.88	15.62	9.44	6.18	15.37	11.85	3.52
2005-06	92299	146435	2.50	3.96	14.26	9.40	4.86	13.69	11.90	1.79
2006-07	80222	142573	1.87	3.32	13.58	10.11	3.47	13.58	11.98	1.60
2007-08	52569	126912	1.05	2.54	14.29	10.87	3.42	14.29	11.92	2.37
2008-09	253539	336992	4.50	5.99	15.70	9.60	6.10	15.70	14.10	1.60
2009-10	338998	418482	5.25	6.48	15.86	8.87	6.99	15.87	14.12	1.75
2010-11	252251	373592	3.29	4.87	15.51	10.27	5.24	15.60	13.60	2.04
2011-12	394348	515990	4.45	5.83	14.91	8.49	6.42	14.73	12.94	1.79

Source: various budgets documents of government of India

Economic reforms reduced the fiscal deficit to 5.48 per cent in 2000-01. However, there was no improvement in the revenue deficit. The revenue deficit of 3.93 per cent called for reforms once again and Fiscal Responsibility and Budget Management Act was passed in 2003.

There was a steady reduction in both revenue and fiscal deficits after the FRBM Act was passed in 2003. The fiscal deficit relative to GDP declined to 2.54 per cent in 2007-08. Similarly, revenue deficits declined to 1.05 per cent in 2007-08.

In 2008-09, there was a sharp reversal of the trend. The main reason for this deterioration was the global financial crisis that led to the slowdown of the economy. A part of the problem was also due to non-payment of fertiliser subsidies accruing in 2007-08 and partly it was due to the decline in tax-GDP in

2008-09 due to the slowdown in the economy and the tax cuts announced as a part of the fiscal stimulus package. As the crisis unfolded, the government activated a series of stimulus packages on 7th December 2008, 2nd January 2009 and 24th February 2009. As regards the expenditures, the government already had an expansionary fiscal stance in view of a rural farm loan waiver scheme, the expansion of social security schemes under the National Rural Employment Guarantee Act (NREGA) and the implementation of revised salaries and compensations for the central public servants as per the recommendations of the Sixth Pay Commission. Furthermore, the parliamentary elections of 2008 also resulted in further government expenditures. High fiscal deficits of 6.48 per cent in 2009-10 were chiefly due to stimulus spending worth billions of dollars to combat the global meltdown.

The year 2010-11 showed a reduction in deficits due to higher than expected non-tax revenues from the auction of 3G and broadband wireless access spectrum (that garnered Rs. 1.08 crores). The government also followed the path of consolidation during 2010-11 as it partially withdrew the sops given to the industry in 2008 and 2009. The Central Government's key deficit indicators have worsened during 2011-12, primarily on account of a decline in revenue receipts, particularly tax revenues, underachievement in budgeted disinvestments as well as increase in revenue expenditures, mainly oil & fertiliser subsidies. With the rise in international crude oil prices, the budgeted oil & fertiliser subsidies had elevated multi-fold.

IV. Empirical Analysis of the Determinants of the Fiscal Deficit

Ordinary Least Square (OLS) method has been applied in Microsoft excel to examine the impact of various variables on the fiscal balance. Fiscal deficit to GDP ratio has been taken as an indicator of fiscal balance.

Model 1: With the help of a multiple regression model, the determinants of fiscal deficit have been analysed. Fiscal deficit is taken as the dependent variable and Total Revenues and Total Expenditures are taken as the independent variables.

Gross Fiscal Deficit = f {Total Revenues, Total Expenditures}

Symbolically, the model can be written as:

$$GFD = \beta_0 + \beta_1 TR + \beta_2 TE + u$$

Where,

GFD - Gross Fiscal Deficit

TR - Total Revenues

TE - Total Expenditures

β - Coefficients

u - Error Term

Summary Output

Regression Statistics	
Multiple R	0.817331
R Square	0.66803
Adjusted R Square	0.645135
Standard Error	0.76026
Observations	32

	Coefficients	*Standard Error*	*t- Stat*	*P-value*
Intercept	-3.94911	2.016686	-1.95822	0.059886
TE	0.829954	0.167718	4.948497	0.000030
TR	-0.23434	0.238514	-0.98251	0.333975

From the above analysis, we see that R-square is 0.67 approximately, which shows that total expenditures and revenues together account for 67 per cent variation in fiscal deficits.

An increase of total revenues by Rs. 1 crore decreases fiscal deficits by Rs. 0.23 crores (approx.). A larger increase in revenues in thus needed to decrease the deficits. The t-statistic for total revenues is -0.98, which is less than 5 per cent table value of the t-statistic (2.086). P-value is 0.33, which is much higher than 0.05. Therefore, we can say that total revenues are not so significant in reducing the deficits.

When total expenditures are increased by Rs. 1 crore, the fiscal deficits increase by Rs. 0.83 crores, as the coefficient of total expenditures is 0.829954. There is a positive and high degree of correlation between total expenditures and deficits. The P- value for total expenditures is 0.00003, which is less than 0.05. The t-statistic is 4.94, which is greater than the table value of the t-statistic at 5 per cent (2.086). Therefore, we conclude that total expenditures are statistically significant in reducing the fiscal deficits.

Model 2: To study the impact of revenue and capital expenditures on the gross fiscal deficit, Fiscal Deficit to GDP (at market price) ratio is regressed against these two.

Gross Fiscal Deficit = f {Revenue Expenditures, Capital Expenditures}

Symbolically, the model can be written as:

$$\mathbf{GFD = \beta_0 + \beta_1 RE + \beta_2 KE + u}$$

Where,

GFD - Gross Fiscal Deficit

RE - Revenue Expenditures

KE - Capital Expenditures

u - Disturbance term.

Summary Output

Regression Statistics	
Multiple R	0.81060458
R Square	0.657079785
Adjusted R Square	0.633430115
Standard Error	0.772696657
Observations	32

	Coefficients	*Standard Error*	*t- Stat*	*P-value*
Intercept	-5.064967582	1.778214717	-2.8483442	0.007999
Revenue Expenditures	0.668416323	0.129412844	5.164992136	1.6E-05
Capital Expenditures	0.697769211	0.096021121	7.266830512	5.3E-08

In the previous model, we saw that it is the expenditures of the government that significantly affect the deficits of the government. Now, whether it is the revenue or the capital expenditures that affect the deficits more are studied in this model. The value of R-square is calculated to be 0.66, which reveal that the independent variables included in the model are 66 per cent accountable for variations in the fiscal deficit.

t-stat for both, revenue and capital expenditures is more than the table value of t and p values are much lower than 0.05. Therefore, both the revenue and capital expenditures are statistically significant in reducing the deficits. However, Rs. 1 crore increase in revenue expenditures increase fiscal deficits by Rs. 0.67 crores. On the other hand, the correlation between fiscal deficits and capital expenditures is higher. Rs. 1 crore increase in capital expenditures increase fiscal deficits by Rs. 0.70 crores. This implies that capital expenditures can be reduced to bring down the fiscal deficits more effectively. The major components of revenue expenditures are defence expenditures, interest payments and subsidies. The government has limited scope to reduce defence budget due to security problems across the Indian borders. The interest payments on both domestic loans and foreign loans have been one of the major components of government expenditures and have been increasing throughout as the government debt has increased considerably over the years. The government has been providing subsidies on a number of items such as fertilisers, exports, food and fuel and the subsidies provided by the Union Government in India has been increasing over the years resulting in fiscal imbalance. It is therefore difficult for the government to reduce the revenue expenditures. Thus, to reduce the deficits, it is the capital expenditures that are always reduced. This analysis confirms the trend analysis of fiscal deficits done in part III of the paper, which showed that deficits could be controlled by cutting down the expenditures, as the revenue enhancement was not happening.

V. Conclusion and Policy Implications

Rapid deterioration in the government finances during the late eighties caused by a faster rise in expenditures growth relative to revenues growth resulted in a steep rise in the Central Government's fiscal deficit to GDP ratio, which culminated in a balance of payments crisis.

Post-reforms the fiscal performance in terms of movements in the revenue and gross fiscal deficits may be characterised in distinct phases based on the performance: the period of improvement from 1991-92 to 1996-97; the period of worsening from 1997-98 to 2001-02 and the period of improvement since 2002-03 which was accelerated by the enactment of the Fiscal Responsibility and Budget Management Act, 2003 and finally the phase following the global financial crisis in 2008.

Since the fiscal correction in the nineties was achieved through cutbacks in capital expenditures, rather than through improved revenues, the consolidation efforts could not be sustained for long. In contrast, substantial contribution from tax revenues coupled with declining interest payments/GDP ratio and reduced net lending helped in achieving the fiscal consolidation during the third phase i.e., 2002-03 to 2007-08. The slowdown in the economy in 2008-09 resulted in a sharp reversal of the trend.

Till now deficits were being lowered by cutting down the capital expenditures. Instead, the focus should be on reviving growth in India. There is a need to increase the revenues of the government. India is massively under-taxed, as Deutsche Bank noted in its budget report this week, saying "there should be no disagreement that on aggregate the economy is under-taxed." Only about 3% of Indians are subject to an income tax, compared to 20% of Chinese, according to a study in the American Economic Journal. Total tax revenue as a percentage of GDP is only 10% in India, among the lowest in emerging economies. Therefore, comprehensive reforms to broaden the tax base, reduce tax breaks for the corporate sector, and improve tax collection and tax administration are required.

Instead of cutting down capital expenditures, there government needs to spend more to create more economic activities. That means better roads, ports and reliable supplies of power and water. It also means investing in education and health so India's people have the skills and strength to join an industrial labor force. India spends less of its GDP on public education and health than its peers - 4.7 percent, compared to Mexico's 8.5 percent and Brazil's 10.1 percent, according to the World Bank. The U.S. spends 13.7%. Therefore, India's government needs to sharply increase capital expenditure if it wants to meet its development goals. The Prime Minister Modi's 'Make in India' campaign is an Indian government strategy to create jobs and boost the national economy by attracting foreign businesses to invest and produce in India.

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Web Resources:

- www.indiabudget.nic.in.
- www.rbi.org.in.
- www.finmin.nic.in