

Review Paper

Impact of FRBM Act on Public Debt and Fiscal Balance in India: Emerging Evidence

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ABSTRACT

The government expenditure has important role in generation of employment, increase social welfare and economic development of the nation. The government spending is financed mainly by revenue which includes the tax revenue and non-tax revenue. If there is deficit in the budget, the government takes borrowing from public to meet the gap between their revenue and expenditure. The government was facing a high level fiscal deficit. Indian economy was continuously facing problems in maintaining the fiscal balance and it was great challenge against macroeconomic stability. Therefore, fiscal imbalance situation forced the government to go for more borrowing by public which included both internal and external borrowings. The aim of the present paper is to examine the impact of the FRBM Act on public borrowing and fiscal balance in India. Also focused on trends and patterns of public expenditure, revenue mobilization, fiscal deficit and public debt after the introduction FRBM Act. The OLS Method used for test the empirical relationship between public debt and economic growth in India after the introduction of the FRBM Act. The OLS empirical results showed the FRBM Act have a significant effect on level of gross fiscal deficit at 1 percent level of significance but not statistically significant effect on level of public debt in India. GDP growth rate has a negative effect on the gross fiscal deficit at 5 percent level of significant. It shows when GDP growth rate is increasing fiscal deficit to GDP ratio is declining and vice-versa. Population growth has positive effects on gross fiscal deficit level at 10 percent level of significant. GDP growth rate and population growth rate does not have significant effects on level of public debt in India. Therefore, the study suggests that efficient debt management strategy is important for the sustainability of the budget, debt, and overall financial stability.

HIGHLIGHTS

- ① FRBM Act does not have a significant effect on the public debt in India.
- ② FRBM has a significant effect on the gross fiscal deficit in India at a 1 percent level of statistical significance.

Keywords: FRBM Act, Public Debt, Fiscal Deficit, Economic Growth

Government expenditure plays an important role in the generation of employment, increase social welfare, and development of the nation. Government spending is financed mainly by revenue, which includes tax revenue and non-tax revenue. If there is a deficit in the budget, the government takes public borrowing to meet the gap between their revenue and expenditure. Public borrowing includes internal and external public borrowings. Most of the nations are preferred only internal

borrowing because it bears lesser burdens than external borrowings. If internal borrowings are not well-developed government will move to external borrowings. Increasing government expenditure causes a high fiscal deficit. The net borrowing of

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the government is called a fiscal deficit. Before 1991, India had faced a balance of payments problems. Due to more expenditure by the government whereas the income generated was less. It increases public debt. The central government had a huge gap between income and expenditure. The government was facing a high-level fiscal deficit. The Indian economy was continuously faced problems in maintaining fiscal balance. It was a great challenge against macroeconomic stability. Therefore, the fiscal imbalance situation forced the government to go for more borrowing by the public, which included both internal and external borrowings.

Co-integration and Granger Causality tests based on more than three and a half decades of annual data support the hypothesis of Ricardian equivalence in India. The results of the Granger causality test show no relationship between the series Singh's (1999). Panda (2019) public debt harms economic growth, has a positive impact on the long-term interest rate and has a mixed response (both negative and positive) on investment and inflation in India. Suggested that the domestic debt should be controlled and used more productively to have a favorable impact on the economy. The recent years, maintaining the sustainability of fiscal balance becomes very important to every nation, when their public expenditure is financed by public debt. Government expenditure size is the major factor to determine the public debt. If the government expenditure is less productive or unproductive heads growth suffers as well as tax revenue of the government declines. It becomes difficult to repay the public debt and fiscal balance is adversely affected. So, growth is important for maintaining fiscal health and the feasibility of fiscal policy. The recent public debt management with the sustainability of debt and fiscal discipline has been given considerable attention in both developed and developing nations. Sasmal, (2017) examined the impact of public expenditure on economic growth and viability of fiscal policy when the public expenditure is financed by public borrowing. The ratio of gross fiscal deficit to net national product (NNP) has increased with an increase in total expenditure of the government indicating non-sustainability of fiscal balance. Their study also shows that private capital has a significant positive impact on NNP but the effect of fiscal deficit on economic growth is not clear.

In India, the central government introduced the Fiscal Responsibility and Budget Management Act (FRBM Act) Bill in December 2000 to achieve foster fiscal discipline achieving a balanced budget with effective revenue management. The Act was passed on August 26, 2003, called as Fiscal Responsibility and Budget Management Act (FRBMA), 2003. FRBMA came into effect on July 5, 2004. The FRBM Act sets the targets and suggests means of reducing fiscal and revenue deficits. To achieve the targeted debt to GDP ratio, it proposed yearly targets to progressively reduce the fiscal and revenue deficits. Debt refers to the total outstanding liabilities of the government, fiscal deficit indicates that new borrowings were made in the year and the revenue deficit indicates what part of these new borrowings have been used to cover revenue expenses (Khullar, 2017). Public borrowing is one of the major instruments of resource mobilization. The present paper aims to examine the impact of the FRBM Act on public borrowing or Public Debt and fiscal balance in India.

RESEARCH METHODOLOGY

The present study was based on secondary data, such as public expenditure, public revenue, and public debt by sources, fiscal deficits, and economic growth. These data was collected and analyzed based on the pre and post-reform period. Independent-Samples Kruskal-Wallis test and OLS method were used in this paper. The simple Ordinary Least Square (OLS) method has been applied to examine the impact of the FRBM Act 2003 on Indian public debt position and fiscal balance in India by using Stata 13 software. The data have been collected from RBI. The yearly time series data have been taken for the period from 1980-81 to 2017-18. Here FRBM Act is dummy is taken as 1 for the year which has FRBM ACT and 0 is for other years.

The Models

The first equation shows the total public debt to GDP ratio is a function of GDP growth, population growth, FRBM Act, and previous lagged debt level. The second equation also showed the gross fiscal deficit to GDP ratio is a function of GDP growth, population growth, FRBM Act, and previous lagged fiscal deficit level. Symbolically, the models can be written as:

$$\text{TPDGDP} = f(\text{GDPGR}, \text{POPGR}, \text{DUMMY}, \text{TPDGDP}_{-1}) \quad \dots(1)$$

$$\text{GFDGDP} = f(\text{GDPGR}, \text{POPGR}, \text{DUMMY}, \text{GFDGDP}_{-1}) \quad \dots(2)$$

Where,

TPDGDP: Total Public Debt to GDP Ratio (%)

TPDGDP₋₁: Previous Debt (Lagged)

GFDGDP: Gross Fiscal Deficit to GDP Ratio (%)

GFDGDP₋₁: Previous Fiscal Deficit (Lagged)

GDPGR: Gross Domestic Product Growth Rate (%)

POPGR: Population Growth Rate (%)

DUMMY: dummy variable where 1 is assigned for the years FRBM Act and 0 is assigned for other years. Symbolically, the model is written as.

RESULTS AND DISCUSSION

Summary of Statistics and Hypothesis Test Summary

Table 1 shows the mean and standard deviation

values for all considered variables during 1981-82 to 2017-18. The mean values of considered variables were found quite more in the Post-FRBM Act period compared to the pre-FRBM Act and total period. The Mean values of All variables such as (Exp/GDP 15.0; Rev/GDP 15.1; RD/GDP 3.2; GFD/GDP 4.6; TPD/GDP 42.8;) more in post FRBM Act period compare to that of pre FRBM Act. The Variance values (Exp/GDP 10.4; Rev/GDP 10.2; RD/GDP 1.7; GFD/GDP 2.3; TPD/GDP 130.6;) more in post FRBM Act period compare to that of pre FRBM Act. The Standard deviation values of All variables such as (Exp/GDP 3.2; Rev/GDP 3.2; RD/GDP 1.3; GFD/GDP 1.5; TPD/GDP 11.4;) more in post FRBM Act period compare to that of pre FRBM Act. Mean, variance and standard deviations values more in post FRBM Act. Hence, there is a more variation found after the introduction of the FRBM Act period compared to that of the Pre-FRBM Act period in considered variables.

Table 2 reveals that the gross fiscal deficit to GDP, total public debt to GDP, and also the growth rate of GDP were not statistically significant because of probability value is greater than the 0.05 level of significant ($p = 0.4686 > 0.05$) in all the cases.

Table 1: Summary of Statistics of Variables

Indicators	Mean Values			Variance			Standard Deviation		
	Pre FRBM Act	Post FRBM Act	Total Period	Pre FRBM Act	Post FRBM Act	Total Period	Pre FRBM Act	Post FRBM Act	Total Period
Exp/GDP	5.7	15.0	9.5	6.4	10.4	29.5	2.5	3.2	5.4
Rev/GDP	5.4	15.1	9.4	6.9	10.2	31.1	2.6	3.2	5.6
RD/GDP	1.1	3.2	1.9	0.7	1.7	2.2	0.8	1.3	1.5
GFD/GDP	2.1	4.6	3.4	0.9	2.3	3.0	0.9	1.5	1.7
TPD/GDP	12.0	42.8	24.0	52.3	130.6	316.7	7.2	11.4	17.8

Note: Exp/GDP = Expenditure to GDP Ratio; Rev/GDP = Revenue to GDP Ratio; RD/GDP = Revenue Deficit to GDP Ratio; GFD/GDP = Gross Fiscal Deficit to GDP Ratio; Total Public Debt/GDP = Revenue to GDP Ratio.

Table 2: Summary of Hypothesis Test

	Null Hypothesis	Test	Sig.	Decision
1	$H_{0(a)}$ The Distribution of GFDGDP is the Same across categories of Year	Independent-Samples Kruskal-Wallis Test	0.4686	There is no evidence to Accept the Null Hypothesis
2	$H_{0(b)}$ The Distribution of TPDGDP is the Same across categories of Year	Independent-Samples Kruskal-Wallis Test	0.4686	There is no evidence to Accept the Null Hypothesis
3	$H_{0(c)}$ The Distribution of GDPGR is the Same across categories of Year	Independent-Samples Kruskal-Wallis Test	0.4686	There is no evidence to Accept the Null Hypothesis

Note: H_0 : Null Hypothesis, H_1 : Alternative Hypothesis; **Source:** Author Calculation.

Therefore, **H1 (a):** The distribution of gross fiscal deficit to GDP ratio has shown a significant increase during 1980-81 to 2017-18. **H1 (b):** The distribution of total public debt to GDP ratio has shown a significant increase from 1980-81 to 2017-18. **H1 (c):** The distribution of total GDP growth has shown significant variation from 1980-81 to 2017-18. Results conclude that the differences in the categories were only due to change of period only.

Impact of FRBM Act on Public Debt in India

The study regresses public debt to GDP ratio on GDPGR, POPGR and FRBM Act to find out the impact of FRBM act on level of public debt in India. The DW statistics is 1.481668, there is an autocorrelation problem in the error term. After the using Prais-Winsten AR (1) regression model, the Durbin-Watson statistic (transformed) is 1.942947 indicate that there is an absence of autocorrelation in the error term. The Breusch-Godfrey Serial correlation LM test probability value is 0.0985, which is statistically insignificant. Therefore, there is an absence of serial correlation.

Similarly, Breusch-Pagan/ Cook Weisberg's test probability value is 0.3598, which is also statistically insignificant and reveals that there is an absence of heteroscedasticity problem in the model (Table 4). The R2 and adjusted R2 of this model are 0.9951 and 0.9945 respectively. The OLS empirical results find out that FRBM Act does not have a significant effect on the public debt level in India. Here GDP growth rate has a negative effect on the public debt but is not statistically significant. Population growth has positive effects on public debt but it is also not statistically significant. Previous year debt level also has a significant positive effect on the public debt in India at 1 percent level of significance (Table 3).

Impact of FRBM Act on Fiscal Balance in India

The study regresses gross fiscal deficit to GDP ratio on GDPGR, POPGR, and FRBM Act to find out the impact of FRBM act on level of fiscal balance in India (Sucharta, Sethi., 2011). Table 6 showed the DW statistics is 1.783599, i.e. indicates there is an autocorrelation problem in the error term. After the applying Prais-Winsten AR (1) regression, the

Table 3: Impact of FRBM Act on Public Debt in India

Source	SS	Df	MS	Number of obs = 36		
Model	10898.4297	4	2724.60743	F(4, 31) = 1575.79		
Residual	53.6001456	31	1.72903695	Prob > F = 0.0000		
Total	10952.0298	35	312.915138	R-squared = 0.9951		
				Adj R-squared = 0.9945		
				Root MSE = 1.3149		
TPDGDP	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
GDPGR	-.0600361	.1136095	-0.53	0.601	-.2917442	.1716721
POPGR	1.243406	.811482	1.53	0.136	-.4116222	2.898435
DUMMY	.1116337	.9587826	0.12	0.908	-1.843816	2.067084
TPDGDP_1	1.05699	.028447	37.16	0.000***	.9989717	1.115008
Cons	-1.709012	1.960291	-0.87	0.390	-5.707052	2.289027

Note: * 1%, ** 5%, *** 10% level of Significant.

Table 4: Summary of Diagnostics Test of 1st Model

Durbin-Watson Auto-Correlation Test			
Durbin-Watson d-statistic(5, 36) = 1.481668			
After the Prais-Winsten AR(1) regression,			
Durbin-Watson statistic (transformed) = 1.942947			
Breusch-Godfrey Serial Correlation LM Test:(H₀: No Serial Correlation)			
Chi2(1)	2.729	Prob > Chi2	0.0985
Breusch-Pagan/ Cook Weisberg Test: (H₀: No Heteroskedasticity)			
Chi2(1)	0.84	Prob > Chi	0.3598

Table 5: Impact of FRBM Act on Fiscal Balance Level in India

Source	SS	df	MS	Number of obs = 36		
Model	87.1023803	4	21.7755951	F(4, 31) = 50.99		
Residual	13.2376221	31	.427020069	Prob > F = 0.0000		
Total	100.340002	35	2.86685721	R-squared = 0.8681		
				Adj R-squared = 0.8510		
				Root MSE = .65347		
TPDGDP	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]	
GDPGR	.7021228	.0557629	-2.65	0.012**	-.2617772	-.0343186
POPGR	1.037636	.3870738	1.81	0.079*	-.0873195	1.491565
DUMMY	.1116337	.3735877	2.78	0.009***	.2756992	1.799573
TPDGDP_1	.8443424	.0977509	5.64	0.000***	.6449781	1.043707
Cons	-.1743977	.9232774	-0.19	0.851	-2.057434	1.708639

Note: * 1%, ** 5%, *** 10% level of Significant.

Table 6: Summary of Diagnostics Test of 2nd Model

Durbin-Watson Auto-Correlation Test			
Durbin-Watson d-statistic (5, 36) = 1.783599			
After the Prais-Winsten AR (1) regression,			
Durbin-Watson statistic (transformed) = 1.921740			
Breusch-Godfrey Serial Correlation LM Test: (H_0: No Serial Correlation)			
Chi2(1)	0.365	Prob > Chi2	0.5455
Breusch-Pagan/ Cook Weisberg Test: (H_0: No Heteroskedasticity)			
Chi2(1)	0.14	Prob > Chi	0.7051

Durbin-Watson statistic (transformed) is 1.921740 showed the three is absence of autocorrelation in the error term. The Breusch-Godfrey Serial correlation LM test probability value is 0.5455, which is statistically insignificant. Hence, there is an absence of serial correlation. Correspondingly, Breusch-Pagan/ Cook Weisberg's test probability value is 0.7051 indicating that there is an absence of heteroscedasticity problem in the model. The R2 and adjusted R2 of this model are 0.8681 and 0.8510 respectively.

The OLS empirical outcomes (Table 5) finds that FRBM has a significant effect on the gross fiscal deficit in India at a 1 percent statistical level of significance. Here GDP growth rate has a negative effect on the gross fiscal deficit level at a 5 percent level of significance. It shows when the GDP growth rate is increasing the gross fiscal deficit to GDP ratio is declining and vice-versa. Population growth has positive effects on the gross fiscal deficit level at a 10 percent level of significance. The previous year's gross fiscal deficit level also has a significant positive

effect on the level of gross fiscal deficit in India at a 1 percent level of significance.

CONCLUSION

The study found a huge variation after the introduction of the FRBM Act period compared to that of the Pre FRBM Act period in expenditure to GDP, revenue deficit to GDP, gross fiscal deficit to GDP, and public debt to GDP ratios. Therefore, maintaining fiscal deficit to GDP, revenue deficit to GDP ratio, and public debt to GDP ratio according to FRBM act is a challenge for the central government because of unproductive expenditure (revenue expenditure) more compared to that of productive expenditure (capital Expenditure). The OLS empirical results showed the FRBM Act has a significant effect on the level of gross fiscal deficit at a 1 percent level of statistical significance but not statistically significant effect on the level of public debt in India. Therefore, the government should be concerned about protecting the fiscal health and public debt management of the Indian Economy

through the rules of the FRBM act and should spend on more necessary events and cut down unnecessary expenditures, and must be more spent on productive and investment activities. It saves the country from dependency, a high level of interest payments as well as a debt trap. Therefore, the study suggests that an efficient debt management strategy is significant for the sustainability of the budget, debt, and overall financial stability.

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