Fiscal Rules and Cyclical Structure of India's Fiscal Policy

Dr.Swati Yadav*

*(Associate Professor, Bhagini Nivedita College, University of Delhi

Abstract
The objective of this paper is to study the response of our policy makers to cyclical changes in the economy by examining the relationship between discretionary fiscal policy and macroeconomic activity in India. The discretionary fiscal policy can be pro or counter cyclical depending on how swift is the response of the policy makers to economic fluctuations. While the countercyclical fiscal policy helps in stabilizing the economy, procyclical policy can further accentuate the cyclical fluctuations. The study uses Fiscal Indicators, Non Parametric approach and correlation method to study the cyclical nature of fiscal response. Result indicates fiscal policy in India has become countercyclical after the adoption of fiscal rules in the post economic reform period as compared to post economic reform time. Thus ensuring sustainability of public finance and macroeconomic stabilization goals are not mutually exclusive.
Key words: Fiscal stance, Fiscal Rules, Contracyclical fiscal policy,
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I. Introduction

Sustainaibility of public finance and macroeconomic stabilization are the two important objectives of a prudent and forward looking fiscal policy. These two goals are not mutually exclusive. The role of state is expanding just like Wagner predicted in 1800's. To function as a welfare economy and having the capacity to absorb unexpected economic shocks requires a strong grip on the public finances. Even after most of the countries having adopted some kind of numerical fiscal rule, the policymakers have been able to find ways to meet fiscal rules targets and election compulsions on the other. The sustainability of public finances is very important. It gets affected by the economic conditions requiring going for macroeconomic stabilization policies. But the two goals can be met if the policy is countercyclical in totality.

The objective of this paper is to study the response of our policy makers to cyclical changes in the economy by examining the relationship between discretionary fiscal policy and macroeconomic activity in India. The discretionary fiscal policy can be pro or counter cyclical depending on how swift is the response of the policy makers to economic fluctuations. While the countercyclical fiscal policy helps in stabilizing the economy, procyclical policy can further accentuate the cyclical fluctuations.

The rest of the paper is organized as follows: Section 2 discusses briefly the requirement for adopting a countercyclical fiscal policy. Section 3 presents the estimates of structural and cyclical deficit for the entire sample period followed by Section 4 where the Discretionary Budget Balance (DBB) indicator is used to estimate the fiscal policy impulse. Section 5 tests the cyclicality of the response of our policy makers to changes in the level of economic activity using the non-parametric approach. Finally, Section 6 concludes.

Background

All schools of economic thought whether monetarists, neoclassical, Keynesian, neo Keynesian or Marxist accept business cycle as a reality of a market economy. However, the response in form of kind of stabilisation policy to be followed differs. Government intervention in form of either expansionary or contractionary discretionary fiscal policy has always been a point of departure between different schools of thought. The Real Business Cycle (RBC) theory consider intervention unneccesary to counteract economic shocks as these are temporary fluctuations that can be taken care of automatically by the markets. While Keynesian school of thought argue use of discretionary fiscal policy as necessary for stabilization and growth of the economy, the Classical school of thought point towards the various shortcomings of using discretionary fiscal policy namely- time lags, crowding out effect and political budget cycles(use of fiscal policy to influence voting decision of the electorates). Varvarigos (2008) argues that welfare maximisation requires a full counter-cyclical response to the occurrence of business cycles. Using contracyclical policy is following Keynesian tradition. When faced with the recession the government will increase expenditure or cut taxes to stimulate the economy.

One of the important issues in any fiscal policy debate is to examine the cyclical properties of fiscal policy. Empirically, it has been observed that whereas the fiscal policy is contracyclical in developed countries

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it is procyclical in developing countries. Ilzetzki & Vegh (2008) find overwhelming evidence to support the idea that procyclical fiscal policy in developing countries is in fact truth and not fiction from the quarterly dataset for 49 countries forthe period 1960-2006. Several authors like Gavin & Perroti (1997), Kaminsky et al (2004), Iltezki & Vegh (2008) have shown the procyclical stance adopted by emerging economies in their analysis. Besides the procyclical stance is more prominent during the slowdowns. Kaminsky et al (2004) dubbed the phenomenon of procyclicity observed in developing countries as "when it rains it pours."

The countercyclical budgetary/fiscal policy has a stabilizing effect on the economy whereas procyclical fiscal policy may end up destabilizing the economy. The cyclical fiscal outcome can be due to the automatic responses to changes in the economy and/or because of discretionary changes in the policy. It has been observed that automatic fiscal stabilizers are always countercyclical whereas discretionary fiscal policy can be counter, pro, or acyclical depending on the discretion of the government.

To test whether policy is pro or counter cyclical would require disentanglement of the effects of discretionary measures and automatic stabilizers. The traditional fiscal indicators like fiscal deficit, revenue deficit and primary deficit are unable to distinguish between the cyclical and non-cyclical changes in the fiscal policy and hence fail to assess the impact of fiscal operations on the rest of the economy correctly. Therefore, any evaluation of the fiscal performance should also take into account the cyclical effects (Swanponoel,2003; Rao,2007). In India, fiscal consolidation was major focus of the reforms initiated in the aftermath of the macroeconomic and balance of payments crisis of 1991. The post reform era can be further divided into two distinct phases : the period of fiscal reforms from 1991-92 2003-04 and; the period of Fiscal Rules (Fiscal Responsibility and Budget Management FRBM legislation) from 2004-05 to 2019-20. Even after adopting fiscal reforms in the nineties the fiscal situation continued to deteriorate. As a result the FRBM act was passed in 2003. India adopted FRBM and FRL legislation at the central and state level respectively in the year 2003 with an aim to achieve fiscal sustainability by putting a mathematical limit on central government debt and fiscal deficit levels. Under the regulation fiscal deficit was to be reduced to 3 percentages of Gross Domestic Product (GDP) and Revenue deficit (RD) to be eliminated by Fiscal Year (FY) 2009. The purpose of FRBM and corresponding FRLs in states was to ensure inter-generational equity in fiscal management, public finance sustainability and long term macro-economic stability.

The sustainability goal has to be supported by the objective of macroeconomic stabilization which requires following countercyclical policies. Next sections analyses the main trends in fiscal policy in India and estimating using non parametric tests to check whether the policy has been procyclical or countercyclical.

Table 1: Fiscal Performance of Central Government in the post reform period

Indicators (average as a % of GDP)	1991-92 to 1996-97	1997-98 to 2002-03	2003-04 to 2008-09	2009-10 to 2019-20
Fiscal deficit	5.6	5.9	3.6	4.62
Revenue deficit	2.8	3.9	2.2	3.25
Public debt (centre)	52.6	55.5	61.7	51.1

Source: Handbook of Statistics (2008, 2021), RBI.

It has been observed that the improvement in central Government finances in India before the 2008 crisis was essentially achieved through enhanced revenues either because of government policy decision and/or due to economic growth. After the crisis government could not meet the fiscal targets which ere then revised. in late 2010's the government was facing the problem of structural slowdown in the economy and pandemic resulted in unleashing of strong expansionary policies. All this had an adverse impact on the government finances.12AFDXZ

Testing cyclicality of India's fiscal policy response
Structural and cyclical deficit
The Structural Deficit (SD) can be calculated as the difference between the structural revenue and total expenditure as all the expenditure is considered structural. Cyclical deficit [1](CD) taken as the difference between gross fiscal deficit and the structural deficit, is essentially equal to cyclical revenue receipts. Taking structural tax revenues as a measure of discretionary fiscal policy and cyclical tax revenue a measure for automatic stabiisers can help in shedding the light on the comparative role played by these two components of fiscal policy over the sample period. It can be observed from the estimates of structural and cyclical deficit as a ratio of GDP (table2) that
a) the structural deficit is the predominant part of total adjusted GFD, the cyclicaldeficit though present is not comparatively significant
b) Comparison of the pre and post reform phase shows that the magnitude of structuraldeficit has

increased. From averaging 3.2 % during 1970-71 to 1990-91 in the post reform era to
4.3 % during 1991-92 to 2007-08. The explosive growth in public expenditure in the eightiesresulted in the era of high level of structural deficit (table 2).

c)　　　Within the post reform era, structural deficit has gone down from an average of 4.3

% during the discretionary phase of reforms (1991-92 to 2002-03) to 4.2 % in the post FRBM rule phase (2003-04 to 2007-08).

Table 2: Structural and Cyclical Deficit (Average as a percentage of GDP)

	ASD/GDP	ACD/GDP	
1970-71to 1979-80	1.9		-0.1
1980-81 to 1990-91	4.5		-0.2
1991-92 to 2002-03	4.3	0.4	
2003-04 to 2007-08	4.2		-0.2

The estimates of structural and cyclical deficit do provide us with some insights on the relationship between India's fiscal policy and business cycle. Yet the methodology has a seriouslimitation, which is the use of constant revenue elasticity whereas the elasticity of revenue with respect to the relevant base has been varying significantly. Several studies like RBI (2001), Pattnaik et.al (2006) and Rangarajan & Srivastava (2006) have noted this drawback in the methodology of estimating structural deficit. In addition, structural deficit is a residual concept, all that is not cyclical is considered as structural. However, not all that is structural is essentiallyunder the control of the budgetary authorities.

Fiscal Indicators
To overcome the problem of estimation of structural and cyclical deficit using constant revenue elasticity and to get a better measure of discretionary fiscal policy stance alternative fiscal indicators can be used. Most notable among them are:
1.　Primary Balance (PB)
2.　Cyclically Adjusted Budget Balance(CABB)
3.　Blanchard Fiscal Impulse measure (BFI)
4.　Heller, Haas and Mansur (1986) measure of fiscal impulse (CNFD)
5.　Discretionary budget balance (DBB) by Braconier & Holden

The easiest and most natural measure of fiscal stance is the primary balance (PRD) – government revenues minus government expenditure excluding interest payments. However, the issue of whether changes are discretionary or induced is not addressed.

Figure 1: Primary Balance as a % of GDP
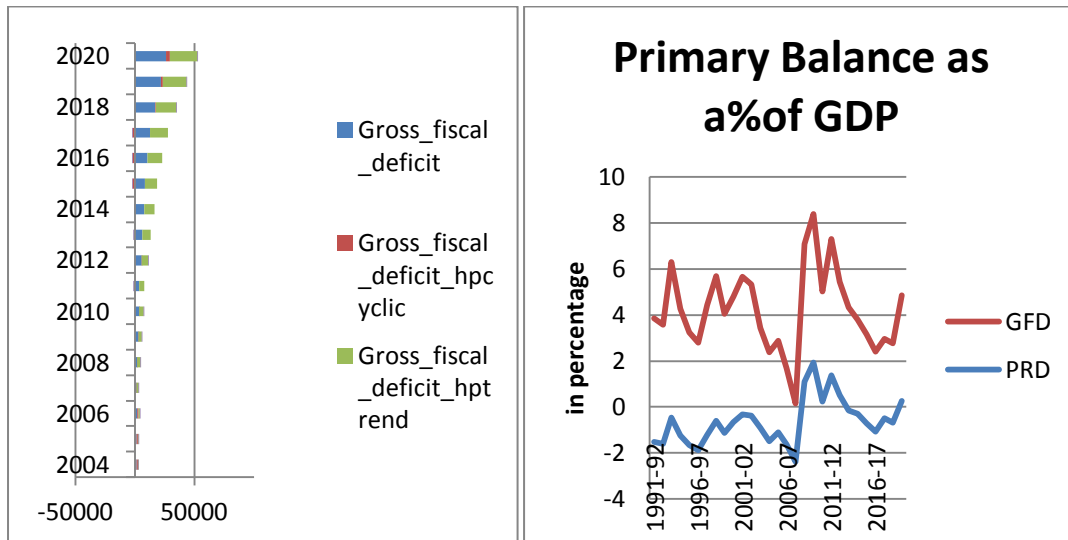
In the context of Indian economy, it is difficult to obtain the value of fiscal policy stance using CABB and BFI methodology, as they require a consistent data series on the level of unemployment. This leaves us with CNFD and DBB. Heller, et al. in their 1986 working paper for IMF assumed that in the absence of discretionary policy, government revenue is unit elastic with respect to actual nominal GDP, while government expenditure is unit elastic with respect to the trend value of real GDP valued at current prices. The difference between the two will give the CNFD.

$$CNFD = G.GDP^* - T.GDP$$

Where, G is the Government expenditure to nominal GDP ratio,

T is the Givernment revenue-to-nominal GDP ratio.

GDP* is the potential value of GDP

Fiscal Stance is given by FPI= Actual Deficit-CNFD

The CNFD indicator uses total receipts and expenditure, whereas the Discretionary Budget Balance (DBB) takes into account the impact of revenue bases on different components of revenue receipts. Chakraborty& Chakraborty (2006) used Heller's methodology to calculate the fiscal impulse covering the period 1950-51 to 1997-98. They found that fiscal policy stance and economic activity are moving together over the period 1950-51 to 1997- 98. The figure 2 gives fiscal policy impulse of central government calculated using the Hellar (1986) fiscal indicator for the period 2004-05 to 2020-21.

Figure 2:Fiscal Policy Stance of Central Government (FPI)
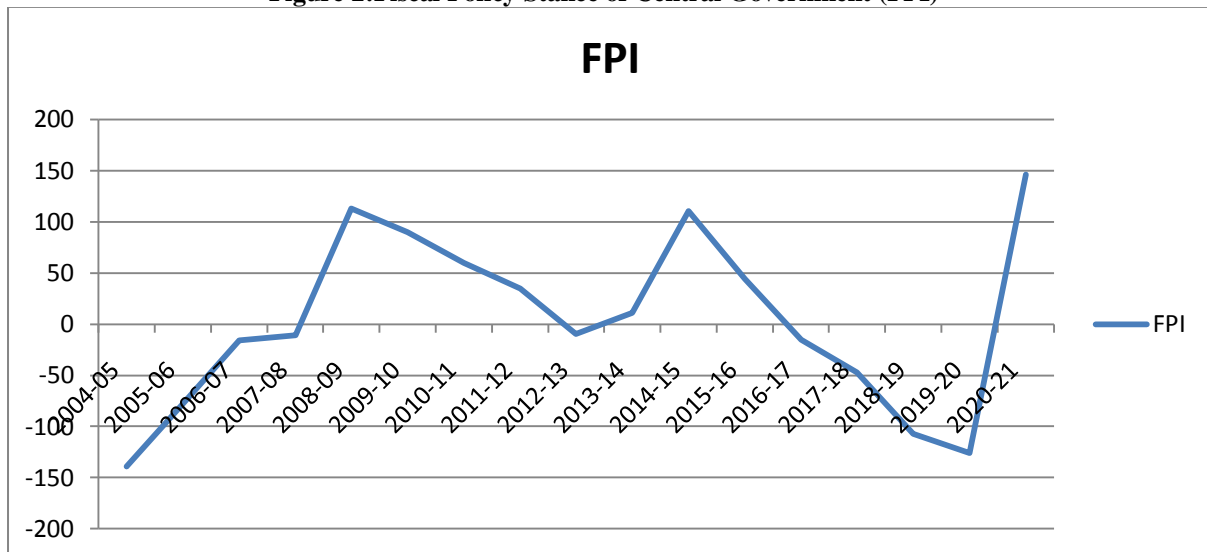
Source: Data from Handbook of Statistics RBI and Author's calculation

The figure indicates that to deal with GFC of 2008 and Pandemic crisis of 2020 the government of India followed expansionary fiscal policy by giving large fiscal stimulus's to pump prime the economy.

Indian economic system has undergone major changes since the inception of economic reforms in

1991. The economy is more open and market oriented as compared to pre reform era. As a result, it has now become more susceptible to slowdowns resulting from economic crisis that has its origin elsewhere. In addition, the nature of business cycles has also changed drastically. Earlier the crisis were mostly monsoon driven but now they are more in tune with the economic crisis happening in other market oriented economies [Dua and Banerji (1999); Chitre (2001)]. The post reform period prior to the Global Financial Crisis of 2008-09 witnessed two slowdowns in FY 1991 and FY 1996 respectively. After the GFC the Indian economy started showing recovery by 2013 and a boom phase from 2014 onwards. This recovery was though short-lived with Indian economy again witnessing a slowdown which had its roots prior to 2019. The pandemic only worsened the situation.

Testing cyclicality of India's fiscal policy response: Non parametric approach

This section explains the two approaches used to analyze the cyclical properties of fiscal policy in India. Kaminsky et al (2004) used non-parametric approach to provide a contrast in the policy cyclicality regime followed by OECD and developing countries. They defined policy cyclicality in terms of policy instruments - government spending variable and tax rates. Countercyclical fiscal policy requires lower (higher) government spending and higher (lower) tax rates in good (bad) times to stabilize the business cycle; and vice versa in case of procyclical fiscal policy. For acyclical fiscal policy government spending and tax rates remain constant over the business cycle. The Table 3 shows the correlations of the policy instrument with the business cycle as implied by these definitions.

Table 3: Cyclicality of Fiscal Policy

Fiscal policy	Government spending	Tax revenues
Countercyclical	-	+
Procyclical	+	-/+/=
Acyclical	=	=

Source: Kaminsky et al. (2004)

Kaminsky et al. (2004) showed that caution should be exercised in drawing conclusions on policy cyclicality based either using primary balance or tax revenues, primary balance and government spending as a ratio of GDP. The best indicators are government spending and tax rates. Since there is no systematic data on tax rates, tax revenue variable will be used along with government spending to test the cyclicality of fiscal policy in India. Given the lack of long series of quarterly data in developing countries, Kaminsky et al. (2004) divided the annual economic data into good and bad times based on whether growth of GDP is above or below its median value. Then two different approaches were used to analyse the cyclical structure of macroeconomic policies. In the first approach, the amplitude of the cycle in government spending and tax revenues was calculated by comparing these variables in good and bad times. In the second approach, a filter (HP) was used to decompose each series into its stochastic trend and cyclical component. Then pairwise correlation values between the cyclical component of GDP and fiscal variables were estimated. This gave an idea about the contemporaneous comovements in the variables with business cycle. Taxes flow with the business cycle: higher tax collection during good times and lower during bad times, such behaviour is termed as procyclical in the standard business cycle literature and vice versa is known as countercyclical. Kaminsky's definition of counter and pro cyclicality differs as they take the behaviour of taxes and spending that stabilises the business cycle to be countercyclical in Keynesian manner and procyclical if cycle gets accentuated. When taxes Increase (decrease) during good times (bad times) and Government spending decrease (increase) during good times (bad times), such behaviour of taxes and spending helps in stabilising the business cycle and hence can be termed as countercyclical policy.

II. Result

Indian case: Between 1971-72 and 1990-91, the median value of annual rate of growth of real GDP is 4.4%. Following Kaminsky et al.(2004) the years with annual rate of growth of real GDP greater or equal to the median rate of growth will be classified as good times and the years with less than median annual rate of growth of real GDP as bad times. Then the average of rate of growth of fiscal variables in real terms is calculated for good and bad times. The difference between the two averages will provide the level of amplitude for that fiscal variable. Similar estimation is done for post reform periods: pre reform (1971-72 to 1990-91) , pre FRBM reform(1991-92 to 2003-04) and Fiscal Rules period (2004-05 to 2019-20). The median growth rate of GDP for pre reform period is 4.4% and 5.7%, 7.11% for the two phases of post 1991 economic reform period. Tables 4 and 5 give the value of the amplitude of the fiscal policy cycle. A negative amplitude value will

indicate countercyclical government spending and procyclical tax revenues.

Table 4: Non-Parametric Approach[1]: Amplitude (GDP)

	1970-71 to 1990-91	1991-92 to 2003-04	2004-05 to 2019-20
Total Government expenditure	Procyclical (+)	Countercyclical (-)	Countercyclical (-)
Current government expenditure minus interest payments	Countercyclical (-)	Countercyclical (-)	Countercyclical (-)
Tax revenues	Countercyclical(+)	Procyclical (-)	Countercyclical (+)

Source: Author's own calculation

Table 5: Amplitude of the Fiscal Policy Cycle

Fiscal Indicators (CentralGovernment)	Average Annual Real Rate of Growth (InPercentage Terms)		
	Good Times(1)	Bad Times(2)	Amplitude(1)-(2)
1970-71 to1990-91			
Total Government expenditure	7.85	6.59	1.26
Current government expenditure minus interest payments	5.79	9.21	-3.42
Tax revenues	8.82	4.93	3.89
1991-92 to 2003-04 (Pre FRBM phase)			
Total Government expenditure	15.25	15.6	-0.37
Current government expenditure minus interest payments	7.67	8.11	-0.44
Tax revenues	6.36	6.45	-0.09
2004-05 to 2019-20 (Fiscal Rules phase)			
Total Government expenditure	13.73	14.08	-0.35
Current government expenditure minus interest payments	8.57	9.23	-1.10
Tax revenues	7.67	7.19	0.36

Notes: All data are from RBI's Handbook of Statistics unless otherwise noted.
The increase for the fiscal spending indicators is the average annual real rate of growth expressed in percentage terms. Good (bad) times are defined as those years with GDP growth above (below) the median.

Findings indicate small negative amplitude value for all measures of government spending variable in the second half of the sample period. However, the current government expenditure variable is countercyclical in the first half of the sample period. Overall the fiscal spending variable has behaved in a countercyclical manner in the two phases of economic reforms: pre FRBM phase and Fiscal Rules phase. The amplitude has actually increased in the latter half of the sample period. As far as tax variable is concerned, it seems to have behaved in countercyclical fashion (Kaminsky's definition).

Table 6 presents the pair wise correlation values for all the three variables for the fiscal rule phase. Cyclical components of both measures of government expenditure variable show negative correlation with the cyclical component of GDP.

Table 6: Pair Wise Correlation Coefficients with Cyclical GDP

Cyclical fiscal variable	2004-05 to 2019-20
Total Government	0.17 (-) countercyclical

expenditure	
Current government expenditure minus interestpayments	0.30 (-) countercyclical
Tax revenues	0.95 (-) procyclical

Source: Basic data from Handbook of Statistics (2020) and Author's own calculation

The tax revenues have behaved overwhelmingly in countercyclical fashion (Kaminsky definition). So both the approaches – non-parametric and pairwise correlations- suggest that government spending variables have behaved in a countercyclical manner in the post 1991 reform phases whereas tax revenues have shown mixed results.

The general empirical result is that fiscal policy is countercyclical in developed countries and procyclical in developing countries. Results for the Indian economy overall are mixed in nature with the procyclical government spending and countercyclical tax revenues influencing the result for overall budget balance in opposite manner in the pre 91 reform period. After the economic reforms the policy has become countercyclical more so after the implementation of fiscal rules. Earlier the fiscal policy, it seems, does sometimes end up reinforcing the business cycle as far as government spending variable is concerned. An important reason could be the presence of political cycles creating distortions in the policymaking. Inability of the government to a) curtail unproductive expenditure and b) use increasing tax revenues to improve public capital formation, can act as a major growth impediment in future. The capital expenditure has borne the brunt of fiscal adjustment in the post reform phase also. The ratio of capital expenditure to GDP declined from an average of 6.2% of GDP between 1980-81 and 1989-90 to 3.7% during the nineties and to 2.7% between 2000-01 and 2007-08, whereas the current expenditure showed an upward trend. Now the major thrust is on enhancing CAPEX and curtailing revenue expenditure with some amount of creative accounting to meet the FRBM targets.

Both amplitude values and pairwise correlations show that the government spending variable has behaved in a procyclical manner for the entire sample period. However, the current government spending variable net of interest payments, during the first period of our sample behaved in a countercyclical manner. Results indicate increased use of government spending in a procyclical manner in the post reform phase. Tax revenues move with the business cycle increasing during good times and decreasing during bad times[2].

III.   Conclusion

This paper has made use of both parametric and non-parametric approaches to test the cyclicality of fiscal policy in India. The fiscal data for central government was subjected to a battery of test to study the cyclical properties of fiscal policy. Results indicate that though tax revenues have behaved as per the Keynesian requirement of countercyclical fiscal policy to stabilize the cycles, government expenditure has behaved in a procyclical manner in the pre economic reform phase and countercyclical in the post reform phases. The value of amplitude is very small thus if not taken care the behaviour of government spending variable during the cycles may end up further accentuating the cycle instead of acting as a stabilizing force.

References

[1]. Chitre, V. S (2001), "Indicators of Business Recessions and Revivals in India :1951-82", Indian Economic Review , 36(1).
[2]. Chakraborty, P. & L.S. Chakraborty (2006), "Is Fiscal Policy Contracyclical in India: An Empirical Analysis", MPRA paper 7604
[3]. Dua, P. and A. Banerji (2001),"An Indicator Approach to Business and Growth Rate Cycles : The Case of India ", Indian Economic Review, 36(1) .
[4]. Heller, Peter.; Haas,Richard.; Mansur, Ahsan S.(1986): "A Review of the Fiscal Impulse Measure", International Monetary Fund Occasional Paper: 44, May.
[5]. Gavin, M. and R. Perotti (1997), "Fiscal Policy in Latin America", in B. Bernanke and J.J. Rotemberg (eds.), NBER Macroeconomic Annual, University of Chicago Press, Chicago.
[6]. Hodrick, Robert J.and Prescott, Edward.C (1981): "Post-war U.S. Business Cycles: An Empirical Investigation", Journal of Money, Credit and Banking; 29(1), February
[7]. Ilzetzki ,E. and C.A. Vegh (2008), "Procyclical Fiscal Policy in Developing Countries : Truth or Fiction?", NBER Working Paper 14191, The National Bureau of Economic Research.
[8]. Kaminsky, G. L., C. Reinhart and C. Vega (2004), "When it Rains, it Pours: Procyclical Capital Flows and Macroeconomic Policies", NBER Working Paper 10780, The National Bureau of Economic Research.
[9]. Pattnaik, R. K., S. Deepa, and J. Chander (2006), "Fiscal Policy Indicators in a Rule-Based Framework: An Indian Experience", Available from World Wide Web: (http:/ www.bancaditalia.it/studiricerche/convegni/.../fiscal_policy/.../Pattnaik.pdf).
[10]. Rangarajan, C. and D.K. Srivastava (2006), "Dynamics of Debt Accumulation in India: Impact of Primary Deficit, Growth and Interest Rate", Economic and Political Weekly 38(46), 4851–4858.
[11]. Rao, M. (2002), "Deficits and Rules: Some Guidelines for the Conduct of Fiscal Policy Over the Business Cycle", Working Paper 25, University of Mumbai. R.B.I. (2001), "The Role of Fiscal Policy in Reinvigorating Growth. Report on Currency and Finance 2000–2001", Reserve Bank of India: Mumba
[12]. R.B.I. (2001), "The Role of Fiscal Policy in Reinvigorating Growth. Report on Currency and Finance 2000–2001", Reserve Bank of India: Mumbai

[13]. Swanepoel, J.A. & N.J. Schoeman (2002), "Countercyclical Fiscal Policy in South Africa: Role and Impact of Automatic Fiscal Stabilisers", SAJEMS NS 6 (2003) , 4