State Level Expenditure Management Policy in India: An Empirical Analysis of Odisha State Finance

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Abstract

This study makes an empirical analysis on state finance in India with a special reference to the State of Odisha.Thekey deficit indicators of state have declined significantly, since 2002-03. Bringing down the revenue expenditure without adversely affecting capital expenditure, implementation of fiscal rules in the state and effective liquidity management policy are the key for sound state financial position since 2002-03. The long run elasticity of capital outlay on growth of the gross state domestic product is estimated by employing Vector Error Correction Mechanism in order to provide a policy direction for further reforms in the state finance. This study suggests more capital outlay and capital expenditure through Public Private Partnership (PPP) to further induce growth which will help in more revenue mobilization.

Keywords: *Fiscal Deficit,Fiscal Policy Rules, Structural Break, Cointegration Test,Block Exogeneity Wald Tests*,*Vector Error Correction Mechanism.*

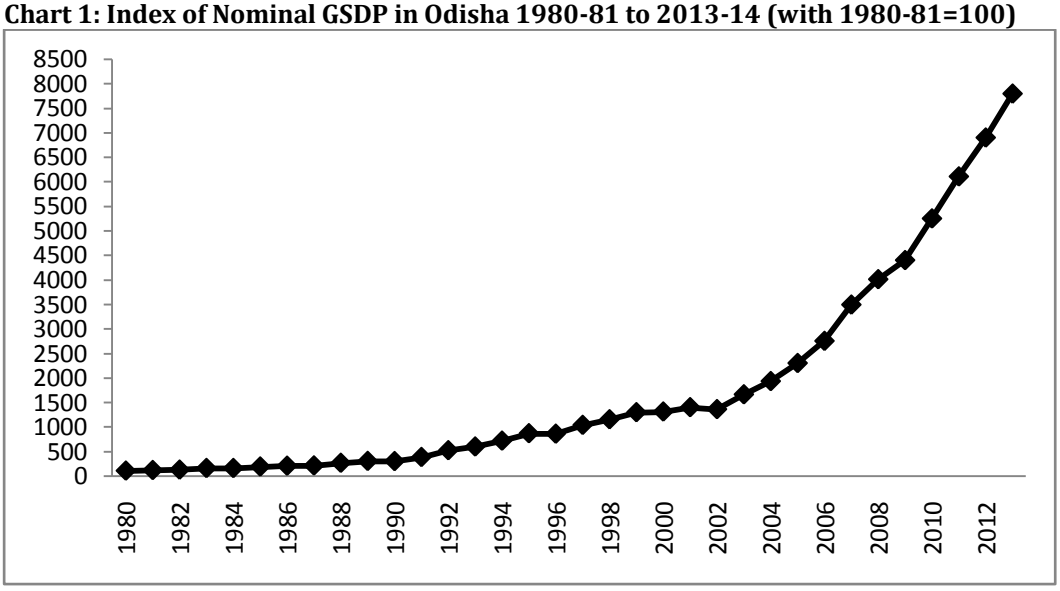
JEL Code: C20, C22, H72,H72

1. Introduction

The performance of individual states in India has become an important area of research for a number of reasons. Given the well-known regional disparities in India, the study of state is critical if the country needs to progress in a balanced way. Also, a study of states throws up successful experiments and examples which can be replicated or adapted by other states.The fiscal area has been a much researched field of economic analysis in India. This has been so particularly after the initiation of economic reforms in the early 1990s. Studies on fiscal issues have been stimulated by the fact that fiscal adjustment has constituted a critical component of the reforms package (Ministry of Finance 1993). The fiscal adjustment in turn has been influencedby a whole gamut of macro-economic policies. Based upon the experiences of several counties and India, various studies arrived that sound and efficient management of the state finance with qualitative and effective liquidity and cash management is a critical factor for the sustainable growth rate in the country. Among all the states in India,the economy of Orissa has

witnessed acceleration in terms of the gross state domestic product (GSDP). The evidence presented here clearly indicates that the economy of Odisha has migrated to higher trajectory. During the period 1980-81 to 2013-14, the GSDP of Odisha has witnessed a compound average growth rate of 13.21% at current prices.A new trend in GSDP in Odisha has been noticedsince FY 2002-03. From 2002-03 to 2012-13, the annual compound annual average growth rate (CAGR) in GSDP at current prices has been 16% at current prices as compared to 13.67% CAGR witnessed during 1980-81 to 2001-02. This growth pattern is relatively higher if it is compared with national average as well as other developed states. The annual average growth rate in real GSDP during 1980-81 to 1991-92 has been only 3.22 percent. The average annual growth in real GSDP during 8th Plan (1992-93 to 1996-97) was 2.3% and during 9th Plan (1997-98 to 2001-02), it was 5.2%. The State has reported an average annual growth rate of 9.51 percent for the 10thFive Year Plan (2002-03 to 2006-07) against a target of 6.20 percent. This is compared well to national average growth rate has been 7.62 percent for Non-Special Category States.The state economy grew at an impressive rate of 8.23 percent in real GSDP during the 11th Five Year Plan (2007-08 to 2011-12). index number of GSDP (with 1980-81 = 100.0) shown in chart 1 has gone up by 5.75 times from index number of GSDP at 1354 in 2002-03 to index number at 7791 in 2013-14 (Chart 1).

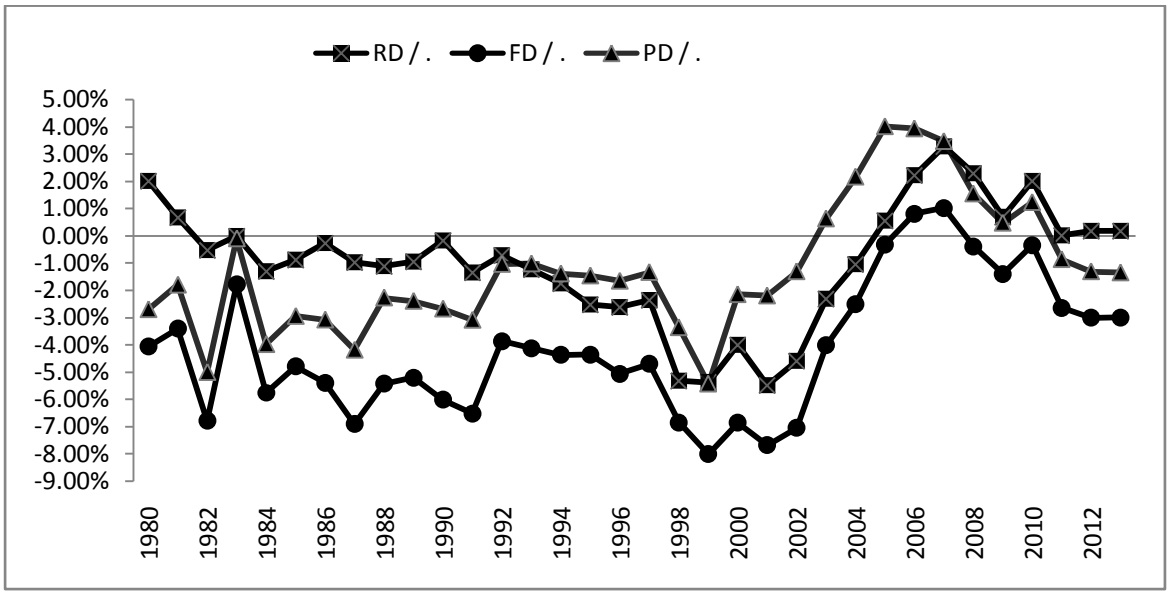
Chart 1: Index of Nominal GSDP in Odisha 1980-81 to 2013-14 (with 1980-81=100)



Source: Budget Documents and Economic Survey (various issues), Govt. of Odisha

The fiscal situation of Odisha represented by the various deficit indicators of the state fiscal space have worsened during entire 1980s and 1990s.Either high revenue deficit ratio or fiscal deficit ratio is because of thedeliberate policy decisions to spend beyond revenue collection is not in commensurate with cash outflow of the state economy. In 1980-81, Odisha was a revenue surplus state at 2.01%. After a decade,the revenue deficit, fiscal deficit & primary deficit relative to gross state domestic product (GSDP) were reported at 1.34%, 6.52% & 3.08% respectively in 1990-91.Again a decade after,the revenue deficit ratio, fiscal deficit ratio & primary deficit ratio (ratios are relative to GSDP)reached at a peak in level of 5.48%, 7.68% & 2.19% respectively 2001-02 (Chart 2).As a result,the total outstanding debt relative to GSDP has moved up from 31.60%, witnessed in 1992-93 to a peak level 55.35% in 2002-03. The high deficit ratios have contributed to the rising trend in debt ratio. In terms of outstanding debt to total revenue receipts (TRR) ratio, it has gone up from 2.07 times in 1992-93 to a peak level of 3.84 times in in 2002-03. This has further contributed to higher outflow of interest payment. The interest coverage ratio (interest payment relative to total revenue receipt) has increasedfrom 18% to a to peak level of 40% recorded in 2001-02. Because of high liquidity crunch, the State has twice on overdraft with the Reserve Bank of India in 2002-03

Chart 2: Trend in Deficit Ratios: 1980-81 to 2013-14



Source: Budget Documents and Economic Survey (various issues), Govt. of Odisha

RD: Revenue Deficit, FD: Fiscal Deficit, PD: Primary Deficit

Because of reform measures initiated since 2002-03 in state finance, there has been substantial decline(improvement) in in revenue deficit (RD) ratio, fiscal deficit (FD) ratio and primary deficit (PD) ratio. At the end of 2012-13, Odisha is a revenue surplus state at 0.18% and moderate level of fiscal deficit ratio and primary deficit ratio at 3% and 1.30% respectively in 2012-13. There is also improvement in the debt ratio and interest coverage ratio (reported at 19.83% and 10.56% respectively in 2012-13).

In this backdrop, the objective of this paper is to examine the effectiveness in management of Odisha State Finance by employing the data from 1980-81 to 2013-14.

The study has been organized into five sections. Besides the first introductory section, Section 2 provides a review of related literature. The theoretical background in which the deficit indicators affect other fiscal variables is described in section 3. Section 4 provides research gap, objectives and methodology. Results and analysis are discussed in section 5.Section 6 concludes&summarizes the observations. Section 6 suggests the policy intervention.

2. Related Literature

Traditionally the state finance in India has been neglected in literature of public finance, however, a change has started happening and research on state finance has getting momentum looking at the growing importance of the states' fiscal operations relative to the size ofcentralfinances.

The paper combines several strands of literature. The first strand is on the need of fiscal policy rules. Several papers have analyzed the impact of fiscal policy rule in the context of loose fiscal policy. Fiscal policy rule is defined as a rider on fiscal policy expressed in terms of a summary of fiscal performance, such as the budget deficit, borrowing, debt or a major component etc. (Kopits and Symansky, 1998). According to their research findings, loose fiscal policy impacts growth potential of the economy which in turn, destabilizes the economy. High level of fiscal deficit relative to GDP results in increases in the debt-GDP ratio and also, adversely affects growth of the economy (Rangarajan&Srivastava, 2005). According to their study, high and structural fiscal deficit constraintsthe fiscal policy for counter cyclical intervention while the growth rate is below the trend level.

Implementation of fiscal rules at the subnational level of government is a fundamental challenge (Kopits, 2001). He has opined that fiscal rules at the subnational level is very important and challenging when a country like Brazil needs fiscal reforms which cannot be achieved by the central level alone. Similarly, in a federal system with a small central government, as in the EU, it is necessary to apply subnational rules for subnational governments (or national governments in the EU) to address fiscal imbalances which may aggravate the cost of borrowing of the rest of the system.

Second, this paper is related to the literature on the importance of state level fiscal reforms in India for achieving the overall fiscal consolidation of the economy. The analysis by Vadra (2010) suggests that fiscal reforms at the State Government level are critical to have higher growth trajectory in Indian economy. The Constitution assigns a pre-eminent role to States in India for agricultural development, poverty alleviation and human development and co-equal position in the provision of physical infrastructure. The predominant role in allocation and cooperative role in distribution makes States' fiscal operations critical for macroeconomic stabilization as well. Since the State Governments run large deficits, therefore, fiscal reforms at the State level is crucial for achieving overall fiscal consolidation in the economy. Hence, fiscal policy rules at the State level are important to achieve macroeconomic stability and microeconomic allocative efficiency. Stephen, Lahiri and Nicholas (2003) in their study on State finances emphasizes on the State level reforms in India. According to them India cannot success in reform process unless there is the State Governments bring in sound state finance with effective fiscal reforms. The fiscal crises at the state level need structural reform in order to remove fundamental weakness of the state finance (Amaresh et all., 2002). The state should play complementary and supplementary role and performance to the efforts of the Center to play and improve the overall fiscal situation (Bhargava, 2002). The fiscal policy should aim at raising the revenue of the states through levy of appropriate user charge on services, phasing out non merit subsidies, privatization of state electricity boards, rationalization of tax system by introduction of VAT (Rao, 1992). In a democratic society, rules are necessary to restrain political policy makers who pursue state finance policy in a deficit mode when facing the electorates or they are indifferent to the inter-temporal budget constraint (Buchanan & Wagner, 1887). More so, the rule based fiscal policy is superior to a discretionary approach (Kedland and Prescott, 1977). The constraints on sub-national deficits must be stronger than those pertaining to the central government as largely, they borrow and make interest payment outside the state. The marginal cost and average cost of borrowing by the states are higher as compared to those for the center, implying the need for more stringent norms for the states to have same rate of growth in their state domestic product (Chelliah 2001). The Eleventh Finance Commission also recognized the impact of higher interest payment by the state on their borrowings as average cost of borrowing went up from 6.75 percent in the early 1980s to 12.35 percent in 1998-99 as a major contributory factor for rise in revenue expenditure of the state. The imbalances in the state budgets which are structural in character are the turning points for the fiscal deterioration in Indian public finance and impacts, India's overall fiscal sustainability (Anand et all, 2001). The deteriorating trend in state finances in recent years is because of failure to contain wasteful expenditure and reluctance to raise additional resources that afflicts most of the state finances. Competitive populism and the pay revision of employees led to starvation of funds of states, therefore, unless drastic measures are resorted without delay, the state finance states will collapse (Kurian,1999) . GovindaRao (2002) contended that since 1987-88, states in India as a group had begun to face dissaving of a significant magnitude, which increased year after year mainly due to high growth of revenue expenditures. This rise in revenue expenditures, placed at an alarming rate of 17.6 percent per annum in the 1980s, was due to an explosive rise of 31.2 percent in netinterest payments andalso, because of rapid increases in expenses on wages ,salaries bill and subsidies. The fiscal adjustment in at the state level, in his view, had to come about by compressing revenue expenditures, and by targetingsubsidies and increasing non tax revenue through user charges for social and economic services. He suggested a series of measures on compressing revenue expenditures including reductions in the number of

government employees, as also adjustments in subsidies. Lahiri(2000) has focused on the extent of appropriate expenditure prioritization by the states and on the series of issues concerning reforms and harmonization of state taxes so as to have a sound state finance.Shome (2000) also attributed higher subsidies and the decline in non-tax revenue for poor quality of state finance during 1990s. The RBI study (1992) emphasized the structural nature of imbalances in state finances, stemming from the limited resource base in relation to the growing expenditure commitments. The Eleventh Finance Commission (2000) reasoned that fiscal ailments at the state level is because of expenditure growth outpacing the growth of revenues, witnessed in the eighties, got widened in the mid-nineties with stagnating revenue growth and fast expansion of expenditure.The EPW Research Foundation (2001) reviewed the trends in state finances in the 1990s and reasoned out the poor performance in state finance is because of (i) declining trends in revenue receipts (ii) the sliding down of development expenditure was more in infrastructure and other 'economic services'. This study also brought out series of fresh initiatives taken by the states in order to improve the quality of state finances.

Finally, this study belongs to the literature which investigates pro-cyclical behavior of the fiscal policy. Fiscal policy is pro-cyclical when it is expansionary during economic upturns and contractionary during economic downturns. Conversely, a countercyclical fiscal policy is contractionary during upturns and expansionary during downturn. The Pro-cyclical behavior of the fiscal policy is evidenced in Latin American Countries, especially during periods of low growth (Gavin &Perotti, 1997). The requirement of funds by the Government through borrowing is higher during the down turn that helps in explaining why fiscal policy is particularly pro-cyclical in economic downturn. To ensure medium-term fiscal sustainability, states should have deficit bias during economic downturns which should be offset by generating fiscal surpluses during upturns. However, most of the states have a tendency to adopt pro-cyclical fiscal policies during an upswing, which creates a deficit bias leading to accumulation of debt and high debt servicing (Lane, 2002). In India, a pro-cyclicality behavior in aggregate expenditure and GSDP is empirically observed for Andhra Pradesh, Haryana, Kerala and Tamil Nadu (RBI: Study of State Budgets 2013-14). However, the capital outlay in these states does not exhibit any cyclicality. Counter-cyclicality behavior in aggregate expenditure and GSDP is empirically observed in case of Gujarat, M.P, Odisha, Punjab and Rajasthan. In this empirical analysis, it is found that states with more Primary balance with one period lag are found to have a significant positive impact on both capital outlay and primary revenue expenditure. This confirms that the states with lower primary deficit/higher primary surplus have more headroom for carrying out their fiscal expenditure. It is implied that containment of interest expenses is crucial for prudent expenditure management policy of the state finance.

3. Theoretical Background

The Fiscal Responsibility and Budget Management Bill of 2000, is a landmark for sustainability for India's sound public finances. The bill sets fiscal policy rules that will require the Government to eliminate the both central and state revenue deficit ratio and targets a fiscal deficit ratio; put a cap on Government guarantee ratio and prevents the Government to borrow from the Reserve Bank of India effectively from 2004. Besides, the bill suggests annual submissions of Medium-Term Fiscal Policy (MTFP) for the respective states. The bill envisages transparency in the fiscal policy rules both for Center and States. The Medium-Term Fiscal Reform Programs (MTFRPs) aims at reducing wasteful expenditure (cutting low-priority spending) and improving tax collection or improving the efficiency of the tax administration. The MTFRPs required states to make time-bound reform in fiscal administration, power, public sector, and the budget and aimed at reducing the consolidated fiscal deficit to sustainable levels by 2005, as well as the debt-to-GDP ratio and interest payments

The Twelfth Finance Commission (TWFC) recommended the debt write-off scheme for the states in India to enact a fiscal responsibility law and try to eliminate revenue deficit and reduce

fiscal deficit. Consequently, the debt write-off scheme was linked to the reduction of revenue deficit of the states. Subsequently, the Thirteenth Finance Commission has recommended to write-off of Central loans to those states who would legislate fiscal responsibility and budget management (FRBM) Acts as recommend by the Commission. In order to ensure the fiscal prudence, the Government of India, in 2003, has introduced Fiscal Responsibility and Budget Management (FRBM) Act.

Since 2002-03, the Government of Orissa has initiated reforms in state finance, through both revenue enhancing and unproductive revenue expenditure reduction measures without impacting the capital outlay. The medium-term target of Government was to reduce the revenue deficit to zero or revenue surplus by 2008-09. This is in adherence to section 5(a) of the Orissa Fiscal Responsibility and Budget Management Act, 2005.

4. Research gap, objectives and methodology

On the basis of the above, we have tried to study the expenditure management policy of the Govt. of Odisha from 1980-81 to 2013-14 with following specific objectives.
a) to identify the major reforms particularly in in expenditure management segment of theOdisha State Finance during 1980-81 to 2013-14 by capturing the structural break in important fiscal variables, **b)**to examine the impact of FRBM Act on the Odisha's fiscal space, **c)** to estimate the degree of responsiveness (elasticity) of the capital outlay to GSDP for period 1980-81 to 2013-14
To achieve the first objective **(a)**, we have employed Simple Ordinary Least Square (OLS) method to investigate the structural break in Revenue deficit relative to GSDP, Fiscal deficit relative to GSDP, Primary deficit relative to GSDP by capturing the time dummy.To arrive at the ratio, all the variables are taken at current prices.

Symbolically, the model can be written as:

$$\textit{Deficit Ratio} = a_0 + a_1 D_1 (t\text{-}22) + u_t \ldots\ldots\ldots (1)$$

t: time trend: 1 to 34 that starts from 1 (1980-81) and ends at 34 (2013-14)
D_1 (Time Dummy): dummy variable which is
'0' for 1980-81 to 2001-02
'1' for 2002-03 to 2013-14
t: time trend: 1 to 34 that starts from 1 (1980-81) and ends at 34 (2013-14)
(t =22, for the year 2001-02)
To achieve the second objective **(b)**, the impact of FRBM Act on these deficit ratios has been examined by taking FRBM dummy

$$\textit{Deficit Ratio} = a_{01} + a_2 D_2 + u_{t1} \ldots\ldots\ldots (2)$$

Where deficit ratio is dependent variable
D_2(FRBM Dummy): Dummy variable which is
'0' for 1980-81 to 2003-04
'1' for 2004-05 to 2013-14
'a_1' indicates any break in in deficit ratios for the period 2002-03 to 2013-14. u_t is the error term of the model.
' a_2' examines the success of FRBM Act as fiscal policy rules since 2004-05 in terms of reduction in Deficit to GDP ratio in the period 2004-05 to 2012-13.u_{t1} is the error term of the model.
To examine the expenditure management policy of the state finance, we have fitted a time trend model using the ordinary least square method. The revenue expenditure, the components of revenue expenditure, capital outlay, and total expenditure relative to GSDP at currents prices are taken to have a comparative view. The logarithmic value of these variables are taken as dependent variable and fitted against the time trend to compute the growth pattern. The model is given below.

$Log(Y) = a_1 + b_1t_1$……..(3)

Where, **Y** is dependent variable and **'t_1'** takes value from 1 (1980-81) to 22 (2001-02). This will treated as period 1.**'b_1'** is compound average growth rate (CAGR) in in these variables during this period.

$Log(Y) = a_2 + b_2t_2$……..(4)

and when, **'t_2'** takes value from 1 (2002-03) to 12 (2013-14). This will be treated as period 2.**'b_2'**is compound average growth rate (CAGR) in in these variables during this period.

We have made a comparative analysis for these two periods. The changes during these periods will be considered to be statistically significant if 'p value' is less than 5% and t ratio is significant at at 1% level of significance.

To achieve the third objective **(c)**, we have estimated the sensitiveness (elasticity) of capital outlay on GSDP by using the following equation

$\log(GSDP) = \alpha + \beta_1 \log(CO) + u_t$……..(5)

GSDP: Gross State Domestic Product at current prices, CO: Capital Outlay, $\beta_1$is elasticity of CO relative to GSDP

It may be pointed out that stationarity is one of the major issues in time series analysis. Therefore,the stationarity of theses fiscal variables is checked since most fiscal time series data are non-stationary[4]i.e., they tend to exhibit a deterministic and/or stochastic trend. We have applied Augmented Dickey-Fuller (ADF, 1979), Phillips-Perron (PP,1988) and KPSS (1992) unit root to check whether the series (at levels or at their first or second difference) is stationary.In the next step, we have examined the existence of a long run or, equilibrium economic relationship between these variables by applying cointegration test. The coinegration test indicates the stable and non-spurious, long run relationship among them over the relevant time period. Two or more time series variables are said to be cointegrated if each of the series are themselves non-stationary, but a linear combination of them is stationary (Engle and Granger 1987).After establishing the long run relationship between GSDP and capital outlay (CO) for the state, the Granger-causal relationship among the variables has been examined.
Granger causality distinguishes between unidirectional and bi-directional causality. Unidirectional causality is said to exist from CO to GSDP if CO causes GSDP but GSDP does not cause CO and vice versa. Both CO and GSDP will be considered as statistically independent if neither of them causes other. If both CO and GSDP cause each other, then a mutual feedback exists. We have applied the VAR Granger Causality/Block Exogeneity Wald Tests to examine the causal relationship between CO and GSDP.The chi-square (Wald) statistics is used to examine significance of the test.Then, the Johansen (1988, 1991, 1995) procedure of cointegration, have been chosen to employ to test the long run relationship of the fiscal variables.The presence of a cointegrating relation forms the basis of the vector error correction model (VECM) specification. To employ VECM specification, we look into the standard criteria of lag length selection through the Schwartz criterion.

5. Results and Analysis

5.1 Structural Break in Deficit Variables

[4]Many of the macroeconomic variables are difference stationary, I (1) variables. The first differences of logarithms of initial variables represent the rate of change of these variables. Thus, the application of the first differences in econometric studies becomes useful
.

As depicted in Chart 2, Revenue Deficit, Fiscal Deficit and Primary Deficit relative to GSDP have deteriorated consistently from 1992-93 to 2001-02 except during 1997-98.Theses deficit ratios have improved since 2002-03.

The objective of this section is to capture the major changes which occurred in expenditure management in the state finance of Odishafrom 1980-81 to 2013-14. To validate statistically, an attempt has been made on the full data set to examinethe structural break in the deficit ratios (Equation 1). The impact of FRBM Act on the expenditure management policy has been examined through empirical method (Equation 2).The empirical results of the model are given below in table 1.

Table 1: Empirical results of the Structural Break and FRBM dummytest
Sample: 1980-81 to 2013-14
observations: 34

	Explanatory Variables	
	FRBM Dummya$_1$	**Time Dummya$_2$(%)**
Dependent Variables		
RDR	**2.84**	**(-) 0.30%**
t ratio	**4.18**	**3.33***
p value	**(0.0)**	**(0.00)**
FDR	**4.20**	**(-)0.42%**
t ratio	**7.35**	**4.78***
p value	**(0.00)**	**(0.00)**
PDR	**3.67**	**(-)0.31%**
t ratio	**5.94**	**3.31***
p value	**(0.00)**	**(0.00)**

*1% level of significance, (-) indicates the decline (improvement) in the deficit ratio.

The findings of the time dummy test indicate that the growth rate in RDR, FDR and PDR have improved(declined) by 0.30%, 0.42% and 0.31% respectively on yearly basis from 2002-03 to 2013-14. The significance of the improvement in the fiscal balance is measures throughboth't ratio at '1%' level of significance and 'p value'at less than 5% (0.05) for all the deficit ratios. Therefore, it is empirically proved that there is a structural break in fiscal indicators which clealy indicates improvement in fiscal balance in the statesince 2002-03.It is also established from the FRBM dummy test that FRBM Act does have a significant effect on the deficit ratio as FRBM dummy is significant at the both 't ratio' at 1% level of significance and (p) value which is less than the 5%(0.05).Though FRBM Act was implemented in 2004-05 in the State, as preparatory step, the State had taken initiatives to reforms its expenditure policy to improve the fiscal scenario so that the State can adhere to the guidelines of FRBM Act in 2004-05. As a result, the implementation of FRBM Act has been successful in bringing in sound finance in the State fiscal space.

Odisha ranks the best among the no- special category states (NSCS) in terms of fiscal deficit ratioas well as improving performance from its Budget Estimate (BE). Traditionally,Odisha has not approached the market for borrowings from 2011-12 to 2012-13[5].

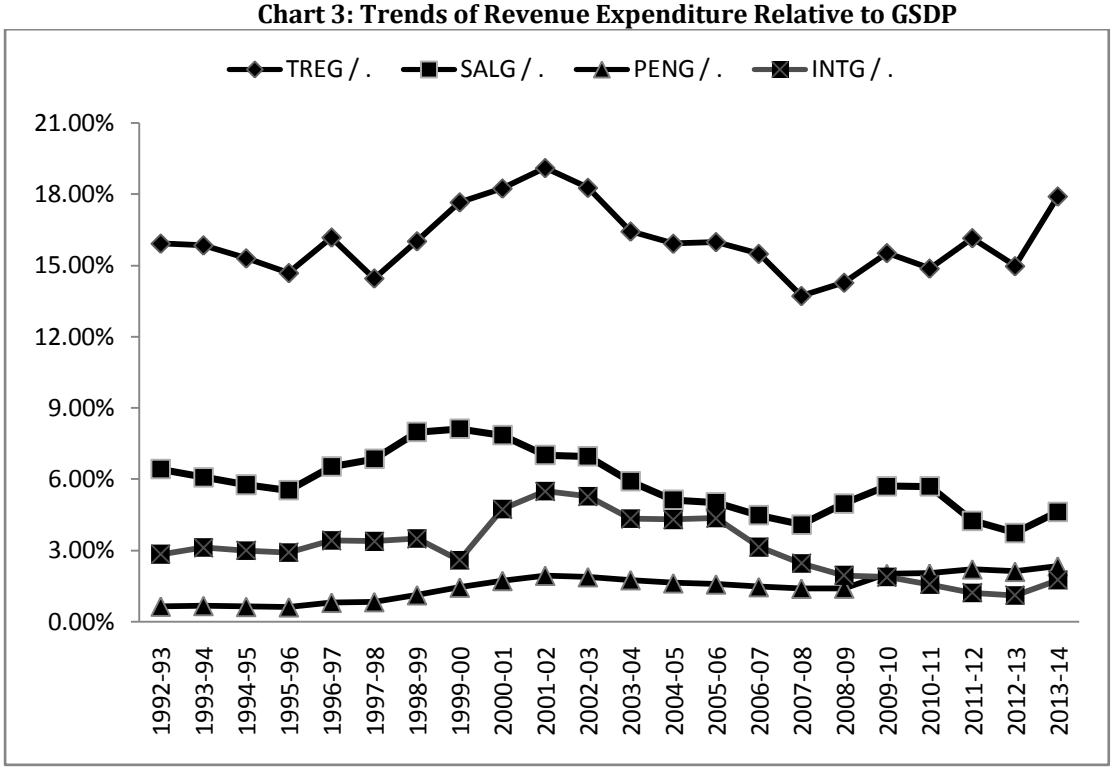
5.2 Trend Analysis of Revenue and Expenditure

The policy decision for compression of the total revenue expenditurehas contributed for the improvement in these three deficit indicators. Total revenue expenditure to GSDP ratio was at the peak of 18.25%, 19.11% and 18.27% in the year 2000-01, 2001-02 and 2002-03 respectively. From 2003-04 to 2007-08, a consistent downward trend has been witnessed in revenue expenditure ratio. It has recorded a low of 13.71% in 2007-08. The driving factor for the declining trend in revenue expenditure ratio is decrease in expenditure on salary and

[5] State Finance 2013-14, STCI: 10 February,2014

expenses on interest payment. The expenditure on salary relative to GSDPwas at the peak of 8.12% in 1999-00 has been consistently declining till 2008-09. It recorded a low of 3.72% in 2012-13. Therevenue outflow on account of interest payment relative to GSDP whichwas at the peak of 5.48% in 2001-02 has come down to the level of 1.10% in 2012-13. The compression of the revenue expenditure has been achieved mainly by reducing the salary and interest payment. This has established the strategy for prudent management of the state finance(Chart 3).

Chart 3: Trends of Revenue Expenditure Relative to GSDP



TREG: Total Revenue Expenditure Relative to GSDP, SALG: Salary Expenditure Relative to GSDP, PENG: Pension Expenses Relative to GSDP, INTG: Interest Payment Relative to GSDP(**Source: Budget Documents and Economic Survey (various issues), Govt. of Odisha)**

Though, capital outlay relative to GSDP has been compressed from 1.96 % in 2002-03 to in 1.43% in 2006-07, it has increased graduallysince2007-08 from 2.20% to 2.72%at the end of 2013-14 as compared to national average of 2.4% for non-special category states during these years[6].

The compound average growth rate (CAGR) of the revenue and expenditure variables during 1980-81 to 2001-02(Period 1)and2002-03 to 2013-14 (Period 2) are compared to validate our above analysis. The CAGR is calculated from the equation 3 and 4.

Table 2: Results of Time Trend Model

1980-81 to 2001-02(Period 1)				**2002-03 to 2013-14 (Period 2)**		
	b_1 (%)	**' t' Ratio**	**p' value**	**b_2 (%)**	**' t' Ratio**	**p' value**
TRRG	**-0.18**	**-2.80****	**1.00%**	**0.001**	0.31	97%
TEG	**-0.09**	-1.00	32.00%	**-0.15**	**-3.05****	**3.50%**
TREG	**0.06**	1.03	31.00%	**-0.30**	**-3.5***	**0.40%**
SALG	**0.09**	**2.74****	**1.00%**	**-0.20**	**-3.16***	**0.42%**
INTG	**0.11**	**6.72***	**0.00%**	**-0.40**	**-6.93***	**0.00%**
PENG	0.08	**8.4***	**0.00%**	0.10	0.26	79.00%
COG	**-0.10**	**-4.84***	**1.00%**	**0.18**	**3.8***	**0.35%**

[6] Ibid

TRRG: Total Revenue Receipt Relative to GSDP, TEG: Total Expenditure Relative to GSDP, COG: Capital outlay Relative to GSDP TREG: Total Revenue Expenditure Relative to GSDP, SALG: Salary Expenditure Relative to GSDP, INTG: Interest Payment Relative to GSDP, PENG: Pension Expenses Relative to GSDP, * 1% level of significance, **5% level of significance
Source: Budget Documents and Economic Survey (various issues), Govt. of Odisha

TRRG has declined by 0.18% on an average in each year duringperiod 1 (statistically significant at 5% level), whereas, the TRRG has not declined in period 2. The TEG has witnessed a compression by 0.15% in each year during period 2 (statistically significant) as compared to period 1, wherein, the decline has been statistically insignificant in period 1. This compression in TEG is contributed by decline in TREG. TREG is declined by 0.30% in period 2 as compared to insignificant rise in period 1. The decline in TREG in period 2 is mainly contributed by decline of 0.20% in salary expenses and 0.40% in interest expenses, against increase in these expenses in period1. However, COG in period 2 has gone up by 0.18 %(statistically significant) as compared to a statistically significant decline of 0.10% in each year during period 2. Hence, it is evidenced that the expenditure management policy since 2002-03, has been through reducing revenue expenditure and augmenting the capital expenditure.

To manage the high deficit level of the state prior to 2002-03, the rationalisationand compressionof economically unproductive revenue expenditure and simultaneously, by boosting the volume of capital outlay(higher capital outlay to GSDP ratio)having higher multiplier effect on GSDP has resulted in rising trend in growth in GSDP.The multiplier effect of capital outlay for the states in India is calculated at 2.13 as compared to multiplier effect of 0.60 for revenue expenditure (Jain& Kumar, 2013). This proves the effective and prudent management of state finance in Odisha.

In order to tide over their liquidity mismatches, the state governments have access to several lines of credit from the RBI. The state governments have access to Ways and Means Advances (WMA) and Overdraft (OD) facility from the RBI. Under the provisions of section 17 (5) of the RBI Act, the RBI has been extending WMA facility to the states since 1937. Overdraft (OD) facilities are provided when there is a shortfall in the agreed minimum cash balance maintained with the RBI. However, since the end of 2005, the State Govt. has not availed either ways and means advances or overdraft from RBI. State Government has accumulated sizeable surpluses in recent years, reflecting the fiscal consolidation process undertaken since 2002-03.

5.3 Measurement of Elasticity of Capital Outlay on GSDP

The result of unit root is presented in (Appendix -Table 3). We have included a time trend and an intercept in the level form and only the intercept in the first difference of each variable. Results show that in all the tests, all of the variables are integrated of order 1, i.e., **I(1).** They are non-stationary at level and stationary at first difference.

Having found that all the two variables are difference stationary (that is, they are integrated of order one), our next step is to examine whether or not there exists at least one linear combination of the non-stationary variables (in level form) that is integrated of order zero (I(0)). For this purpose, we look into the standard criteria of lag length selection (Appendix - Table 4). The Schwartz criterion suggests the lag length as 1along with FPE and the Hannan Quinn (HQ) information criterion,except the Akaike information. We have selected 1 for the lag order.

Then we have taken, cointegration test based on the Maximum Likelihood method of Johansen (1979) that suggests two tests (the trace test and the maximum eigenvalues test) statistics todetermine the cointegration rank. Taking no deterministic trend, a lag interval in first differences up to 1 and the MacKinnon-Haug-Michelis (1999) p-values, we see that the null hypothesis of no cointegrating relationship can be rejected at the five percent level (trace

statistic = 13.95 > critical value = 12.32 (p-value: 0.02); and maximal Eigenvalue statistic= 13.06 > critical value = 11.22 (p-value: 0.02)), thereby suggesting that there is one (unique) linear combination of these non-stationary variables (in level form) that is stationary (Appendix - Table 5). The existence of the cointegratingvector has confirmed the long run equilibrium relation betweenLGSDP and LCO.

Since, the long run relationship between GSDPand capital outlay (CO) for the state is established, we have examined the Granger-causal relationship among these variableVAR through Granger Causality/Block Exogeneity Wald Tests (Appendix - Table 6).

A chi-square test statistics of 8.14 for LCO with reference to LGSDP represents the hypothesis that lagged coefficients of LCO in the regression equation of LGSDP are equal to zero. Hence, LCO Granger causes for LGSDP at 1% levels of significance. Following the similar argument, LGSDP does not cause LCO. This indicates the unidirectional causality from LCO to LGSDP.
The co-integrating regression (normalized on LTE) through VECM(appendix- Table 7).

$$\log(GSDP) = 4.85 + 1.35 \log(CO) + u_t \ldots\ldots\ldots\ldots(6)$$
$$(3.16^*) \quad (3.23^*)$$

*t ratio at 1% level of significance

It is indicated that, in the long run, capital outlayhas a positive and highly significant (statistical) effect on the total GSDP(Equation 6). It is estimated that 10% rise in capital outlay has raisedthe GSDP by 13.50%from 1980-81 to 2013-14.The elasticity of capital outlay on GSDP during 2980-81 t0 2013 -14 is estimated at 1.35.

The steady state of long run equilibrium relationship is confirmed through error correction term (ECT). The coefficient of ECT is negative and significant at 1% level and the results shows that any short term deviation of GSDP from its equilibrium point during a year is corrected to the extent of 4% (speed of adjustment).

6. Conclusion

In this paper, the expenditure management policy of the Govt. of Odisha from 1980-81 to 2013-14 has been empirically examined.It is established that revenue deficit, primary deficit and fiscal deficit relative to GSDP have declined since 2002-03 because of the reforms in the state expenditure policy. There is a significant structural break in these deficit ratios since 2002-03. It is also established that the implementation of FRBM Act, 2005 as part of the fiscal policy rule,has significant bearing on expenditure management of the State.For effective expenditure management policy, the state has meticulously started reforming the state finance since 2002-03, which in turn, was helpful for the success of FRBM Act in 2005. The fiscal consolidation of Stateis witnessed from the compression of total revenue expenditure relative to GSDP which is mainly driven by significant decline in both salary and interest expenses. To overcome the persistent deficit level of the state till 2001-02, the State has made a deliberate policy decision to compress and rationalize the revenue expenditure which are economically unproductive and augmenting the volume of capital outlay (higher capital outlay to GSDP ratio) which has higher multiplier effect on GSDP, has taken the State to a upper trajectoryin economic growth since 2002-03.As a result, the State has prudently managed its liquidity position;it has not resorted to ways & means advances or over draft from RBI since the end of 2005. Also, the State has not approached for market borrowing. Therefore, a new era in state finance has started since 2002-03.
The full data set is taken from 1980-81 to 2013-14; we have estimated the long run elasticity of capital outlay on the GSDP of the state. It estimated at 1.35 which is elastic. This indicates that growth in capital outlay increases the growth in GSDP more than proportionately indicating growth inducing capital outlay.

7. Policy Prescription and Suggestions

Since 2005-06, Odisha has been a revenue surplus State. Global economic slowdown since 2008-09 and increasing economic and financial integration, the trade, finance & commerce of the State have adversely affected, as a result, the growth trajectory the State has been slowed down to 7.50% and 4.92% (real GSDP) level respectively in 2010-11 and 2011-12. In order to adhere to the FRBM Act (Amendment), wherein it is mandatory for the State to generate revenue surplus, contain the fiscal deficit within 3% of GSDP; the thirteenth Finance Commission have assumed a nominal growth rate of 12.5% in GSDP for the State during the period 2010-15. The only way to adhere to FRBM Act is to have higher growth in GSDP. To expand the state economy further,there is a need to improve the productivity of capital and to augment capital outlay. Since, the impact of capital outlay on the growth of GSDP is highly elastic, the augmentation of capital outlay should be of prime importance. The higher capital outlay of the State should encourage Public Private Partnership (PPP) in creating more capital formation and generation of income. Incremental capital expenditure through PPP mode particularly in physical infrastructure sector i.e. roads, electricity distribution sector[7], social & education sector, transport etc. and social infrastructure would trigger the expansion of the state economy. At the same time, the improvement capital productivity should also be the policy intervention of the State. The State should map the capital outlay to outcome and steadfastly bringing out institutional reforms better transparency, which in turn, will create a growth inducing investment climate in the State and may encourage more private investment. The expansion of the state economy, subsequent to higher capital outlay and improved productivity will raise the tax buoyancy of the state resulting into higher state own tax revenue (SOTR) and tax efficiency. Besides, the State should bring in reforms in non-tax revenue by collecting revenues through appropriate user charges. Reforms in non-tax revenue should focus on rational non-tax structure which will be growth inducing.

Higher capital outlay along with improved productivity of the capital and reforms in non-tax revenue will induce higher growth which would further help in fiscal rectitude, rationalization of revenue expenditure and adherence to FRBM Act.

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[7] Losses in the electricity distribution in Odisha is high at 45.50 percent in 2011-12 because of inadequate capital expenditure (Mohanty et all, 2014).

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Appendix

Table 3: Unit Root Test Results

	ADF Test (SIC)	PP Test (Bartlett Kernel)	KPSS Test
LGSDP			
Level (Trend & Intercept)	2.25 (0)	2.44 (3)	0.85 (5)**
First Difference (Intercept)	6.22 (0)*	6.20 (3)*	0.07 (%)*
Decision	I (1)	I (1)	I (1)
LCO			
Level (Trend & Intercept)	2.62 (0)	2.64 (3)	0.13 (4)
First Difference (Intercept)	9.17 (8)*	6.22 (3)*	0.07 (4)*
Decision	I (1)	I (1)	I (1)

1% level of significance

Table 4: VAR Lag Order Selection Criteria

Lag	FPE	AIC	SC	HQ
0	0.139488	3.705899	3.802676	3.733768
1	0.000403*	-2.14241	-1.852077*	-2.058802*
2	0.000467	-2.0038	-1.51992	-1.864463
3	0.00061	-1.75411	-1.07668	-1.559036
4	0.000714	-1.62849	-0.7575	-1.377678
5	0.000927	-1.42165	-0.3571	-1.115097
6	0.001005	-1.42427	-0.16617	-1.061979
7	0.000652	-1.983	-0.53135	-1.564979
8	0.00061	-2.238108*	-0.5929	-1.764349

VAR Lag Order Selection Criteria; Endogenous variables: LIFDI LM LOFDI LX; Exogenous variabl 1980-81 to 2013-14;
LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction erro information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn informatio indicates lag order selected by the criterion.

Table 5: The Unrestricted Cointegration Rank Test Results

	Null	**Alternate**	**Statistic**	**0.05 Critical Value (p**
Unrestricted Cointegration Rank Test (Maximal Eigenvalue)	r=0	r=1	13.95	12.32
Unrestricted Cointegration Rank Test (Trace)	r=0	r=1	13.06	11.22

Max-eigenvalue test indicates 1 cointegrating equation at the 0.05 level. Traco test indicates 1 cointegrating equation a indicates the number of cointegrating relations (the cointegrating rank).

Table 6: VAR Granger Causality/Block Exogeneity Wald Tests

Sample: 1980 2013

Dependent Variable	Excluded	Chi-Square Statistics	Degrees of Freedom	P value
LGSDP	LCO	8.14	2	0.0171
	All	8.14	2	0.0171
LCO				
	LGSDP	3.00	2	0.2228
	All	3.00	2	0.2228

Table 7: Cointegrating Regression (Vector Error Correction Estimates)

LGSDP	**LCO**	**C**
1.0000	1.35	4.85
	(0.41806)	(1.5346)
	[3.2353]	[3.1627]

Cointegrating Equation: Log likelihood = 37.43
Normalized cointegrating coefficients
Note: standard errors are in parenthesis and t-ratios are in brackets.

Table8 : Time Series Full Data Set (1980-81 to 2013-14)

(In Rs. Crore)											
Year	**GSDP**	**TRR**	**TE**	**TRE**	**CO**	**SAL**	**INT**	**PEN**	**RDR**	**FDR**	**PDR**
1980	3708.00	621.35	744.64	546.85	197.79	150.78	50.68	7.29	2.01%	-4.06%	-2.70%
1981	4162.00	601.54	741.30	573.56	167.74	171.26	66.97	8.71	0.67%	-3.40%	-1.80%
1982	4448.00	801.62	1096.97	824.60	272.37	309.52	79.68	11.28	-0.52%	-6.79%	-5.00%
1983	5708.00	783.11	877.46	782.91	94.55	354.44	96.37	13.71	0.00%	-1.78%	-0.10%
1984	5694.00	823.51	1181.74	897.25	284.49	393.80	101.72	17.04	-1.30%	-5.76%	-3.98%
1985	6823.00	940.84	1309.58	1000.93	308.65	438.70	125.99	20.09	-0.88%	-4.79%	-2.94%
1986	7427.00	1228.22	1599.29	1247.96	351.33	553.69	172.02	29.58	-0.27%	-5.39%	-3.08%
1987	7614.00	1333.08	1817.83	1407.59	410.24	630.94	207.01	36.85	-0.98%	-6.90%	-4.18%
1988	9613.00	1550.93	2047.82	1658.72	389.10	680.31	303.77	55.91	-1.12%	-5.43%	-2.27%
1989	11025.00	1740.72	2272.75	1846.11	426.64	778.51	310.42	68.58	-0.96%	-5.20%	-2.39%
1990	10904.00	2170.94	2781.59	2190.53	591.06	883.34	364.74	73.97	-0.18%	-6.02%	-2.67%
1991	14012.00	2447.26	3290.70	2635.02	655.68	1088.51	481.04	94.68	-1.34%	-6.52%	-3.08%
1992	19149.74	2913.16	3636.27	3048.88	587.39	1229.63	542.23	121.93	-0.71%	-3.86%	-1.03%
1993	21957.22	3208.23	4072.15	3479.37	592.78	1333.97	682.83	145.61	-1.23%	-4.13%	-1.02%
1994	26378.03	3575.88	4654.41	4035.52	618.89	1518.83	786.80	164.68	-1.74%	-4.36%	-1.38%
1995	32002.94	3890.71	5144.73	4697.81	446.92	1767.60	929.33	194.35	-2.52%	-4.36%	-1.46%
1996	31628.11	4286.76	5996.04	5117.25	878.79	2064.03	1079.44	252.72	-2.63%	-5.07%	-1.65%
1997	38300.64	4632.03	6391.77	5535.17	856.60	2623.36	1291.81	316.83	-2.36%	-4.70%	-1.33%
1998	42551.50	4554.40	7730.41	6816.90	913.51	3399.06	1484.92	475.30	-5.32%	-6.85%	-3.36%
1999	47891.68	5884.63	9257.83	8458.83	799.00	3886.77	1237.77	688.41	-5.38%	-8.01%	-5.43%
2000	48414.84	6902.02	9668.08	8833.99	834.09	3802.84	2286.88	832.07	-3.99%	-6.87%	-2.14%
2001	51703.71	7047.98	10768.93	9881.73	887.20	3627.60	2834.96	1003.22	-5.48%	-7.68%	-2.19%
2002	50223.00	8214.76	11588.76	10514.68	1074.08	3814.29	2885.58	1029.79	-4.58%	-7.05%	-1.30%
2003	61422.00	9440.24	11714.11	10861.16	852.95	3902.68	2860.28	1158.37	-2.31%	-4.02%	0.64%

2004	71428.00	11635.19	13429.04	12373.49	1055.55	3977.09	3332.02	1259.80	-1.03%	-2.49%	2.17%
2005	85096.49	14084.71	14641.58	13603.52	1038.06	4263.69	3697.10	1338.57	0.57%	-0.32%	4.02%
2006	101839.47	18032.62	17223.49	15772.02	1451.47	4551.50	3188.43	1484.59	2.22%	0.81%	3.94%
2007	129274.45	21967.19	20566.68	17723.27	2843.41	5275.88	3169.48	1801.36	3.28%	1.02%	3.48%
2008	148490.71	24610.01	24969.29	21190.12	3779.17	7375.50	2889.81	2074.96	2.30%	-0.39%	1.55%
2009	162946.43	26430.21	28939.47	25291.59	3647.88	9288.98	3044.17	3283.41	0.70%	-1.39%	0.48%
2010	194464.79	33276.16	33653.05	29367.95	4285.10	11219.93	3061.46	4011.00	2.01%	-0.34%	1.24%
2011	226236.00	36383.36	41985.60	36323.23	5662.37	9081.77	2576.43	4740.76	0.03%	-2.65%	-0.86%
2012	255459.08	41132.45	48556.42	40682.02	7874.40	9515.42	2807.23	5379.37	0.18%	-3.00%	-1.30%
2013	325908.17	46528.39	54942.10	45970.68	8971.42	13316.19	5007.86	6728.00	0.19%	-3.00%	-1.35%

GSDP: Gross State Domestic Product, TRR: Total Revenue Receipt, TE: Total Expenditure, TRE: Total Revenue Expenditure, CO: Capital Outlay, SAL: Salary Expenses, INT: Interest Expenses, PEN: Pension Expenses, RDR: Revenue Deficit Ratio, FDR: Fiscal Deficit Ratio, PDR: Primary Deficit Ratio

Source: Budget Documents and Economic Survey (various issues), Govt. of Odisha