DETERMINANTS AND IMPACT OF PUBLIC EXPENDITURE IN ODISHA

Dr. Sunita Mishra

Lecturer in Economics, Municipal College, Rourkela (Sundargarh), Odisha-768019, India

ABSTRACT

The theoretical framework and rationale of the study assess the most important fiscal parameter of the state of Odisha i.e., Expenditure parameter. As we know, aggregate of the expenditure of the state consists of Revenue expenditure and Capital expenditure, among which the largest share is contributed by Revenue expenditure. The paper highlights the responsiveness of expenditure to the automatic change in NSDP Elasticity approach, position of odisha among the 18 major non-special category states in terms of infrastructural development, bank credit, factory employment, level of urbanisation etc. and also examine the causative relationship between SDP and different expenditure variables in Odisha. The study is based on secondary source of data for the State from different government publications, Budget documents, Finance Accounts etc. The paper used different methodologies for analysis, which includes simple statistical techniques such as, ratio, percentage, and also Regression Analysis to estimate growth. In this regard models like, semi log, multiple regression, correlation, VAR models are used to analyse the time series data from 1980-81 to 2014-15 on revenue and capital expenditure of state finances . Apart from that to show the response of revenue expenditure to the automatic change in NSDP, Elasticity approach is utilized. The major results of the study are that higher growth in total expenditure in period t-1 leads to higher growth of SDP in period t. The same result holds only in case of growth of Total Non-Plan Expenditure. The results of VAR Granger Casualty Test are similar to the VAR Model excepting that Total Non-Plan Expenditure is found independent of SDP and there is also independence of SDP from Total Non-Plan Expenditure.

KEY WORDS: *budget, capital, elasticity, finance, grants, growth, NSDP, expenditure, VAR*

1. INTRODUCTION

In the context of nature of growth profile of the revenues of the state & pattern of expenditure one observes continuance of deficits though relatively of a lower magnitude as a result of FRBM Act. There is also continuance of debt position of the state particularly to finance developmental activities in the absence of declining role of central assistance to the state in the later years. In the interest of developing a sound fiscal system, it is pertinent to fulfill the requirement of enhancement of revenue base and on the other hand to control the growth of non-plan revenue expenditure and to enhance the growth of plan capital expenditures in spite of the structural bottlenecks manifested in the absence and/or imperfections in the market structures. It is therefore pertinent to examine the determinants of revenues as well as expenditures in the state of Orissa. In the following an attempts has been made to identify the interrelationships of expenditure with other relevant explanatory variables which contribute towards variations in the expenditure variables.

1. REVIEW OF LITERATURE

Under the Receipts account, according to **Bhattacharya (1984)**, examines the macro economic impact of public expenditure on economic growth. **Gupta (1980)** tries to access its impact on income distribution, **Premchand (1966)** evaluates the Control System relating to public expenditure, **Ready et al (1984)** provides a factual account of the growth of Government in India. **Shame, Sen and Gopal Krishnan (1996)** pointed out that the expenditure trends on the capital account is stagnant. It shows a fast rising revenue expenditure in India, despite the lack of adequate infrastructure facilities within the country. **Jagannath Mallick(2013)** The Fiscal Responsibility and Budget Management (FRBM) Act 2003 was introduced in India in order to reduce revenue deficit by curtailing revenue expenditure. This paper examines the impact of public expenditure by type and nature on the income by constructing new data on combined capital expenditure and combined revenue expenditure of Centre and State governments of 15 major States during the period 1993—94 to 2004—05. This paper finds that, though public expenditure crowds-out private investment, public expenditure of all types and nature positively contributes to state income due to the inclusion of some productive expenditure in the revenue account. **Antra Bhatt,Claudio Sardoni(2016)** in their paper deals with the analysis of the relationship between public spending and growth as well as the dynamics of the ratio public

debt/GDP. They shows that a composition of public spending that favours productive expenditures, i.e. those with a direct positive effect on the economy's rate of growth, can determine a situation in which the ratio of the public debt to GDP is stable, even though the government runs primary deficits.

2. DATABASE & METHODOLOGY
The study is based on secondary source of data for the State from RBI Bulletins and CSO publications. The different methodologies for analysis, which includes simple statistical techniques such as, ratio, percentage have been used to show changes in fiscal parameters, the Regression Analysis used to estimate growth. In this regard models like, Linear, semi-log, multiple regression, VAR models are used to analyse the time series data on state finances of the economy.

1.1. POSITION OF ODISHA AMONG 18 MAJOR NON-SPECIAL CATEGORY STATE
The importance of growth of infrastructure in the state is a reflection of development or its absence as it creates and generates conditions for the expansion of market institutions. The position of the state of Orissa among the 18 major non-special category states can be examined from Table-1.1 presented below.

It is observed from the Table that there exist variations across the states in terms of level of development. The Coefficients of variation seems to be very high in case of Bank credit, factory employment and per capita income. Orissa as in 2014-15 continues to have the lowest per capita income next only to Bihar, Jharkhand and Uttar Pradesh. Lowest non-primary income is registered by Andhra Pradesh, Chattisgarh, Rajasthan, Uttar Pradesh and Orissa. The level of Urbanisation is lowest for the state of Orissa next only to Bihar. Orissa's position in terms of literacy is moderately high compared to lower literacy states like Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh. Factory employment in the state is also found one of the lowest next only to Bihar, Madhya Pradesh and Uttar Pradesh. In terms of Per capita Bank Credit Orissa's position is better than only states of Bihar, Jharkhand and Uttar Pradesh. Thus in terms of level of development Orissa continues to remain as one of the most backward states of the Indian Union.

Table-1.1 Indicators of development in Non-special category of states, 2014-15

States	Per-capita income	%non-primary	%urbanisation	%literacy	Factory emp/lk popln	Per-capita bank credit
AP	90517	69.46	33.36	67.02	595	50604
Bihar	36143	77.35	11.29	61.8	112	4580
Chattisgarh	64442	68.43	23.24	70.28	678	16723
Gujrat	106831	76.49	42.6	78.03	2256	41664
Haryana	147076	80.53	34.88	75.55	2235	49143
Jharkhand	52147	71.47	24.05	66.41	570	9733
Karnataka	101594	81.03	38.67	75.36	1411	52655
Kerla	103820	86.20	47.7	94	1139	50943
MP	59770	59.38	27.63	69.32	416	15371
Maharastra	129235	89.39	45.22	82.34	1588	136154
Odisha	59229	70.55	16.69	72.87	628	15395
Punjab	99578	71.79	37.48	75.84	2103	57150
Rajasthan	72156	67.29	24.87	66.11	646	22883
Tamilnadu	128366	87.43	48.4	80.09	2724	73892
Uttarakhand	115632	84.08	38.23	78.82	3324	22086
UP	40373	69.21	22.27	67.68	413	10852
Wb	78903	74.43	31.87	76.26	719	28792
Cof of Var.	37.58	10.94	33.71	10.43	74.49	83.27

2. DETERMINANTS OF EXPENDITURE
The major components of Expenditure of the state being Revenue and Capital expenditure, it was observed earlier that there has been greater role for the reduction in Non-plan component of Revenue expenditure and enhancement of Plan component of Capital expenditure. Orissa has recorded higher percapita aggregate receipts compared to aggregate expenditure in 2014-15 among the few states having such characteristics as noticed earlier though the level of percapita aggregate expenditure remains one of the lowest next only to Bihar, Jharkhand, MP, UP and WB. Same pattern was also observed in case of Non-plan revenue expenditure. The state also registered hgher per capita Plan Capital expenditure next only to Gujarat, Karnataka, Uttarakhand and Tamilnadu.

The inter-relationship of expenditure and the indicators of development can be examined from Table-2.1 presented in the correlation matrix below.

Table-2.1 Correlation matrix of expenditure variables and development indicators

Vraiables	Per-Capita Income	%Non-Primary	%Urbanisation	%Literacy	Factory Emp/Lk Popln	Per-Capita Bank Credit
PCAGE	0.404	0.215	0.503	0.341	0.264	0.342
PCRE	0.467	0.276	0.534	0.396	0.281	0.404
PCNPRE	0.514	0.338	0.612	0.481	0.296	0.503
PCCE	-0.109	-0.185	0.074	-0.103	0.036	-0.132
PCPCE	-0.170	-0.130	-0.107	-0.228	0.028	-0.272

It is interesting to observe that all the expenditure variables in per capita terms have low level of association with different indicators of development. In fact the Total Capital expenditure and Plan Capital expenditure are negatively correlated with most indicators of development though the coefficients are very low. Relatively higher positive correlations of revenue expenditure and total expenditure are found in case of % of urbanization.

The importance of indicators of development can also be examined in the following using multiple regression analysis to study the interrelationships of expenditure variables with tax base proxy NSDP, structural variable represented by non-primary income and the other indicators of development. The results of the Multiple regression analysis on state-wise data for the year 20145-15 are presented in Table-2.2 presented below.

Table 2.2 Results of multiple regression analysis

Dependent Variables	A	B1	B2	B3	B4	B5	B6	R2
PCAGE	5.788	-0.490	-0.137	0.358	-0.376	0.117	0.210	0.414
		(-0.778)	(-0.144)	(0.703)	(-0.281)	(0.544)	(0.911)	
PCRE	5.183	-0.439	-0.068	0.291	-0.341	0.111	0.252	0.417
		(-0.617)	(-0.063)	(0.506)	(-0.226)	(0.458)	(0.964)	
PCNPRE	4.324	-0.475	0.072	0.470	-0.234	0.029	0.343	0.549
		(-0.615)	(0.062)	(0.753)	(-0.143)	(0.111)	(1.211)	
PCCE	8.239	-0.850	-0.192	0.618	-1.086	0.216	0.060	0.302
		(-1.276)	(-0.192)	(1.147)	(-0.768)	(0.949)	(0.245)	
PCPCE	8.239	-0.850	-0.192	0.618	-1.086	0.216	0.060	0.250
		(-0.788)	(0.575)	(0.562)	(-1.211)	(1.058)	(-0.193)	

PCAGE- Percapita Aggregate Expenditure, PCRE- Percapita Revenue Expenditure, PCNPRE-Percapita Non-Plan Revenue Expenditure, PCCE- Percapita Capital Expenditure, PCPCE- Percapita Plan Capital Expenditure
Explanatory Variables: 1. Percapita income 2. % Non-primary Income, 3 % Urbanisation, 4. % Literacy, 5. Factory employment perlakh of population 6. Percapita Bank Credit
Source: 1. RBI Bulletin 2. Economic Survey of Karnataka, 2015-16

It is observed from the Table that all the equations have a low value of R^2 excepting PCNPRE. The expenditure variables in general have a negative relationship with Percapita Income, non-primary income and literacy, though these are not statistically significant. The positive coefficients observed in case of Urbanisation, Factory employment and Bank credit also are not statistically significant. These confirm the earlier observations from correlation analysis that expenditure variables are independent of indicators of development.

The analysis of dependence of expenditure variables on NSDP has been carried out with a double log model including NSDP and %Non-primary income as independent variables and including a dummy for FRBM Act. It is possible to examine the determining role of NSDP and the coefficient of SDP representing Income elasticity of expenditure. It can also enable to obtain the addition to elasticity due to FRBM Act.

Table-2.2 Regression Results of Double Log Dummy Variable Model

Dependent Variables	A	B1	B2	B3	B4	B5
PCAGE	-3.567	0.924*	-0.702	0.147**	1.802*	0.998
		(27.888)		(2.467)	(7.167)	
PCRE	-3.662	1.015*	-0.182	0.025	1.594*	0.998
		(29.176)		(0.407)	(6.039)*	
PCNPRE	-3.903	1.080*	1.098	-0.268*	1.524*	0.996

		(25.599)		(-3.540)	(4.761)	
PCCE	-4.303	0.648*	-2.617	0.586*	2.445*	0.967
		(6.045)		(3.048)	(3.007)	
PCPCE	-2.742	0.440*	-5.596	1.287*	1.876**	0.970
		(4.526)		(7.377)	(2.543)	

It Is observed from the Table that all the equations having very high values of R^2 indicate that SDP and % Non-primary income are appropriate determinants for the variations in expenditure variables. B_1 representing the income elasticity is found to be high during PRE-FRBM period only in case of Percapita revenue expenditure and Percapita non-plan revenue expenditure. However, the increment to the slope coefficient during Post FRBM is found positive and statistically significant in case of Aggregate expenditure, which is contributed due to positive and significant increment in case of Percapita capital expenditure and Percapita Plan capital expenditure indicating that FRBM period has made Capital expenditure more responsive to changes in income. It is also noticed that increment coefficient of Revenue expenditure though positive is statistically not significant. In fact the increment to slope coefficient is negative in case of Percapita Non-plan revenue expenditure, which also is statistically significant. Thus it turns out that FRBM Act has made revenue expenditure and particularly non-plan revenue expenditure less responsive possibly an outcome of state intervention. It is also interesting to note that growth of non-primary income contributes towards higher expenditure for Total, revenue as well as capital as the coefficients are positive and statistically significant.

The use of elasticity approach can be made to capture the impact of growth of income on expenditure. However, in such an approach the reverse causation from expenditure to income cannot be tested. The limitation can be taken care of by VAR (Vector Autoregressive Model) and Granger Causality Model. The results of the VAR Model to examine the causative relationship between SDP and different Expenditure variables are presented in the Table-2.3 below. It is observed that higher growth in Total Expenditure in period t-1 leads to higher growth of SDP in period t. This is revealed by statistical significance of computed `t' for estimated coefficient of LSDP. The same result holds only in case of growth of Total Non-plan Expenditure However, none other estimated coefficients appear to be statistically significant in any of the equations. Similarly, higher growth in SDP in period t-1 leads to higher growth of all the Expenditure variables excepting Total Plan Expenditure, Non-plan expenditure in General services and Total expenditure in General Services.

Table-2.3 Results of VAR Model

Independent	Dependent-LSDP)		Independent	Dependent-LTE	
LTE(-1)	0.2854* (2.646)		LSDP(-1)	0.4370* (3.274)	
	Dependent-LSDP			Dependent-LTPE	
LTPE(-1)	O,0411 (0.666)		LSDP(-1)	0.1200 (1.199)	
	Dependent-LSDP			Dependent-LTNPE	
LTNPE(-1)	0..1495* (1.989)		LSDP(-1)	0.3448)* (2.361)	
	Dependent-LSDP			Dependent-LPESS	
LPESS(-1)	0.0320 (0.5999)		LSDP(-1)	0.5236* (3.087)	
	Dependent-LSDP			Dependent-LNPESS	
LNPESS(-1)	0.1032 (1.273)		LSDP(-1)	0.9022* (5.145)	
	Dependent-LSDP			Dependent-LTESS	
LTESS(-1)	0.1436 (1.553)		LSDP(-1)	0.8190* (4.745)	
	Dependent-LSDP			Dependent-LPESS	
LPESS(-1)	0.0447		LSDP(-1)	0.5363*	

	(1.351)			(3.455)	
	Dependent-LSDP			**Dependent-LNPESS**	
LNPESS(-1)	0.0315 (0.456)		**LSDP(-1)**	0.4212* (2.788)	
	Dependent-LSDP			**Dependent-LTEES**	
LTEES(-1)	0.0599 (1.330)		**LSDP(-1)**	0.5382* (3.449)	
	Dependent-LSDP			**Dependent-LPEGS**	
LPEGS(-1)	-0.0063 (-0.291)		**LSDP(-1)**	0.1599* (1.788)	
	Dependent-LSDP			**Dependent-LNPEGS**	
LNPEGS(-1)	0.0597 (1.116)		**LSDP(-1)**	0.0632 (0.842)	
	Dependent-LSDP			**Dependent-LTEGS**	
LTEGS(-1)	0.0648 (1.1496)		**LSDP(-1)**	0.0736 (0.951)	

- **Figures in the parentheses give t-values**

(For a large sample n≥30 the critical t-value at 5% significance level becomes ≥ 1.697 (in one-tailed test)

In the following an attempt also has been made to examine the direction of causality between expenditure variables and SDP. The results of the VAR Granger Causality Test are presented in Table-2.4 below.

Table-2.4 Results of VAR Granger Causality Test

	Dependent	LSDP		Dependent	LTE		
Excluded	X^2	Df	P	Excluded	X^2	Df	P
LTE	7.0029	1	0.0081	LSDP	10.719	1	0.0011
					LTPE		
LTPE	0.4438	1	0.5053	LSDP	1.4383	1	0.2304
					LTNPE		
LTNPE	0.0156	1	0.9004	LSDP	2.6668	1	0.1025
					LPESS		
LPESS	0.3544	1	0.5488	LSDP	9.5309	1	0.0020
					LNPESS		
LNPESS	1.6208	1	0.2030	LSDP	11.9385	1	0.0000
					LTESS		
LTESS	2.4125	1	0.1204	LSDP	22.5163	1	0.0000
					LPEES		
LPEES	1.8243	1	0.1768	LSDP	11.9385	1	0.0005
					LNPEES		
LNPEES	0.2085	1	0.6479	LSDP	7.7739	1	0.0053
					LTEES		
LTEES	1.7696	1	0.1834	LSDP	11.8975	1	0.0006
					LPEGS		
LPEGS	0.0847	1	0.7710	LSDP	3.1984	1	0.0737
					LNPEGS		
LNPEGS	1.2461	1	0.2643	LSDP	0.7091	1	0.3997
					LTEGS		
LTEGS	1.3217	1	0.2503	LSDP	0.9039	1	0.3417

The following conclusions follow from the Results of Causality Test. The p values presented in the Table are used to draw conclusion drawn regarding direction of causality between variables. The p-value for the computed X^2 statistic when found exceeding 0.10 (p>0.10), leads to acceptance of the Null Hypothesis of absence of Granger causality in the VAR Model.

LTE Granger cause LSDP	LSDP Granger Cause LTE
LTPE does not Granger cause LSDP	LSDP does not Granger Cause LTPE
LTNPE does not Granger cause LSDP	LSDP does not Granger Cause DLTNPE
LPESS does not Granger cause LSDP	LSDP Granger Cause LPESS
LNEESS does not Granger cause LSDP	LSDP Granger Cause LNPESS
LTESS does not Granger cause LSDP	LSDP Granger Cause LNPESS
LPEES does not Granger cause LSDP	LSDP Granger Cause LPEES
LNPEES does not Granger cause LSDP	LSDP Granger Cause LNPEES
LTEES does not Granger cause LSDP	LSDP Granger Cause LTPEES
LPEGS does not Granger cause LSDP	LSDP Granger Cause LPEGS
LNPEGS does not Granger cause LSDP	LSDP does not Granger Cause LNPEGS
LTEGS does not Granger cause LSDP	LSDP does not Granger Cause LTEGS

The results so obtained are similar to the one obtained in case of VAR Model excepting that Total Non-plan Expenditure is found independent of SDP and that there is also independence of SDP from Total Non-plan expenditure. Thus it may be inferred that there is a bidirectional causality Total expenditure and SDP and that there is unidirectional causality running from SDP to all the expenditure variables excepting Total plan expenditure, Total Non-plan expenditure, Non-plan expenditure on General service and Total expenditure on General services. Thus broadly Wagner's law is supported by Granger test.

The inter-relationship between revenue and expenditure has been discussed by many studies in the context of fiscal imbalance experienced by many countries. In the following an attempt has been made to examine the causal relationship between total receipts and total expenditure. The variables selected for this anlaysis are Total Receipts (TR) and Total Expenditure (TE). The causality test has been carried out at a disaggregated level also for Plan and Non-plan expenditure. The expenditure variables taken are Revenue Plan Expenditure (RPE), Revenue Non-plan expenditure (RNPE), Capital Plan expenditure (CPE), Capital Non-plan expenditure (CNPE), Total Plan expenditure (TPE), Total Non-plan expenditure (TNPE) and Total Expenditure (TE). The same procedure adopted in case of causality test between SDP ad expenditure variables has been utilized. Table-2.5 and Table-2.6 present respectively the Results of VAR Model and Results of Granger Causality .

Table-2.5 Results of VAR Model

Independent	Dependent-LTR		Independent	Dependent-LRNPE	
LRNPE(-1)	0.2891 (1.624)		**LTR(-1)**	0.4415* (2.300)	
	Dependent-LTR			**Dependent-LCNPE**	
LCNPE(-1)	-0.0044 (-0.1557)		**LTR(-1)**	1.0612* (5.052)	
	Dependent-LTR			**Dependent-LTNPE**	
LTNPE(-1)	0.0629 (0.3834)		**LTR(-1)**	0.5914* (2.565)	
	Dependent-LTR			**Dependent-LTE**	
LTE(-1)	0.8385 (2.962)		**LTR(-1)**	0.4053 (1.2906)	

The following conclusions follow from the Results of Causality Test. The p values presented in the Table are used to draw conclusion drawn regarding direction of causality between variables. The p-value for the computed X^2 statistic when found exceeding 0.10 (p>0.10), leads to acceptance of the Null Hypothesis of absence of Granger causality in the VAR Model.

LTE Granger cause LSDP
LSDP Granger Cause LTE

LTPE does not Granger cause LSDP	LSDP does not Granger Cause LTPE
LTNPE does not Granger cause LSDP	LSDP does not Granger Cause DLTNPE
LPESS does not Granger cause LSDP	LSDP Granger Cause LPESS

LNEESS does not Granger cause LSDP	LSDP Granger Cause LNPESS
LTESS does not Granger cause LSDP	LSDP Granger Cause LNPESS
LPEES does not Granger cause LSDP	LSDP Granger Cause LPEES
LNPEES does not Granger cause LSDP	LSDP Granger Cause LNPEES
LTEES does not Granger cause LSDP	LSDP Granger Cause LTPEES
LPEGS does not Granger cause LSDP	LSDP Granger Cause LPEGS
LNPEGS does not Granger cause LSDP	LSDP does not Granger Cause LNPEGS
LTEGS does not Granger cause LSDP	LSDP does not Granger Cause LTEGS

The results so obtained are similar to the one obtained in case of VAR Model excepting that Total Non-plan Expenditure is found independent of SDP and that there is also independence of SDP from Total Non-plan expenditure. Thus it may be inferred that there is a bidirectional causality Total expenditure and SDP and that there is unidirectional causality running from SDP to all the expenditure variables excepting Total plan expenditure, Total Non-plan expenditure, Non-plan expenditure on General service and Total expenditure on General services. Thus broadly Wagner's law is supported by Granger test.

The inter-relationship between revenue and expenditure has been discussed by many studies in the context of fiscal imbalance experienced by many countries. In the following an attempt has been made to examine the causal relationship between total receipts and total expenditure. The variables selected for this analaysis are Total Receipts (TR) and Total Expenditure (TE). The causality test has been carried out at a disaggregated level also for Plan and Non-plan expenditure. The expenditure variables taken are Revenue Plan Expenditure (RPE), Revenue Non-plan expenditure (RNPE), Capital Plan expenditure (CPE), Capital Non-plan expenditure (CNPE), Total Plan expenditure (TPE), Total Non-plan expenditure (TNPE) and Total Expenditure (TE). The same procedure adopted in case of causality test between SDP ad expenditure variables has been utilized. Table-2.5 and Table-2.6 present respectively the Results of VAR Model and Results of Granger Causality .

Table-2.5 Results of VAR Model

Independent	Dependent-LTR		Independent	Dependent-LRNPE	
LRNPE(-1)	0.2891 (1.624)		LTR(-1)	0.4415* (2.300)	
	Dependent-LTR			Dependent-LCNPE	
LCNPE(-1)	-0.0044 (-0.1557)		LTR(-1)	1.0612* (5.052)	
	Dependent-LTR			Dependent-LTNPE	
LTNPE(-1)	0.0629 (0.3834)		LTR(-1)	0.5914* (2.565)	
	Dependent-LTR			Dependent-LTE	
LTE(-1)	0.8385 (2.962)		LTR(-1)	0.4053 (1.2906)	

- **Figures in the parentheses give t-values**

It is observed that estimated coefficients of all the components of Expenditure appear to be statistically not significant in any of the equations towards changes in Total Receipts making Expenditure independent of Revenue excepting Total expenditure. In the latter case higher growth in Total Expenditure in period t-1 leads to higher growth in Total Receipts. However, higher growth in Total Receipts in period t-1 leads to higher growth of Revenue Non-plan expenditure, Capital Non-plan expenditure, and Total Plan expenditure. But the coefficients of Plan expenditures are found statistically not significant.

In the following an attempt also has been made to examine the direction of causality between expenditure variables and Total Receipts. The results of the VAR Granger Causality Test are presented in Table-8.8 below.

Table-2.6 Results of VAR Granger Causality Test

	Dependent	LTR		Dependent	LRNPE		
Excluded	X^2	Df	P	Excluded	X^2	Df	P
LRNPE	2.6372	1	0.1044	LTR	5.2926	1	0.0214
				LCNPE			
LCNPE	0.0242	1	0.8762	LTR	25.5322	1	0.0000
				LTNPE			
LTNPE	0.1470	1	0.7014	LTR	6.5801	1	0.0103
				LTE			
LTE	8.7745	1	0.0031	LTR	1.6658	1	0.1968
				LRPE			
LRPE	2.3745	1	0.1233	LTR	0.0606	1	0.8054
				LCPE			
LCPE	2.2637	1	0.1234	LTR	1.2534	1	0.2629
				LTPE			
LTPE	2.5555	1	0.1099	LTR	0.0007	1	0.978

The following conclusions follow from the Results of Causality Test. The p values presented in the Table are used to draw conclusion drawn regarding direction of causality between variables. The p-value for the computed X^2 statistic when found exceeding 0.10 (p>0.10), leads to acceptance of the Null Hypothesis of absence of Granger causality in the VAR Model.

LRNPE does not Granger cause LTR	LTR Granger Cause LRNPE
LCNPE does not Granger cause LTR	LTR Granger Cause LCNPE
LTNPE does not Granger cause LTR	LTR Granger Cause LTNPE
LTE Granger cause LTR	LTR does not Granger Cause LTE
LRPE does not Granger cause LTR	LTR does not Granger Cause LRPE
LCPE does not Granger cause LTR	LTR does not Granger Cause LCPE
LTPE does not Granger cause LTR	LTR does not Granger Cause LTPE

The results so obtained are similar to the one obtained in case of VAR Model. Thus it may be inferred that there is uni-directional causality between Total expenditure and Total receipts. Similarly there is unidirectional causality running from Total receipts to all the expenditure variables excepting Total expenditure and all the Plan expenditure variables.

4. SUMMARY & CONCLUSION
In sum, the State finances of the state have undergone important changes over the last 38 years. Orissa's position in terms of literacy is moderately high compared to lower literacy states like Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh. Factory employment in the state is also found one of the lowest next only to Bihar, Madhya Pradesh and Uttar Pradesh. Orissa as in 2014-15 continues to have the lowest per capita income next only to Bihar, Jharkhand and Uttar Pradesh. Thus in terms of level of development Orissa continues to remain as one of the most backward states of the Indian Union.

The analysis of dependence of revenue parameters on NSDP through double log model including NSDP and %Non-primary income as independent variables and including a dummy for FRBM Act shows that all the equations having very high values of R^2 indicate that SDP and % Non-primary income are appropriate determinants for the variations in revenue parameters.

B_1 representing the income elasticity is found to be high during PRE-FRBM period in case of all revenue parameters excepting Revenue Receipts and Non-tax revenue. Similar result is obtained in case of expenditure variables. B_1 representing the income elasticity is found to be high during PRE-FRBM period only in case of Per-capita revenue expenditure and Per-capita non-plan revenue expenditure. However, the increment to the slope coefficient during Post FRBM is found positive and statistically significant in case of Aggregate expenditure, which is contributed due to positive and significant increment in case of Per-capita capital expenditure and Per-capita Plan capital expenditure indicating that FRBM period has made Capital expenditure more responsive to changes in income.

The results of the VAR Model to examine the causative relationship between SDP and different Expenditure variables shows that higher growth in Total Expenditure in period t-1 leads to higher growth of SDP in period t. This is revealed by statistical significance of computed `t' for estimated coefficient of LSDP. The same result holds only in case of growth of Total Non-plan Expenditure However, none other estimated coefficients appear to be statistically significant in any of the equations. Similarly, higher growth in SDP in period t-1 leads to higher growth of all the Expenditure variables excepting Total Plan Expenditure, Non-

plan expenditure in General services and Total expenditure in General Services.

The results of the VAR Granger Causality Test are similar to the VAR Model excepting that Total Non-plan Expenditure is found independent of SDP and that there is also independence of SDP from Total Non-plan expenditure. Thus it may be inferred that there is a bidirectional causality Total expenditure and SDP and that there is unidirectional causality running from SDP to all the expenditure variables excepting Total plan expenditure, Total Non-plan expenditure, Non-plan expenditure on General services and Total expenditure on General services.

REFERENCES
1. Ahluwalia, Montek S. (2000), "Economic Performance of States in Post Reform Period", Economic and Political Weekly, XXXV 19, pp1637-1648.
2. Bagchi A. and Tapas K Sen. (1992), "Budgetary and Plan Financing in the States". in Bagchi and Bajaj (cd), State Finances in India, pp-83.
3. Chaudhari Saumitra (2000), "State Government Finances", Money and Finance-ICRAbulletin Vol-2, No-1 PP-34 to 51.
4. Government of Odisha, "Odisha Economy Survey 2011-12"
5. Government of Odisha, "Statistical Abstract of Odisha", Various issues.Odisha:Economic and Statistical Organisation.''
6. Govt of India, Indian Public Finance Statistics.
7. Kumar, Sharat (1994), "Reforming State Finances in India" Yojana 37 (24) pp 4-7.
8. Kishore, A. and Prasad A. (2007), "Indian Sub-national Finances: Recent Performance", IMF Working Paper, International Monetary Fund WP/07/205.
9. Kurian, N.J. (1999), "State Government Finances- A Survey of Recent Trends." Economic and Political Weekly, XXXIV 19: 1115-1125.
10. Parkash, Om. (1983), „The Finances of Punjab State."GNDU Press, Amritsar.
11. Pratap Singh, (2019),"Tax Revenue in India: Trends and Issues". ISBN 978-81-940398-4-6 © 2019, Copyright Reserved The Institute for Social and Economic Change, Bangalore.
12. Reserve Bank of India. (2014), "State Finances: A Study of Budgets of 2013-14".
13. Reserve Bank of India. (2004), "State Finances: A Study of Budgets of 2003-04".
14. Rao M.Govinda (2005), "Tax system reform in India: Achievements and challenges Ahead", Pares prepared for the International symposium on Ta Policy and Reform in Asian Countries, Hitotsubhasi University, Tokyo, Japan, July 1-2.
15. R. Saravanan, Dr. M. Meganathan (2014), "An Analysis of Revenue Receipts of India with Special Reference to Tax Revenue". International Journal Of Marketing, Financial Services & Management Research, ISSN 2277-3622 Vol.3 (12), DECEMBER (2014) , pp. 94-102 Online available at indianresearchjournals.com.
16. Rao, R Kavita (2004), "Impact of VAT on Central and State Finance", Economic and Political Weely Vol 39 no-26 june 26, pp. 2773-2777.
17. Reserve Bank of India 2006, Annual Report, Mumbai: Reserve Bank of India.
18. Rao, Govinda M. (2002), "State Finances in India: Issues and Challenges, "Economic and Political Weekly, XXXVII 31, pp 3261-3271.
19. Rao, M. Govinda (1992), "Proposals for States levels Budgetary Reform", Economic and Political Weekly, February.
20. Tushar Kanti Das (2014), "Government revenues of Orissa: an analysis", "International Journal of Indian Culture and Business Management", 8(1): 124 – 137, DOI:10.1504/IJICBM.2014.057956.