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Empirical Evaluation of Effects of Sectoral Government Expenditure on Economic Growth in Gujarat State of India.

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ABSTRACT

This is the research paper about Empirical Evaluation of Effects of Sectoral Government Expenditure on Economic Growth in Gujarat State of India during the Post Reforms period of 1991 to 2005. In this paper time series data is used for the Empirical Evaluation of Effects of Sectoral Government Expenditure on Economic Growth in Gujarat State. For this purpose Multi-Variate Regression Models are used. For Economic Growth we have used two indicators, namely State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI) in Gujarat State The results reveal that Sectoral Government Expenditure is an important determinant of Economic Growth in Gujarat State throughout our study period from 1991 to 2005.

KEYWORDS: Empirical Evaluation, Effects, Sectoral, Government Expenditure, Economic Growth.

INTRODUCTION

In the days of Globalization and Liberalization Empirical Evaluation of macroeconomic variables and their interdependence has become very relevant area and aspect of modern studies. Continuous debate is going on for a very long period of time on causal relationship among macro economic variables among economic thinkers and writers in developed and developing countries as well as world as whole. It is necessary to mention that for a very long period of time scientific studies were limited to very few macro variables. But now recently attempts are made to study the effect of State Government Public Expenditure on Economic Growth. Higher Economic growth increases State Gross Domestic Product and State Per Capita Income in states like Gujarat. Thus rise in State Government Expenditure increases State Gross Domestic Product and State Per Capita Income. There is a general tendency among the economic thinkers to worry and write only about National Problems and National level studies are undertaken and not about regional and state level problems. Thus it is true that macro economic problems of states are equally and due attention must be paid to solve these problems to remove regional disparities.

This study is about Empirical Evaluation of Effects of Sectoral Government Expenditure on Economic Growth in Gujarat State of India during the Post Reforms period of 1991 to 2005. Gujarat State has adopted development strategy since its emergence as a state in 1960 and Gujarat State Government is giving a high priority to industrialization. Gujarat is industrially advanced states like Maharashtra, Tamil Nadu and West Bengal.

This is the study of effect of Sectoral Government Expenditure on State Economic Growth. Here we have selected following sectors on which State Government of Gujarat has made Expenditure. General Economic Services, Industries and Minerals, Agriculture and Allied Activities Education, Sports, Arts And Culture, Infrastructure, Employment, Lablour Welfare, Health Family Welfare

This paper is organized into eight sections, including earlier introduction. Section two describes the objective of study, Section three is about hypothesis, and Section four presents methodology and model specification. Section five, is about sources of data, Section six, Reviews Literatures. The empirical findings are reported in Section seven, Section eight presents conclusion.

2. OBJECTIVE OF THE STUDY

The main objective of this paper is to Empirically Evaluate, effects of Sectoral Government Expenditure on Economic Growth in Gujarat State of India during the Post Reforms period of 1991 to 2005. We want to examine in this paper effects of Government Expenditure on various sectors and schemes on State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI) in Gujarat State.

4. HYPOTHESIS OF THE STUDY

The present paper aims at examining Empirical evaluation of effects of State Government Expenditure on State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI) in Gujarat State, during 1991 to 2005 for which we have the following hypothesis:

1. Increase in State Sectoral Government Expenditure has increased State Economic Growth in Gujarat State of India.
2. Increase in State Sectoral Government Expenditure has increased State Gross Domestic Product (SGDP) in Gujarat State of India.
3. Increase in State Sectoral Government Expenditure has increased State Per Capita Income (SPCI) in Gujarat State of India.

5. METHODOLOGY OF ANALYSIS

In this paper, empirical evaluation is undertaken with a view to establish time series relationship between Government Expenditure and Economic Growth in Gujarat State of India for the study period 1991 to 2005. This has been carried out with the help of year-wise secondary data.

For this purpose, the statistical regression models analysis have been adopted. This paper has been designed so as to examine the hypotheses as mentioned earlier in this study.

Here, statistical regression is employed as a tool for the empirical evaluation of relationship between the variables which we are predominantly concerned with. The increase in State Government Expenditure is independent variables in this model which is the year-wise total number of Sectoral Government Expenditure on various schemes (in Rs. Crores) over fifteen years in India. On the other hand, the dependent variables are the year-wise number of State Gross Domestic Product (SGDP) State Per Capita Income (SPCI) in Gujarat State of India.

In this study, we have estimated a Two Multi-variate Models and fitted double natural logarithmic (log) equations for Government Expenditure and State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI) below with the corresponding statistical values of students t-statistics, R2, R2, F-value, D-W Statistics and the regression coefficients.

6. SOURCES OF DATA

The sources of data are exclusively built on secondary survey. The required statistical information (secondary data) would be collected from various sources, and has been used for analysis purpose, and those are from the following sources:

1. Gujarat Government Budgets
2. Reserve Bank of India (RBI), Annual Reports.
3. Economic and Financial statistics Review (Reserve Bank of India)
4. Indian Economic Survey (Fiscal and Real Sector), the Ministry of Finance, "Government of India" New Delhi. And also data collected from other reliable sources.

7. REVIEW OF LITERATURE

A lot of studies have been carried out in national and international level which are of greater significance. Among a few significant studies on Government spending and State Per Capita Income, mention may be of following works:

Niti and Kashyap provides a statistical profile of pre-and post-green revolution agriculture in Gujarat. Changes in cropping pattern has been shifting in favour of non-traditional non-food crops. Gujarat needs investment in infrastructure and strategies for sustainable resource use to improve productivity in agriculture.
Dinesh found that Gujarat state has responded well to economic reforms and industry has grown, especially manufacturing industry. For long term growth, a greater emphasis on the infrastructure sector is needed. Small scale industry can be helped by promoting cluster. The article presents relevant statistical data.

Darshnini observed that while Gujarat has registered a significant improvement in key health statistics, the health situation in the state shows some paradoxes. A comprehensive analysis of the health status over the years, public health expenditure, the growth of health facilities in urban and rural areas and in the private and public sectors indicates that rather than technical inputs, it is the development model adopted that impinges on health status.

Ashah Singh and Sanjay Singh observed that the overall progress of the project has been found very good and the programme could further be improved on attending the suggestion give above. This year watershed area received only 50% of the average annual rainfall. Due to this drought condition survival percentage of all plantation was very low. It is also important to quote the, increasing additional area irrigated by open wells due to ground water recharging activities and construction earthen water harvesting structures in the region after the different programme activities. We strongly recommend that the organisation should believe in active and effective involvement of local community and leadership to take up maintenance and protection of plantation, other water harvesting structures and sharing the benefits of the projects to make the project environmentally sustainable.

Though this is not an exhaustive survey of the literature that has gone into this area, we feel that it does provide analytical framework for enabling us to undertake the present study.

8 RESULTS AND DISCUSSION

By fitting the double natural logarithmic (Log) relationship to the time series data in Two Multi-Variate Models. In Model:1, we have taken Sectoral Government Expenditures as Independent Variable and State Gross Domestic Product (SGDP) as Dependent Variable. In Model:II, we have taken State Sectoral Government Expenditure in Gujarat State as Independent Variable and State Per Capita Income in Gujarat State (SPCI) for the study years 1990-91 to 2004-05, we have obtained the following results.

Model:1 Independent Variables: Sectoral Government Expenditures Dependent Variables: State Gross Domestic Product (SGDP)

$LOG(SGDP)= \alpha + \beta_1 LOG(EDSACEXP) + \beta_2 LOG(INFRAEXP) + \beta_3 LOG(EMPLWEXP) + \beta_4 LOG(HFWEXP) + \beta_5 LOG(AGRAEXP) + \beta_6 LOG(INDMEXP) + \beta_7 LOG(GESSEXP) + \mu$

Dependent Variable: LOG(SGDP)			
Variable	Coefficient	t-Statistic	Prob.
C	5.040278	4.198327	0.0040
LOG(EDSACEXP)	0.261172	1.886563	0.0112
LOG(INFRAEXP)	0.703344	2.823041	0.0257
LOG(EMPLWEXP)	0.301752	4.800617	0.0497
LOG(HFWEXP)	-0.217364	3.523800	0.0166
LOG(AGRAEXP)	0.059070	4.195151	0.0308
LOG(INDMEXP)	-0.054992	-0.480211	0.0457
LOG(GESSEXP)	-0.077514	-0.349516	0.0370
R-squared	0.967464	Durbin-Watson stat 2.312772	
Adjusted R-squared 0.934928		F-statistic 29.73519	
	Prob(F-statistic) 0.000109		

LOG(SGDP) = 5.040278198 + 0.261*LOG(EDSACEXP) + 0.703* LOG(INFRAEXP) + 0.301*LOG(EMPLWEXP) - 0.217*LOG(HFWEXP) + 0.059*LOG(AGRAEXP) - 0.054*LOG(INDMEXP) - 0.077*LOG(GESSEXP)

Where,

GESSEXP= GENERAL ECONOMIC SERVICES EXPENDITURE
INDMEXP= INDUSTRIES AND MINERALS EXPENDITURE
AGRAEXP= AGRICULTURE AND ALLIED ACTIVITES EXPENDITURE
EDSACEXP= EDUCATION, SPORTS,, ARTS AND CULUTRAL EXPENDITURE

INFRAEXP= INFRASTURE EXPENDITURE
EMPLWEXP= EMPLOYMENT LABLOUR WELWARE EXPENDITURE
HFWEXP= HEALTH FAMILY WELAFARE EXPENDITURE
SGDP= STATE GROSS DOMESTIC PRODUCT

From regression coefficients it is clear that there are positive and significant relationship between Agriculture and Allied Activities Expenditure, Education, Sports, Arts and Cultural Expenditure, Infrastructure Expenditure, Employment Labor Welfare Expenditure and Economic Growth in Gujarat. The regression result of above model shows that General Economic Services Expenditure, Industries And Minerals Expenditure and Health Family Welfare Expenditure are significantly negatively related to the Economic Growth. The F- test for the model also indicates it is highly significant, F = 29.73 at sig F= .0001. This result also indicates that the t- test for the significance of individual independent variable indicates that at the significance level of 0.95(confidence level of 95%), all independent variables are statistically significant in the model. From the above regression result, it is found that coefficient of determination is about 0.96. This implies that about 96% of the total variation in Economic Growth is explained by General Economic Services Expenditure, Industries and Minerals Expenditure, Agriculture and Allied Activities Expenditure, Education, Sports, Arts and Cultural Expenditure, Infrastructure Expenditure, Employment Labor Welfare Expenditure and Health Family Welfare Expenditure. Only 4% unexplained variations can be traced to other factor not included in the model. The adjusted R2 = 0.93 also shows high level of explanatory power after adjusted for degree of freedom. D-W statistics (2.31) is very high it indicates absence of auto- correction among residuals.

Model:II Independent Variables: Sectoral Government Expenditures

Dependent Variables: State Per Capita Income (SPCI)

$LOG(PCI)= \alpha + \beta_1 LOG(EDSACEXP) + \beta_2 LOG(INFRAEXP) + \beta_3 LOG(EMPLWEXP) + \beta_4 LOG(HFWEXP) + \beta_5 LOG(AGRAEXP) + \beta_6 LOG(INDMEXP) + \beta_7 LOG(GESSEXP) + \mu$

Dependent Variable: LOG(PCI)			
Variable	Coefficient	t-Statistic	Prob.
C	5.023307	0.892778	0.4016
LOG(EDSACEXP)	0.575201	3.886535	0.0448
LOG(INFRAEXP)	1.104804	2.946165	0.0256
LOG(EMPLWEXP)	2.273434	4.287031	0.0390
LOG(HFWEXP)	0.691212	5.355403	0.0328
LOG(AGRAEXP)	0.167237	2.117887	0.0295
LOG(INDMEXP)	0.157033	2.292587	0.0383
LOG(GESSEXP)	1.047358	3.007665	0.0472
R-squared	0.972937	F-statistic 30.256660	
Adjusted R-squared 0.928574		Prob(F-statistic) 0.0015251	
	Durbin-Watson statistic	2.956602	

LOG(PCI) = 5.023 + 0.57*LOG(EDSACEXP) + 1.104*LOG(INFRAEXP) +2.273*LOG(EMPLWEXP) + 0.691*LOG (HFWEXP)+0.167*LOG(AGRAEXP) + 0.157*LOG(INDMEXP) + 1.047*LOG(GESSEXP)

Where,

GESSEXP= GENERAL ECONOMIC SERVICES EXPENDITURE
INDMEXP= INDUSTRIES AND MINERALS EXPENDITURE
AGRAEXP= AGRICULTURE AND ALLIED ACTIVITES EXPENDITURE
EDSACEXP= EDUCATION, SPORTS,, ARTS AND CULUTRAL EX-

PENDITURE
INFRAEXP= INFRASTURE EXPENDITURE
EMPLWEXP= EMPLOYMENT LABLOUR WELWARE EXPENDITURE
HFWEXP= HEALTH FAMILY WELAFARE EXPENDITURE
PCI= STATE PERCAPITA INCOME

From regression coefficients it is clear that there are positive and significant relationship between Agriculture and Allied Activities Expenditure, Education, Sports, Arts and Cultural Expenditure, Infrastructure Expenditure, Employment Labor Welfare Expenditure, General Economic Services Expenditure, Industries and Minerals Expenditure, Health Family Welfare Expenditure and State Per Capita Income in Gujarat. The F- test for the model also indicates it is highly significant, F = 30.25 at sig F= .0015. This result also indicates that the t- test for the significance of individual independent variable indicates that at the significance level of 0.95(confidence level of 95%), all independent variables are statistically significant in the model. From the above regression result, it is found that coefficient of determination is about 0.97. This implies that about 97% of the total variation in State Per capita Income is explained by General Economic Services Expenditure, Industries and Minerals Expenditure, Agriculture and Allied Activities Expenditure, Education, Sports, Arts and Cultural Expenditure, Infrastructure Expenditure, Employment Labour Welfare Expenditure and Health Family Welfare Expenditure. Only 3% unexplained variations can be traced to other factor not included in the model. The adjusted R2 = 0.92 also shows high level of explanatory power after adjusted for degree of freedom. D-W statistics (2.95) is very high it indicates absence of auto- correction among residuals.

9. CONCLUDING REMARKS

In this study, our Two Multi-variate Models depicts that there is Positive and Significant Relationship between Independent variable and Dependent variable. It means that State Government Expenditure in Gujarat State is positively and strongly related to State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI). Increase in State Government Expenditure increases State Gross Domestic Product (SGDP) and State Per Capita Income (SPCI) in Gujarat State. Thus there is a causal relationship between State Government Expenditure and State Economic Growth in Gujarat State of India. This is how our Empirical Evaluation supports our Hypothesis stated in this paper.

REFERENCES

1. Niti and Kayshap (2000): " Agriculture in Gujarat; Problems and Prospects", The Economic and Political Weekly, August 26, September 2, 2000 Vol. 35(35 and 36), pp. 3137 – 3146. 2. Dinesh N.A, (2000), "Recent changes in Gujarat Industry Issues and evidence" economic and political weekly pp 3183 – 3192 August 26-September. 3. Darshini, M., (2000), "Health for all in Gujarat is it achievable" Economic and Political Weekly, pp.3193 – 3204, Gujarat, India, August 26 – September – 2. 4. Ashah Singh and Sanjay Singh (2000), "concurrent evaluation report of NWDPRA Project executed by GSLDC in Bhavnagar District" Natural Watershed Development Project, Balram Bhavan Sector – 10 / A, Gandhinagar and Vinoj Abraham. 5. Basant, Rakesh (2000): "Economic Diversifications in Rural Areas: A Review of processes with Special Reference to Gujarat", working paper no. 0; Gujarat Institute of Development Research-Gota, Ahmedabad 380060. 6. Mahesh P. Bhatt and Ramesh M. Shah (2000) "Gujarat State Finance Commission", Implications of Recommendations", JSTDR Economic and political weekly, June 10.