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Public Debt and Economic Development Reference to State of Andhra Pradesh

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ORIGINAL ARTICLE

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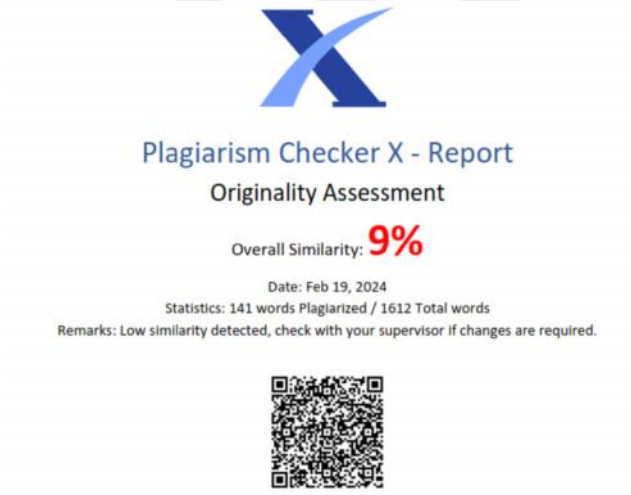


ABSTRACT

The world countries are welfare countries so that they are implementing deficit budgets. There is no other way for developing countries to get revenue resources except debt. The capital expenditure is falling due to payments interest and the need to implement welfare schemes. Debts are not confined to negative. They drive the economy to forward in the growth path when the debt utilized for production purpose, so that debt generates income.

KEY WORDS

Debt, GSDP, Rate of Interest, Resources, Ratio.

INTRODUCTION

The ratio $\frac{\Delta y}{y}$ signifies the rate of economic development assuming other things keep in constant. *Y* refers national income or output in a period of time'*t*' and a positive change is indicated by $\triangle$. Under time refers 't_i', $\triangle$ y is the sum of marginal increments in national output as dynamic economy, symbolically

$$\Delta Y = \sum_{i=1}^{n} \Delta y_i = (i = 1,2,3, \dots \dots n) \dots \dots \dots \dots .1$$

or

$$\sum_{i=1}^{n} f(x_i)(x_{i+1} - x_i) \dots \dots \dots .2$$

Therefore,

$$\int_a^b f(x)dx \dots \dots \dots \dots \dots \dots .3$$

The above expression implies the summation of stream of output through various productive activities within the period t. Here't' refers

$$t = \sum_{i=1}^{n} t_{i=(i=1,2,3,.....n)}$$

Clark's accelerator theory constructs a relationship between desired stock of capital and output. Mathematically the accelerator theory as follows:

$$\frac{k_t}{y_t} = \alpha$$

$$k_t = \alpha y_t,\ \alpha > 0 \text{.....4}$$

Here, α represents capital output ratio which is a constant in period of time't'. The above Type equation here.equation implies that the level of output depends on volume of capital at given capital output ratio. Therefore

$$k_t = y_t, \ldots\ldots\ldots.5$$

If the level of actual capital equals to the level of desired capital the level of output would be zero.

$$k_t = k_{t-1} = \Delta y = 0 \text{ .....6}$$

The equation 7 indicates the state of absence of dynamism in output. Based on the equations 6 and 7, in order to more output desired capital should be more than actual capital.

$$k_t > k_{t-1} \text{.....7}$$

Therefore,

$$\alpha y_t > \alpha y_{t-1} = \Delta y > 0 \text{ .....8}$$

The domain of economic development is national output. The national income in real terms in Keynisian expression as under

$$Y = C+I \text{ .....9}$$

Therefore economic development is

$$\triangle Y = \triangle C + \triangle I \text{ .....10}$$

Investment is a change in existing capital stock. Hence, the above equation can be rearranged as

$$\triangle Y = \triangle C + \triangle K \text{ .....11}$$

Despite, the Keynesian model refers static economy, if we take multiplier in to consideration, economic growth needs investment.

Joan Robinson asserts more investment is required to provide increment in the rate of output (1912). R.F. Harrod opined that in order to accomplish additional growth in output, additional investment should be needed (1957).

Economic development is a transition from the state of backwardness to more developed state. In order to achieve the transition from the state of backwardness to more developed state, where we can except steady secular growth, it is necessary, though not always sufficient condition, that at the same point or during same period, the economy should receive a stimulus to growth that is greater than a certain minimums size (Harvey Leibentsein)

The theory growth is very largely a theory of investment (Rosentein Rodan, 1957) he quoted that "there is minimum level of resources that must be devoted to ….a development programme if it is easy to have any chance of chance of success. Launching a country into self sustaining growth is a little like getting an airplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne"

Nicholas Kaldar ascertains that the capital output ratio tend to fall with the revolutionary involvement of superior tech knowledge of capital in to the production process which raises productive capacity of the capital. Hence, more investment is required for adoption of superior knowledge or innovation in the production (1957).

The discussion emphasizes the inevitability of investment for achieving economic growth or economic development in the case of developing countries. We know that

$$I = f(S,r) \ldots\ldots\ldots 12$$
$$S = f(Y, r) \ldots\ldots 13$$

Keep rate of interest (r) in constant then

$$I = f(y) \ldots\ldots 14$$

Adopt keynesian model to derivate a rate of change in investment under economic growth.

$$\triangle Y = \triangle C + \triangle I \ldots\ldots\ldots 10$$

$\triangle C$ is an induced consumption hence, the above equation has rearranged below:

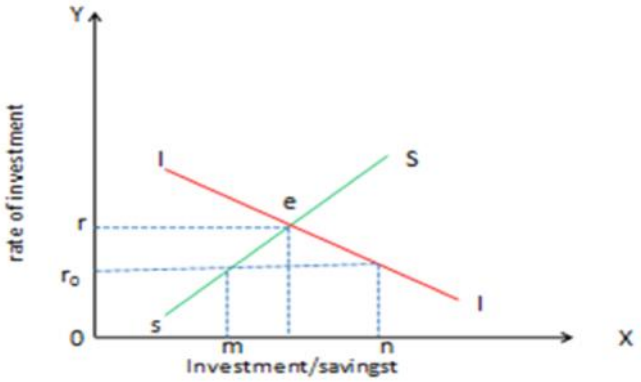
$$\triangle Y = \triangle y.b + \triangle I$$
$$(\triangle y - \triangle y.b) = \triangle I$$
$$\triangle (1 - b) = \triangle I$$
$$\frac{\Delta I}{\Delta y} = (1 - b) \ldots\ldots\ldots 15$$

Or

$$\frac{\Delta I}{\Delta y} = MPS \ldots \ldots\ldots 16$$

The equation (16) implies the change in investment due to change in income is equal to the marginal propensity to saving. The equation indicates static equilibrium. The economic development is a path to reach equilibrium. Therefore, the disequilibrium between savings and investment is a common phenomenon in the case of developing countries.

Figure 1:



Below equilibrium rate of interest the amount of savings is less than the amount of investment. For instance, at r_o rate of interest the level of savings is 0m and the amount of invest is 0n in the figure-1. The amount of available resources (savings) hence, are shorter by mn to meet the level of investment at a particular time, say't'. In spite of increasing savings through the rate of interest mechanism, the interest mechanism can workout up to a certain level as its own limits. After certain point no investor comes forward to invest as the investor has to pay much amount to the lender in form of interest. So that higher rate of interest will engulf the profits, sometimes it drives the investor in to losses. The rate of interest does not fall continuously; it continues the same rate of interest at a certain lower point what Keynes called it as liquidity trap.

The above argument which is absence of public debt ignites the significance of public debt. Actually public debt policy is driven to adopt due to the repercussion of deficit budget.

Review of Literature

Manmohan s et, al. (2010) constructed a relationship between initial debt and subsequent growth controlling of other variables. They concluded an average of a 10 percentage point increase in the initial debt to GDP ratio is associated with slowdown in annual real per capita GDP growth of around 0.2 percentage points per year with the impact being somewhat smaller than in advanced countries. Then there is some evidence of nonlinear with higher level of initial debt having a proportionately larger negative effect on subsequent growth analysis of the component of growth.

Jack Salmon (2019) suggested that to avoid these negative growth effects, advanced countries should aim to keep their debt ratio at sustainable level, preferably below 80 per cent of GDP, while developing countries should aim to keep their debt ratio below 60 per cent of GDP.

Methodology

The analysis of the topic depends on secondary. The intention in writing the paper is to study the impact of debt on economic development by constructing simple regression. The payment of interest and repayment of debt curbs the mainly capital expenditure as revenue expenditure may not be affected as all welfare states or countries prefer welfare schemes which cater political benefit. Hence, secondary data analysis is inevitable.

Objective of the Study

To study the impact of public debt on economic growth (GSDP) of Andhra Pradesh.

Hypothesis

The of public debt has not impacted the economic growth (GSDP) of Andhra Pradesh.

Data Analysis

Table No 1: Year wise GSDP and Debt of AP

(Rupees in crores)

Year	GSDP	Debt	Share of debt to GSDP
2014-15	524972	12381.97	2.36
2015-16	604229	15237.30	2.52
2016-17	684416	25146.13	3.67
2017-18	786135	18982.48	2.42
2018-19	873721	24705.31	2.84
2019-20	925839	33062.06	3.40

*(**Source:** Statistics Times, https://statisticstimes.com/ accessed : 8-11-2023)*

Table No 2: Year wise growth in GSDP and Debt of AP

(Rupees in crores)

Year	Increment		Percentage of Increment	
	GSDP	Debt	GSDP	Debt
2015-16	79257	2855.33	15.10	23.06
2016-17	80187	9908.83	13.27	65.03
2017-18	101719	-6163.65	14.86	-24.51
2018-19	87586	5722.83	11.14	30.15
2019-20	52118	8356.75	09.97	33.83

*(**Source:** Statistics Times, https://statisticstimes.com/ accessed : 8-11-2023)*

In order to get comprehensive picture of the impact of debt on we have to study both tables 1 and 2. The GSDP accrues along with debt in the state of Andhra Pradesh. The GSDP has increased by 79257 and reached to 604229 in 2015-20. Similarly the burden has added 2855.33 to the existing burden. Their rates of increments are 15.1 and 23.06 respectively. Here a note worthy point is the figures belong to debt seems to be lesser than GSDP but, the growth rates debts are comparatively more than GSDP. During 2017-18 the GSDP increased by 101719 at the same period the debt declined to 18982.48. it accounts for minus 24.51 per cent. The share debt to the GSDP ranges from 2.36 to 3.67 percentile.

Table No. 3: Share of total debt burden to GSDP

Year	GSDP	Total Debt	Interest Paid	Share of Debt to GSDP
2020-21	956788	350557	20018	36.64
2021-22	1133837	378087	22165	33.35
2022-23	1317728	426234	25288	32.35

*(**Source:** Socio economic survey, GoAP, 2022-23)*

The table -3 reveals that the total debt burden on GSDP has been increasing. The share of debt burden was 36.64 per cent to the GSDP but in the subsequent year it fell to 33.35. the table ascertains that the debt burden has fallen from 33.35 to 32.35 percentile in 2022-23. No note worthy here is though the debt burden has been declining since 2020-21 (table -3) it is more than 30 percentile.

Hypothesis Test

Table No. 4

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90010828961.328	1	90010828961.328	11.244	.028[b]
	Residual	32019516416.005	4	8004879104.001		
	Total	122030345377.333	5			
a. Dependent Variable: VAR00001						
b. Predictors: (Constant), VAR00002						

The dependent variable is the economic growth (GSDP) and independent variable is debt. The calculated value is less than p values at 5 percent significance. The hypothesis hence, rejected therefore the debt has impacted the is the economic growth (GSDP) of the state of Andhra Pradesh.

Table No. 5

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	350210.844	119916.989		2.920	.043
	VAR00002	17.743	5.291	.859	3.353	.028
a. Dependent Variable: VAR00001						

The coefficient (B) indicates slop of the regression curve. It is positive. (17.743). the variable is significant a t- value.

Table No. 6

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.859[a]	.738	.672	89469.990
a. Predictors: (Constant), VAR00002				

The summary table ascertains that the R^2 value is 0.738. it means the independent variable explains dependent variable at 73.8 per cent. Hence the alternative hypothesis has accepted.

CONCLUSION

It is concluded that the public debt has two dimensions one is positive, it drives the economic economy in to progressive path and another is negative. It drives the economic economy in to regressive path as the debt mostly curbs the capital expenditure rather than revenue expenditure because implementation of welfare schemes always give political gains. Of course welfare schemes are necessary but not at the cost of future of the economy. the debt burden should not become beyond the threshold.

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