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INEQUALITY AND GROWTH: CONSUMPTION AND INVESTMENT EFFECT

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Abstract:-The real world experiences show that there are cases where development is happen due to social and economic equality among the individuals of an economy. So that with income equality an economy can grow at higher pace than with income inequality. For example, the case studies of eight East-Asian tigers show that the equality (socially & economically) benefits the country in the development process. We want to demonstrate that inequality in income can hamper the growth of an economy by affecting the potential level of consumption and investment. To analyze the argument, let we have a closed economy macro model with inequality. We have shown that inequality leads affects economic growth adversely.

Keywords: Social inequality, economic inequality, Keynesian model, marginal propensity to consume, multiplier, measure of income inequality.

INTRODUCTION :-

The early 1970s witnessed a remarkable change in public and private perceptions about the ultimate nature of economic activity. In the rich and poor countries disillusionment grew about the relentless pursuit of growth as the principal economic objective of society. In the developed countries, the major emphasis seemed to shift away from growth towards more concern for the “quality of life”. On the other hand, in the poor countries the main concern focused on question of growth versus income distribution. Many third world countries find that growth had brought little in the way of significant benefits to their poor. This creates the eagerness for the systematic study of growth and inequality. That search of study the relationship between income inequality and growth is still in continuation from that point of time.

There are various kinds of inequality but we can divide these inequalities in two broad frameworks as social and economic inequality. We mean by social inequality as the lack of social equality, where people in an economy do not have equal social status. Social inequality include inequality in voting rights, freedom of speech, property rights and access to education and health care and other social goods. On the other hand, Economic inequality refers to disparities in the distribution of economic assets and income.

Social inequality is different from economic inequality but the two inequalities are linked. While economic inequality is caused by the unequal distribution of wealth, social inequality exists because the lack of wealth in certain areas prohibits these people from obtaining the same housing, health care, etc. as the wealthy in societies where access to these social goods depends on wealth.

REVIEW OF LITERATURE

The studies show that the relationship between overall growth and changes in the incomes of the bottom quintile of the population during 10-year periods had little systematic relationship between overall growth and changes in inequality. Periods of growth are associated with an increase in inequality almost as often (43 cases) as with a decrease in inequality (45 cases). In contrast, the studies also show a strong systematic relationship between overall growth and growth in the income of the poorest quintile; the latter increased in more than 85 percent of 91 cases. This would suggest that even when inequality has worsened; its negative effect on the poor has been more than outweighed by the positive effect of growth.

Do more egalitarian countries grow faster? Recent empirical work indicates that there may be a negative relationship between initial inequality and future growth. This would imply that unequal economies will experience lower rates of growth

and, in general, lower rates of poverty reduction. (Klaus Deininger and Lyn Squire, 1996)

Alesina and Rodrik (1994) find that the Gini coefficient has a consistently negative effect on standard neoclassical growth regressions. The effect is particularly strong when the Gini coefficient in the distribution of land – a better proxy of inequality in the distribution of wealth - is used. Persson, and Tabellini (1994) shows that there is significantly negative relationship between income inequality and growth in democratic countries. On the contrary, Barro (2000) concludes that there is a negative relationship for poor countries, but a positive relationship for rich countries. With the finding that inequality in China and India comes along with their economic growth, Quah (2001) raises that inequality can increase or decrease economic growth.

HISTORICAL EXPERIENCE:

The historical data reveal that, income inequality is much greater in Latin America and sub-Saharan Africa, which have Gini coefficients in the upper 40s, than in East and South Asia, which have Gini coefficients in the middle-to-upper 30s. The OECD countries, in general, have relatively egalitarian distributions of income, with Gini coefficients around 30, while the Eastern European countries have historically had very low Gini coefficients.

Similarly, data also reveals that land distribution and income distribution are not the same. India, Indonesia, and Korea are all characterized by Gini coefficients for income in the 30s, but the coefficients for land distribution are 63, 55, and 35, respectively. Similarly, Thailand, Tunisia, and Peru all have Gini coefficients for income in the 40s, but the coefficients for land distribution are 45, 64, and 93, respectively. This suggests that tests of the negative relationship between initial inequality and subsequent growth may yield different results depending on whether initial inequality is measured in terms of income or land.

The Macro Economic Model Methodology

As we know that in Keynesian economy model equilibrium will take place when:

$$Y=AD \qquad (1)$$

Where, $$AD=C+I+G \qquad (2)$$

And $$C=\overline{C}+cY \qquad (3)$$

Where, $\overline{C}$ is the value of consumption when income is zero.
c is the marginal propensity to consume.

To inbuilt inequality in our model, we assume that there are only two income levels in the economy, i.e. y_1 & y_2, where y_1 & y_2 stands for income from labor and capital respectively. With income from the capital is greater than the income from the labor (y_2 y_1) in the economy, so that we have income inequality in the model. Let we divide the whole population of the economy in respect of two income classes:

$$L=L_1+L_2 \qquad (4)$$

Where, L= Total population of the economy.
L_1= Population of labor income earners in the economy.
L_2 = Population of capital income earners of the economy.

Thus, total income is: $$Y=L_1y_1+L_2y_2 \qquad (5)$$

Let, the aggregate labor and capital income in this economy be :

$$Y_1=L_1y_1$$
and $$Y_2=L_2y_2.$$

So, $$Y=Y_1+Y_2. \qquad (6)$$

From the literature we know that, the marginal propensity to consume out of low income will be greater that the marginal propensity out of higher income. So the marginal propensity to consume out of labor income will be greater than the marginal propensity to consume out of capital income, therefore, $c_1>c_2$. Note, we are also assuming here that a person can earn income either by labor or by capital; he can not earn income from both sources. Thus, the investment and government

expenditure are given exogenously. So,

$$C=\bar{C}+(c_1Y_1+c_2Y_2) \qquad (7)$$

Where, c_1= it is the average of marginal propensity to consume out of labor income or of L_1 people, and
c_2= it is the average of marginal propensity to consume out of capital income or of L_2 people.

Let, $a=y_2/y_1$ (8)

Where, a is the measure of income inequality. A larger value of a implies larger income inequality. And a=1 implies income equality in the economy.

$$L_2/L_1.a=L_2y_2/y_1L_1$$
Let, $ß=L_2/L_1$
so, $aß=Y_2/Y_1$
Or, $Y_2=aßY_1$ (9)

By using equation (9) & (8) in equation (6), we have

$$Y=Y_1+Y_2$$
$$Y=Y_1+aßY_1$$
$$Y_1=Y/(1+aß) \qquad (10)$$

Here we have assumed that it is a demand driven economy, that is, there is no supply-side bottlenecks in this economy.

In equilibrium:

$$Y=C+I+G$$
$$Y=\bar{C}+(c_1Y_1+c_2Y_2)+I+G$$
$$=\bar{C}+(c_1Y_1+c_2aßY_1)+I+G$$
$$=\bar{C}+(c_1+c_2aß)Y_1+I+G$$
$$=\bar{C}+(c1+c2aß)Y/(1+aß)+I+G$$
$$Y[(1+aß)-(c_1+c_2aß)]=(\bar{C}+I+G)(1+aß)$$
$$Y=(\bar{C}+I+)(1+aß)/[(1+aß)-(c_1+c_2aß)]$$
$$K=(1+aß)/[(1+aß)-(c_1+c_2aß)] \qquad (11)$$

Where, K= multiplier value of this economy.

Let, we have assumed ß= L_2/L_1 = 1. (it do not affect our results)

So, $K^*=(1+a)/[(1+a)-(c_1+c_2a)]$ (12)

If there is equality, i.e., a=1, then $c_1=c_2$. So $(c_1+c_2)/2=c$

Or, $2c=(c_1+c_2)$.

After putting these values in equation (12), we have:

$$K^*=(1+1)/(1+1)-(c_1+c_2)$$
$$=2/(2-2c)$$
$$=1/(1-c)$$

This result says that with income equality the value of multiplier will be standard or highest and directly depends of c. A higher value of c implies a higher value of multiplier. Note also that, we have also assuming that $2c>c_1+c_2$ in case of inequality.

We also find that as $\alpha \to \infty$, then $K \to 0$ this says that as inequality increases the value of multiplier decreases, i.e. the larger values of α give us the smaller value of multiplier. Therefore, this model is consistent in showing the result that as inequality increases the growth of economy decreases through the consumption effect which reduces the aggregate demand and that lead to decrease the growth of an economy.

Now we want to show that how inequality affect the growth of an economy by affecting the potential level of investment in the economy. For this, we use the above mentioned formulation, with the assumption that investment depends on endogenous factors of the economy, i.e., on income and rate of interest.

Let, $I = \bar{I} + \gamma_1 Y_1 + \gamma_2 Y_2 - h r$ (13)

Where, r= rate of interest.

γ_1 & κ_2 =responsiveness of investment to Y_1 & Y_2 level of income respectively.

Y_1 & Y_2 = these are two income levels in this economy.

? = it is the coefficient which measures the responsiveness of investment to the rate of interest.

We assume that the γ_1 & κ_2 are equal to the marginal propensity to saving by the two income groups respectively, i.e. savings are equal to investments in the economy. We are also assuming that the propensity to invest for capitalist is higher than labor, i.e., $\gamma_2 > \kappa_1$ By using equation (13) in above formulation, we have

$$Y = \bar{C} + (c_1 Y_1 + c_2 Y_2) + \bar{I} + \gamma_1 Y_1 + \gamma_2 Y_2 - h r + G$$
$$= \bar{C} + (c_1 Y_1 + c_2 \alpha \beta Y_1) + \bar{I} + \gamma_1 Y_1 + \gamma_2 \alpha \beta Y_1 - h r + G$$
$$= \bar{C} + (c_1 + c_2 \alpha \beta Y_1) + \bar{I} + (\gamma_1 + \kappa_2 \alpha \beta Y_1) - h r + G$$
$$= \bar{C} + (c_1 + c_2 \alpha \beta Y_1) / (1 + \alpha \beta) + \bar{I} + (\gamma_1 + \kappa_2 \alpha \beta) Y_1 / (1 + \alpha \beta) - h r + G \quad ?$$

$$Y [(1 + \alpha \beta - (c_1 + c_2 \alpha \beta + \gamma_1 + \kappa_2 \alpha \beta)] = \bar{C} + \bar{I} + G - ? r) (1 + \alpha \beta)$$

$$Y = [(\bar{C} + \bar{I} + G - h r) (1 + \alpha \beta)] [(1 + \alpha \beta - (c_1 + c_2 \alpha \beta + \gamma_1 + \kappa_2 \alpha \beta)]$$

$$K^* = (1 + \alpha \beta) / (1 + \alpha \beta - (c_1 + c_2 \alpha \beta + \gamma_1 + \kappa_2 \alpha \beta)] \quad (14)$$

Let, assume again that $\beta = 1$ so, we have

$$K = (1 + \alpha) [1 / (1 - (c_1 + c_2 \alpha) - (\gamma_1 + \kappa_2 \alpha)]$$

If $\alpha = 1$ i.e. if there is equality, then $\gamma_1 = \kappa_2$ and $(\gamma_1 + \kappa_2) = k$, we have here we have assumed that $2k > (\gamma_1 + \kappa_2)$ in case of inequality and by using the above mentioned assumptions, we have

$$K = 2 / (2 - 2c - 2k)$$
$$K = 1 / (1 - c - k) \quad (15)$$

Here again we find that with equality the value of multiplier will be higher, so there is full effect of consumption and investment on growth. Thus this model interprets that inequality is harmful for an economy.

We again find that as $\alpha \to \infty$, then $K \to 0$ this says that as inequality increases the value of multiplier decreases. Therefore, inequality will be harmful for an economy and can lower the growth rate of an economy by affecting the potential level of consumption and investment in an economy.

CONCLUSION

We examine the relationship between income inequality and growth with the help of a closed economy model. We find that the high income inequality leads to lower the growth rate of an economy by lowering the multiplier value. In the first part of the model, we show how the inequalities in income lead to lower the potential level of demand for consumption and therefore the overall demand in the economy. In the second part we show that how income inequality affect the potential level

of demand for consumption and investment. The results of the model show that income inequality lowers the potential level of growth by lowering the demand in the economy.

RECOMMENDATION

Thus the government has to taken up steps to reduce the social and income inequality in the economy by choosing measures like progressive taxation, redistribution of income in poor people, making health and education subsidized for poor people, to provide employment to each and every one individual in the economy, etc. Therefore, growth can be increased to its potential level by reducing the various kinds of inequalities in the economy.

This model and results can also be extended by including money market (i.e., to IS-LM framework), where much deeper result can be generated for the growth pattern of economy with income inequality.

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