# OPTIMUM THEORY OF POPULATION

By

Dr. Mrinalini,
Asst. Professor (Guest Faculty),
Dept of Economics, Magadh Mahila College,
Patna University, Patna
Mob: 7366994103,
Mail id: mmayank531@gmail.com

The optimum theory of population was propounded by Edwin Cannan in his book "Wealth" published in 1924 and popularised by Robbins, Dalton and Carr-Saunders of London School of Economics. Unlike the Malthusian theory, the optimum theory does not establish relationship between population growth and food supply. Rather, it is concerned with the relation between the size of population and production of wealth. The Malthusian theory is a general theory which studies the population problem of a country in keeping with its economic conditions. Thus the optimum theory is more realistic than the Malthusian theory of population.

The optimum population is the ideal population which combined with other available resources or means of production of the country will yield the maximum returns or income per head. Given these assumptions, the optimum population is that ideal size of population which provides the maximum income per head. Any rise or diminution in the size of the population above or below the optimum level will diminish income per head. Given the stock of natural resources, the technique of production and the stock of capital in a country, there is a definite size of population

corresponding to the highest per capita income. Other things beings equal, any deviation from this optimum-sized population will lead to a reduction in the per capita income. If the increase in per capita income, the country is under-populated and it can afford to increase its population till it reaches the optimum level. On the contrary, if the increase in population leads to diminution in per capita income, the country is over-populated and needs a decline in population till the percapita income is maximised. This is illustrated in Fig.1
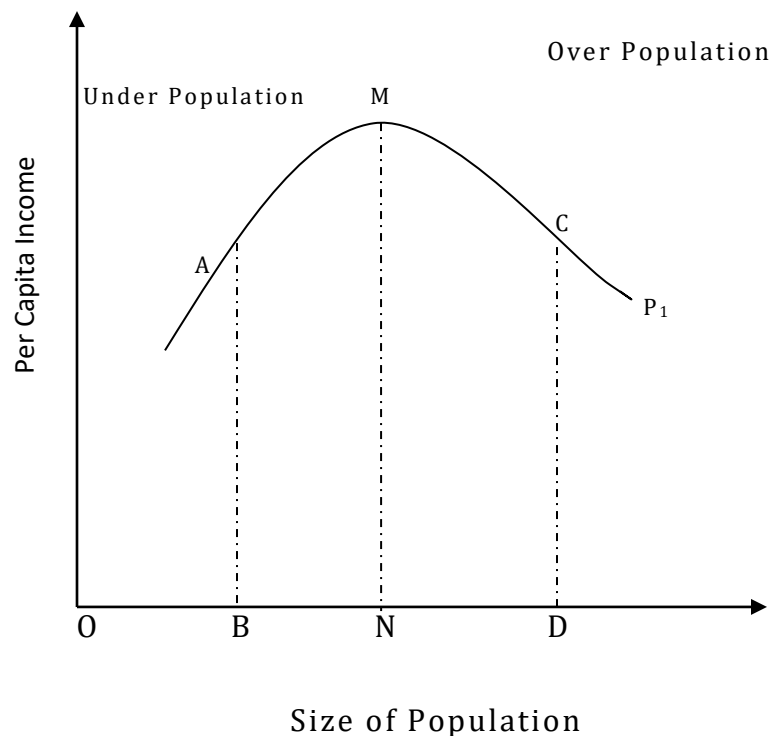
In the figure population is measured along the horizontal axis and per capita income on the vertical axis. In the beginning there is under-population and per capita income increases with population growth, the per capita income of OB

population is BA; which is less than the maximum per capita income level NM. The ON size of population represents the optimum level where per capita income NM is the maximum. If there is a continuous increase in population from ON to OD then the law of diminishing returns applies to production. As a result, the per capita production is lowered and the per capita income also declines to DC due to increase in population. This ND represents over-population. Dalton has deduced over-population and under population which result in the deviation from the optimum level of population in the form of formula. The deviation from the optimum, he calls maladjustment. Maladjustment is a function of two variables, the optimum level of population O and the actual level of population A. Then the maladjustment is

$$M = \frac{A - O}{O}$$

When M is positive, the country is over-populated, and if it is negative, the country is under-populated. When M is zero, the country possesses optimum population. Since it is not possible to measure O, this formula is only of academic interests.

Its superiority over the Malthusian theory : The optimum theory of population is superior to the Mathusian theory on the following grounds :

(1) The malthusian law is a general study of the population problem because it is applicable to all countries irrespective of their economic conditions. The optimum theory is superior to the Malthusian theory because it studies the population problem in relation to the economic conditions of a particular country.

(2) Malthus had a narrow vision. He related the growth of population to food supply. Cannan, on the other hand, had a much wider outlook. He related the problem of population to the total production of the country, both industrial and agricultural.

Despite the superiority of the Optimum theory over the Malthusian theory of population, it has serious weaknesses.

1. No Evidence of Optimum level : The first weakness of the optimum theory is that it is difficult to say whether there is anything like an optimum population. There is no evidence about the optimum population level in any country.

2. Optimum Level Vague : Optimum population implies a qualitative as well as a quantitative ideal population for the country. The qualitative level implies not only physique knowledge and intelligence, but also the best age composition of population. These variables are subject to change and are related to an environment. Thus the optimum level of population is vague.

3. Correct Measurement of per capita income not possible : Another difficulty pertains to the measurement of per capita income in the country. It is not an easy task to measure changes in per capita income. The data on per capita income are often inaccurate, misleading and unreliable which make the concept of optimum as one of doubtful validity.

Conclusion : It may be concluded on the basis of the above points that this theory is of no practical use. As pointed out by Prof. Hicks, it is "a notion of extremely little practical interest". Prof. Beveridge regards "it as a speculative construction of little

importance for actual situation and not entitled to a place in the corpus of theoretical economics.

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