NOTES

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Module Name: Optimum Theory of Population – its Superiority Over Malthusian Theory and Criticisms

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NOTES

Optimum Theory of Population

The Optimum Theory of Population appeared as a reaction to the Malthusian theory.

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**.

Statement of the Theory

The founders of the theory state it as "Given the natural resources, stock of capital and the state of technical knowledge, **there will be a definite size of population with the per capita income**. The population which has the highest per capita income is known as **optimum population**".

Optimum Population

The optimum population is the *ideal population* which combined with the other available resources or means of production of the country **will yield the maximum returns or income per head.**

The concept of optimum population has been defined differently by Robbins, Carr-Saunders and Dalton.

Robbins defines it as "the population which just makes the maximum returns possible is the optimum population or the best possible population."

Carr-Saunders defines it as "that population which produces maximum economic welfare."

Dalton defines it as "Optimum population is that which gives the maximum income per head."

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 being equal, **any deviation** from this optimum-sized population will lead to **a reduction in the per capita income**.

If the **increase in population** is followed by 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 per capita income is maximised.

But the optimum level is **not a fixed point**. It changes with a change in any of the factors assumed to be given.

For instance, if there are **improvements** in the methods and techniques of production, the output per head will rise and the **optimum point will shift upward**.

What the optimum point for the country is today, may not be tomorrow if the stock of natural resources increases and the optimum point will be higher than before.

Thus the optimum is not a fixed but a movable point.

Assumptions

1. The proportion of working population to total population remains constant as the population of the country increases.
2. As the population of a country increases, the natural resources, the capital stock and state of technology remain unchanged.

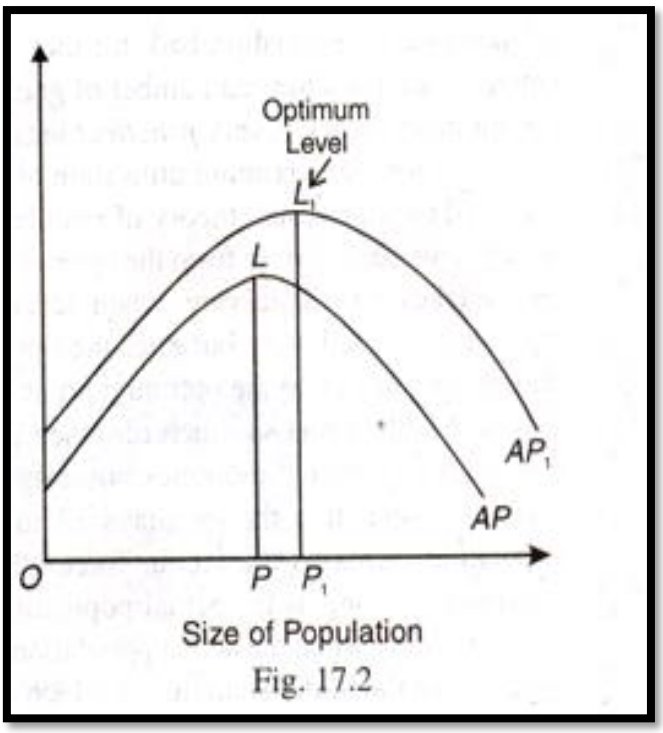

Fig. 17.2

The size of population is measured on the horizontal axis and the average product of labour on the vertical axis.

AP is the average product of labour or income per head curve.

Up to OP level, increases in population lead to a rise in the average product of labour and per capita income.

Beyond OP, the average product of labour and per capita income fall.

Hence when population is OP, the per capita income is the highest at point L.

Thus, OP is the optimum level of population.

To the left of OP, the country is **under-populated** and beyond OP, it is **over-populated**. However, OP is not a fixed point.

If due to inventions there are improvements in the techniques of production, the average product of labour might increase and push the level of per capita income upward so that the optimum point rises.

This is shown in the figure where the AP_1 curve represents the higher average product of labour and point L_1 shows the maximum per capita income at the new optimum level of population OP_1.

It's Superiority over the Malthusian Theory

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.

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**.

The Malthusian theory is a **static concept** which applies to a period of time. The optimum theory is a **dynamic** one because over a period of time the per capita income may rise with the expansion in output due to improvements in knowledge, skill, capital equipment and other elements in production. This may raise the optimum level of population.

Thus the optimum theory is more realistic.

The Malthusian doctrine is simply theoretical and is devoid of all practical considerations. It regards all increases in population bad, for they bring **untold miseries to the people.**

On the other hand, the optimum theory is very practical because it regards an increase in population not only desirable but also **necessary for the maximum utilisation** of the country's natural resources.

The Malthusian theory of population is based on the **unrealistic assumption** of the **niggardliness of nature**. This belief arises from the operation of the law of diminishing returns in agriculture. But the optimum theory takes a **realistic view** when according to this the law of diminishing returns does not operate in agriculture immediately but after the optimum point is reached.

In other words, first the law of increasing returns operates up to the optimum point and the law of diminishing returns after it.

Malthus was so much obsessed by the fear of over-population that he ignored a fundamental fact that a newly born child 'comes not only with a mouth and a stomach but also with a pair of hands'.

The optimum population theory allays all such fears of the Malthusians by stressing the fact that increasing population increases the labour force which helps raise the optimum expansion of the country's natural resources.

Malthus was essentially a pessimist who portrayed a gloomy picture about the future of mankind which was full of misery, vice, floods, droughts, famines and other natural calamities.

The optimum theory; is superior to the Malthusian theory because it does not suffer from any pessimism, rather it adopts an optimistic and realistic attitude towards the problem of population when it relates population to the wealth of the country.

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

No Evidence of Optimum Level

The first weakness of the optimum theory is that it is difficult to whether there is anything like an optimum population. **There is no evidence about the optimum population level in any country.** In fact, it is impossible to measure it. For optimum population implies a qualitative; well as a quantitative ideal population for the

country. The qualitative ideal implies not only physique knowledge and intelligence, but also the best age composition of population. These variables are subject change and are related to an environment.

Thus the optimum level of population is vague.

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 the 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.

Neglects the Distributional Aspect of Increase in Per Capita Income

Even if it is assumed that per capita income can be measured, it is not certain that the increase in population accompanied by the increase in per capita income would bring prosperity to the country. Rather, the increase in per capita income and population might prove harmful to the economy if the increase in per capita income has been the result of concentration of income in the hands of a few rich.

Thus the optimum theory of population neglects the distributional aspect of increase in the per capita income.

Optimum Level not fixed but oscillating

The concept of the optimum population assumes that the techniques of production, the stock of capital and natural resources, the habits and tastes of the people, the ratio of working population to total population, and the modes of business organisation are constant. But all these factors are constantly changing.

As a result, what may be the optimum at a point of time might become less or more than the optimum over a period of time.

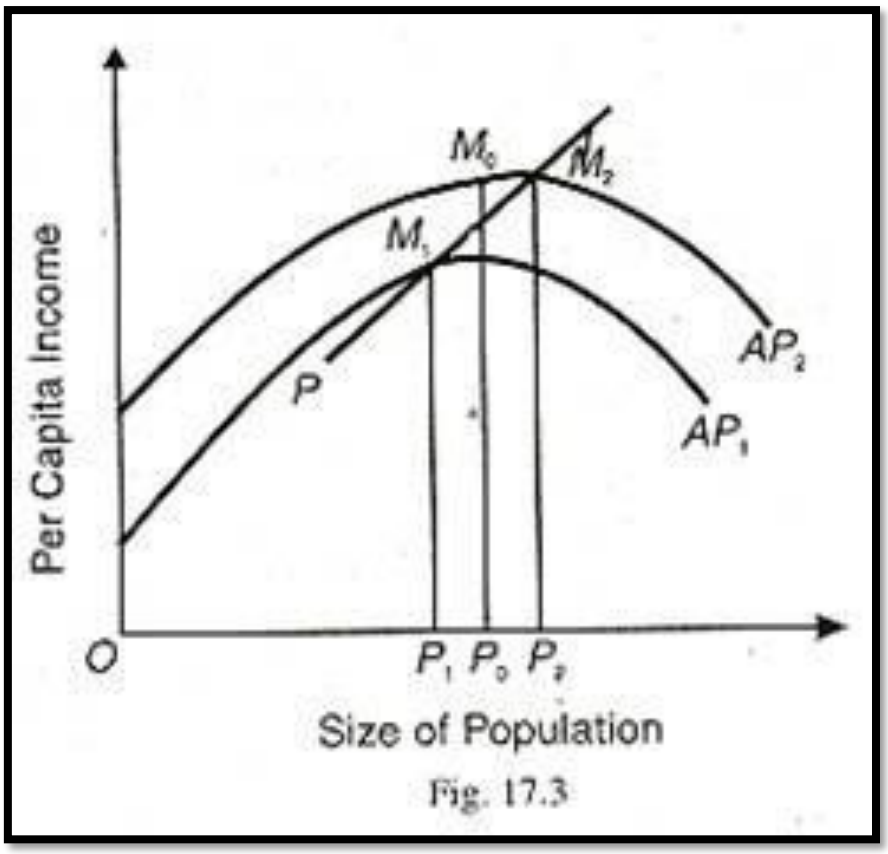

Fig. 17.3

AP_1 is the average product of labour or per capita income curve.

Suppose there is an innovation which brings a change in the techniques of production.

It shifts the per capita income curve to AP_2. As a result, the optimum level of population rises from OP_1 to OP_2 with the increase in per capita income E from P_1M_1 to P_2M_2.

If the per capita income rises further due to a change in any of the above assumed factors, the AP_2, curve will shift upward. The AP_2 or AP_1 curve can also shift downward if, for instance, the capita income falls due to an adverse change in the given factors.

If the locus of all such points like M_1 M_2 etc., are joined by a line, we have the PI curve which represents the path of the movement of the optimum population as a result of changes in the economic factors.

If, however, the actual level of population is assumed to be OP_0 and the optimum level OP_1 then the country is over- populated.

If OP_1 is the optimum level, then the country is under-populated.

Thus the optimum is not a fixed level but an oscillating one.

Neglects Social and Institutional Conditions

The optimum theory considers only the economic factors which determine the level of population. Thus it fails to take into consideration the social and institutional conditions which greatly influence the level of population in a country.

Thus the optimum theory is imperfect and one-sided.

No Place in State Policies

The concept of optimum population has no place in the policies of modern states.

While fiscal policy aims at increasing or stabilising the level of employment, output and income in a country, no reference is made to the optimum level of population.

This theory is, therefore, of no practical use and is regarded as useless.