

Lecture 27: Daly's Synthesis and Optimum Population Theory

Slide 1

DALY'S SYNTHESIS

Recognizing the importance of both demographic and institutional factors in the developmental planning in general, and inadequacy of either or type of question, some social scientists have attempted to develop a combination of Malthusian and Marxian views of poverty and development. Among them, Daly (1971) suggests that the theories of Malthus and Marx are complementary. Populations are marked by both differences in ownership of property and fertility. A simple definition of poverty is the per capita income, or the ratio between income and population (Y/P). The cause of poverty or low per capita income, according to Malthus is high population (P), and according to Marx low income (Y). The two theories will be complementary if the growth of population and income are independent.

Daly argues that the two are independent only within limits, Given Y , there is maximum value of P that is possible and a minimum value of P that is technically necessary. Also the growth of P affects Y directly through age distribution and its influence on saving, education, and size of surplus. However, the effect of Y on P is less clear than of P on Y . Malthus says that development or increase in Y leads to growth of population (P) but the empirical correlation between income and population growth of the global level is negative. Daly maintains that the empirical does not necessarily contradict theoretical because the relation between Y and P is mediated by a number of factors as traditions and customs, norms, ethics, material standards and law. Daly divided the population into four groups by nature of income (those earning from wages or property) and birth control (those using or not using birth control methods). He expresses that the Marxian theory of stratification is based on the experience of nineteenth century when population was growing rapidly. If the rate of population growth is less than the rate at which workers are displaced by machines, there can not be any surplus population or reserve army. Daly analyses what happens to four groups as time passes and society moves from primitive to classless society of the future.

Slide 2

OPTIMUM POPULATION THEORY

For some the theory of optimum population initially developed by Marshall, Sidgwick, Cannan and Gini provides a more realistic alternative to Malthusian and Marxist theories. According to this theory due to law of diminishing returns and limited substitutability of factors of production, as population grows the long run tendency of per capita income is to decline. For the reason of economy of scale initially for some time per capita income may also rise as population grows but beyond reaching a certain size further growth of population would lead to reduction in per capita income (Figure 8.1). This size is the optimum size of population. Beyond this there is surplus population. Below this there is shortage of population (UN, 1973). Some scholars use welfare measures other than per capita income but the logic of optimum population is the same.

Box 8.1 presents the economic logic behind optimum population theory.

Optimum population theory is part of economic theory of production. It assumes: (a) there are five factors of production, namely, land, labour, capital, organization and enterprise; (b) one single factor produces nothing; (c) cost of production falls with increasing use of one factor and increases thereafter; (d) perfect substitution is impossible; (e) optimum point arises when the ratio of marginal productivity of factor A to that of B is same as the ratio of the price of factor A to that of B; and (f) population is a non-specific factor which can be put to alternative uses. The optimum population theory draws attention to situational factors and gives an objective ideal according to which changes in population should be controlled.

Slide 3

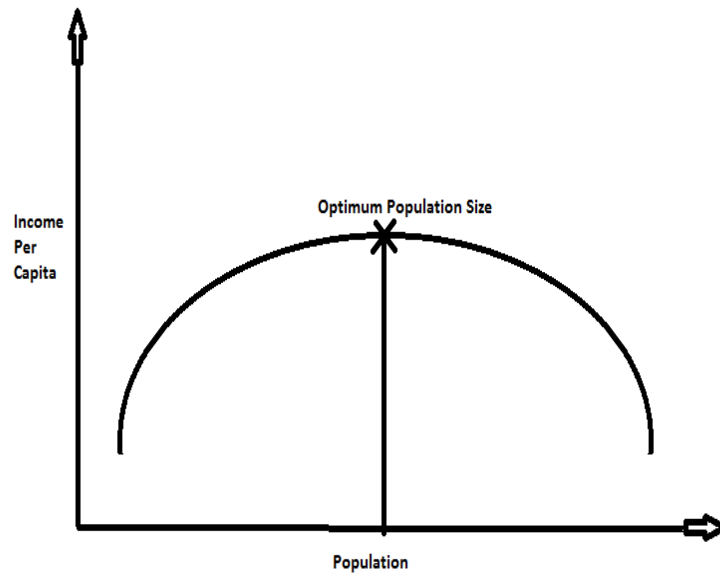


FIGURE 8.1: OPTIMUM POPULATION THEORY

EVALUATION OF OPTIMUM POPULATION THEORY

Myrdal and Gottlieb criticize this theory on various grounds. While Myrdal has expressed that the optimum theory is associated with neo-Malthusianism and demand for a smaller population on policy grounds. Gottlieb (1945) stressed that it is impossible to compute an optimum number that maximizes social welfare. The optimum population size depends on a variety of factors such as resources, level of technology, structure of economy, model of ownership, and international situation and, therefore, it changes as time passes. Moreover, the optimum population size would depend on the criterion used for maximization of welfare.

Slide 4

BOX 8.1: OPTIMUM POPULATION THEORY (OPT)

- OPT is part of the economics theory of population.
- According to economics, there are five factors of production: land, labor, capital, organization and enterprise.
- One single factor produces nothing.
- Initially the cost of production falls with increasing use of a factor but it starts increasing thereafter.
- Up to the optimum size there are conditions of increasing returns as economics of large scale production is enjoyed by any increase in output. However, beyond the optimum size the diseconomies of large scale production or decreasing returns begin to set in.
- Perfect substitution is impossible.
- At the optimum level the ratio of marginal productivity of a factor to price of that factor is same for all the factors.
- Optimum point is not fixed. It depends on other factors.
- OPT gives an objective ideal according to which changes in population should be controlled.
- The limitation of the OPT is that it ignores the distributional aspects of increase in national income. Moreover, it takes a very narrow and materialistic view of social objectives; maximizing per capita income is not always the goal (Hitler and Mussolini wanted large population for military power and communist USSR awarded the Order of Lenin to a mother of fourteen children in the interest of the fatherland).

Slide 5

A more realistic approach to the theory of optimum population has been presented by Mukerjee (1941), Professor of [Economics](#) and [Sociology](#) in Lucknow University, Mukerjee gave the concept of the integral optimum. In *Political Economy of Population* he writes: “The true optimum of population is the integral optimum which is based on a harmonious co-ordination of the optima in the successive levels of ecology, economy and state in respect of (a) the expectation of life, (b) real income, and (c) personal happiness and self-expression, all these from the individual stand-point, and of (a) the stability of the economic base and occupational balance, (b) the regularity and continuity of employment, and (c) national security and power, all of the latter from the collective standpoint.” Mukerjee said that this optima was, however, only a hypothesis (though of a great analytical value) and cannot be quantitatively measured or expressed.