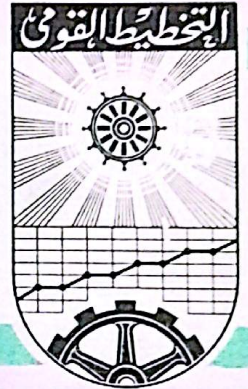


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Population Theories
and History

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Population theories and history

I. Introduction

Population is an important topic which has attracted the thoughts of economists and philosophers since some centuries ago. Nevertheless, it is only new tendencies that scholars have tried to illustrate systematically the impact of population changes on the social institutions and human prosperity.

The question of convenient public policy of population was the main concern of the pioneers in the field of population dilemma.

However, the assumptions by which they have drawn their policies and recommendations were not often explained concretely and not always maturely investigated in that time - more than two centuries ago.

The history of population theory proves that there have been many ancient writers as Chinese, Romans, Medieval Christian Arabs such as Ibn Khaldun in the fourteenth century & Merchantilists whose theories had been widely diffused in Europe during the seventeenth and eighteenth centuries which encouraged the population growth as a factor of power whether economically, politically or military.

II. Population theories

1. Merchantilists and related theories

The main criterion for analysing the population approach of Merchantilists theory is depending upon the relationship between

the population growth and the changes in foreign trade. For instance, Cantillon suggested that if the agriculture of a country could not be expanded in proportion to the population, or if such an expansion would involve diminishing returns, additional agriculture products could be obtained abroad in exchange for manufactured goods.¹⁾

Increasing the wealth and power of the state was the main target of the Merchantilist theory, that is why that theory was concerned primarily with tools and procedures of strengthening the power of the country and how to possess as much as possible precious metals. The basic opinion of Merchantilist writers is to increase the national income rather than the per capita income.

The population growth in the Merchantilist theory would increase the aggregate national income and decrease the wage costs. However, the scientific analysis and the systematic measurement of population trends has come into being since the flourished period of the Merchantilists theory. Graunt²⁾ has noticed the existence of the numerical regularity of death and birth and examined the characteristics of these phenomena according to sex, besides, he examined some important causes of death to all mortality cases. Petty³⁾ argues that population growth has positive effect on the economic situation of the state. Nonetheless, he expected that population may double every 360 year and accordingly he has come to the result that war, slaughter and conflicts would occur.

1) J.J. Spengler and Otis Dudley Duncan, Population theory and policy. 1956 Chapter 1, p.9. Reference their mentioned.

2) Ibid. p. 10.

3) Ibid. p. 10.

Suessmilch ¹⁾ also observed the regularity of birth, and death rates, and expected that population may double every century. Adding that, as population growth the required period for doubling the population would be enlarged.²⁾ Suessmilch stressed that the problem of population is focussed on the inequalities in distributing the natural endowment between different areas on the earth and between nations.

In general suessmilch expected advantages from accelerating the population growth.

2. Malthusian theory

During the end of the eighteenth century Marchantilist theory had been criticized and rejected by many economists. They rejected the Merchantilist doctrine which stress the advantages of population growth on the fiscal, and economic ground of the state. The critics emphasised the important role of subsistence as a check for population growth.

They have confirmed that the dimentions of population growth is determined as principle by the scale of available subsistence to support the growing number of population. The opinion of the opposers was that Merchantilist doctrine would lead to minimize the per capita income and put obstacle to augmenting the standard of living.

1) See. J. Bonar, Theories of population, 1931 chapter 5.

2) See: T.R. Malthus. An essay on the principle of population, 1798.

In their opinion, the population can adjust themselves to the available subsistence and to the demand for labour.

Besides, they observed that "psychological checks" had played an important role side by side with the so-called "physical checks". Consequently the problem of analysing the determinants of population growth became more complicated.

Malthus believed that man's capacity to multiply exceeds his capacity to produce his means of subsistence. The former tending to increase in geometrical progression while the latter tending to increase in arithmetical progression.

In malthus view population is oftenly affected by available means of subsistence which represent a check either possitively or negatively on the size of population.

The checks (i.e., wants, famine, pestilence, pre-mature mortability) were all crystillized in form of misery and vice.

Death rate plays an important role in determining the rate of population growth. It has been often proved true that the birth rate is a relatively unvaried determinant while the death rate is improving or determining according to many factors such as economic standard, health services, etc. The lack of food has always been one of the most important causes of a high death rate among people.

Therefore, the population pressure with limited means of subsistence causes misery and vice.

Malthus standpoint is that population had a constant tendency to exceed the means of subsistence and consequently poverty and misery would follow. He also believes that population would continue to grow since the means of subsistence are available and the population growth would be checked if the means of subsistence are prevented by powerful and obvious check. However, Malthus illustrates new checks namely "moral restraint" which entail the control of population by means of preventive checks and chiefly latter marriage, i.e. the postponements or deferment of marriage for prospective spouse.

It is obvious now that the main cause of mass poverty is the population explosion. In Malthus opinion, the law of diminishing returns would take place in the course of population growth. He argued that poverty is not caused by the form of the state. Poverty in his opinion is a principle sequent of population pressure in relation to the means of subsistence.

Nevertheless, in the course of civilization and modernization of the society the "prudential check" to marriage continue to grow.

Jan Rosner opposed the Malthusian theory and its conclusion and stated that "Malthus forecasts were not based on scientifically proved premisses, and were very soon disproved by events: neither did food supply progress so slowly, nor population increase so rapidly during the 19th and the first half of the 20th centuries as Malthus had predicted. "The process of industrialization and urbanization created great possibilities of increasing food

supply as well as more houses, clothing, education, employment and finally the level of living rose in all industrialized countries of the world.¹⁾

However, P.A. Samuelson argued that the germs of truth in his doctrine (Malthus) are important still for understanding the population behaviour of India, China and other parts of the globe where the balance of numbers and food supply is a vital factor.²⁾

Malthus population essay aroused acute argumentation which necessitate a systematic and adequate information.

Therefore, the Malthus population theory was indirectly responsible for the development of the demographic analysis. As a matter of fact Malthus has contributed to a great extent to the development of population theories and paved the way for a scientific analysis of the population dilemma.

3. Classical theory of population

The classical school of economics either in England... or in European continent and America were concerned primarily to discover the laws controlling the production function, its level and trend, rents, profits, wages and interest. However, they dealt with the population factor, its causes and consequences in their analysis to examine the economic variables. They argued that population growth causes poverty and decrease the wage level. Such belief has been driven principally from the laws of diminishing or increasing

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- 1) Jan Rosner. Population Problems and Manpower planning. The Higher course in National Economic Planning Warszawa, 1968, p. 2.
 - 2) Paul A. Samuelson. Economics, An Introductory analysis, New York, 1958 Part 1. Chapter 2, p. 27.

returns in different sectors of economic activities which were demonstrated and examined by the earlier economists such as Serra, Adam Smith and his followers.

The prevailing idea was that in the course of population growth the costs of production of agricultural products continue to increase while the manufacturing products implies increasing returns as a result of division of labour and the improvement in technology. The main causes of diminishing returns in the agricultural sector can be attributed to two main factors. Firstly, the limitation of arable land in quantity and quality. It is concerted that the facile princeps in utilization is the fertile land, afterwards the derelict land would be in demand and consequently the diminishing returns law would occur. Secondly, the scope of division of labour which has been stimulated by the improvement of techniques is rather narrow in the agricultural sector than in the manufacturing spheres.

It follows that the population pressure would affect negatively the per capita output in the agricultural production.

In their opinion if the improvement of techniques and technology cannot be accelerated, the continuous population growth causes a diminishing in the standard of living. Thence, the improvement of techniques and technology would maintain and even increase "the average condition" of the people in spite of the population growth. It also has been viewed that the diminishing returns in agriculture can be avoided through different means and procedures such as exchanging manufactures for agricultural commodities, encouraging emigration to newly discovered areas which suffer from lack of population, investing capital in other countries ... etc.

They also suggested that the level of wages is also affected by the ratio of population to capital. Therefore, the level of wages would rise if the rate of growth of capital accumulation is higher than the rate of population growth and vice versa. But of course, it is well known that the increase in productivity may entail an increase in wages. Notwithstanding, there is a close relation between the increase in productivity and the increase in capital ¹⁾. Population control was a favourable point of view during that period.

J.S. Mill²⁾ was, however, more optimistic than Malthus, he encouraged the process of controlling the population growth since the production of goods and the flow of services have certain limits and could not extend after a certain level, in particular when foreign trade and emigration play a small role in neutralizing the population pressure. Mill stated that in the primitive societies the main check of population growth are poverty and pre-mature mortality while in the advanced nations the population growth is checked mainly by man's "fear of want". However, he added other factors such as the independence of women, improvement and availability of education and the evolution of civilization as a factor restricting the population growth. Nevertheless, the changes in attitudes and habits, of population have a great influence on restricting the population growth.

Mill emphasized the fact that socialism would be harmonious and more fitting to the countries which are coping with the population pressure. Say's³⁾ analysis also implies an optimistic

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- 1) Worth mentioning in this respect that Von Thunen argue that, low wage level is caused by low marginal productivity and by the exploitation policies of capitalists. Op. Cit. J.J. Spender and O.D. Duncom p. 15.
 - 2) See: J.S. Mill Principle of political economy 1843; 1936 edit. Chapter 10, 13, 47.
 - 3) Op. Cit. J.J. Spengler and Otis Duncom p. 16.

aspect and rejection of Malthus attitudes, toward moral restraints. He believed that the population could continue to grow since man's capability could be enough for producing proper living for himself.

Notwithstanding Roscher ¹⁾, in Germany suggested the important role of a morally rational checks on the sexual impulse. In the same time he argued that civilization and technology is a basic criteria to avoid poverty. Thus Malthus's theory has been met with violent criticism everywhere in Europe.

4. Pre-Marxian Socialist Attitudes

The pre-Marxian socialists either in England or in Europe opposed the Malthusian doctrine. They have held that the number of population could be controlled under the new form of the society i.e., socialism .

Gray²⁾ stated that the number of population could continue to grow without complications as long as the raw materials which could support the production process are available. The Recardian socialists in England, likewise, criticized Malthus's ratios and rejected his views.

Malthus; views were opposed by early French socialists because of their ascetic implications, their denial of the bounty of nature, their opposition to social reform and organization and also because of their denial that maldistribution was a major source of misery. ³⁾

1) Ibid. p. 20.

2) Ibid. p. 20

3) Ibid. p. 20

Fourier ¹⁾ and his followers argued that the "physiological dietary" would play its effective role in controlling the population growth under the new organized society. Proudhon ¹⁾ believed that the new organized form of the society would neutralize the effect of population growth. Ferdinand Lassalle ²⁾ assumed that the causes of low average wages level is mainly influenced by the exploitation of workers by the capitalist that can be removed by the reorganization of the society and labour market. Others held that the problem of low wages level would be intensified by the population increase. ³⁾ Achilla Loria ⁴⁾ and other economists argued that excess of population is due to lack of capital rather than shortage in foodstuffs in the sense that capitalist wage system could continue functioning and force the labourers to work for low wages. Therefore, capital formation can increase the wage level and solve the unemployment problem. Hence, the standard of living of the working class continues to improve.

5. Marxian doctrine and socialist concept

Marx ⁵⁾ and the Marxist writers, all and sundry, rejected and hold along from the idea which stress the existence of the problem of population. They referred the population problems to the disorganization of the society. The sources of the main causes of

1) OP. Cit. P. 20, J.J. Spengler and Otis Dudley Duncan.

2) Ibid. p. 20.

3) Rodbertus stated that population growth entails the exploitation of workers and consequently depressing wages.

4) See op. cit. J.J. Spengler & O. Duncan p.10

5) See Marx, Karl: Capital A. Critique of political economy. The process of capital production, translated from the 4th German edition by Eden and Cedar Paul. International Publishers Co., Inc., New York, 1929.
P. Sweezy: The theory of capitalist development, principles of Marxian political economy. Oxford University Press, New York 1942.

poverty and misery in their opinion are the inequality of the income distribution and the unsoundness of the existing social orders. They also argue that, consentaneously with the alteration of the society, the existing dissonance would disappear and the population problem would be overcome smoothly. On this ground they concluded that under the new socialist orders population problem can be mitigated or altogether can disappear.

"Marx's solution to the problem turns around his famous concept of reserve army of labour or, as he also termed it relative surplus population". "The reserve army consists of unemployed workers who, through their active competition on the labour market exercise a continuous downward pressure on the wage level.¹⁾ The reserve army is created principally from those who have been displaced by machinery. "The increasing organic composition of capital, i.e. the increase of the part of capital spent on means of production, buildings, machines, etc., as fixed capital, with relatively less manpower, is being used for a unit of capital: thus machines eliminate men²⁾".

Marx blent the problem of population to the capitalist mode of production, in the sense that capital accumulation and its productive use increased less rapidly than the growth of labouring population. Consequently the "overpopulation phenomenon" would occur in the form of unemployed labourers. Marx demonstrates that any mode of production implies its particular laws of population. Overpopulation, as being the case, is belonging to the capitalistic system and its continuation and in this way labourers are exploited.

1) Ibid. p. 89

2) Op. cit. Jan Rosner p. 3.

According to the marxian analysis the unemployment phenomenon could be classified into three main categories, namely:

- (a) Floating which caused mainly by evolution of technology and machinery;
- (b) Latent which have a particular effect on the agricultural population and forcing the rural labourers to migrate to cities, and
- (c) Stagnant form which includes the labourers who are irregularly employed.

Marx affirms the fact that capitalist mode of production implies the accumulation of capital which replaces labour and creates unemployment. It is selfevident, in opinion of Marx that to overcome the problem of over population the capitalist mode of production must be transferred into a collective form. Marx also believes that the reorganization of the society and the redistribution of national income are to create favourable living conditions and tend to decrease death rates. Nevertheless, under the new circumstances and according to the new mode of production the birth rate would decline too. Marx, however, did not stress the important role of "moral restraint" as a check for population growth. Adding that the decrease in population growth may aggravate the underconsumption and decrease the rate of profit which consequently affecting negatively the capitalist development. Marx argues that poverty which malthus has illustrated is caused by unemployment which can be attributed to the capitalist mode of production. Marx held that women have a superior position under socialism and consequently the rate of population would decrease relatively.

Lenin¹⁾ opposed the Malthusian theory and stated that the law of diminishing returns is applicable in the case when technology remains unvaried, while if the technology continues to progress the law of diminishing returns would not operate. Lenin's idea, however, is more realistic and applicable under the condition of technological progress. In his opinion the problem of overpopulation happens as principle under capitalist mode of production.

Lubny Gertsyk¹⁾ stated that the overpopulation phenomenon would be created when the desirable productivity could not be achieved. However, the population pressure would be accentuated by the lack of natural endowments, the insufficiency of consumer goods and the falling of production for one reason or another.

6. Development of the non-socialist doctrine of population theory

Since 1870 the non-socialist opposers of the Malthusian theory became more violent in their criticism than those earlier writers of the nineteenth century and the antagonism between the socialists and non-socialists became more confined. The prevailing attitude among writers in the second half of nineteenth century and during the twentieth century in some western European countries and United States is that if the population growth rate would not decrease the economic standard of population would deteriorate. The emigration has become a favourable idea in England and the suggestions concerning the advantage of immigration in France and United States has created an accute argumentation.

We have mentioned that the earlier writers of the nineteenth century believed that the manufacturing industries would gear with the constant or increasing returns while the extractive industries may entail rising costs even with the tendency of technological progress.

However, it seems obvious and it has become well known now that the falling of the out put per worker would occur in manufacturing industries as well, provided that the number of workers exceeds a certain level (i.e. when the labour intensity exceeds a certain limit).

Nevertheless, the reform of social organization, the evolution of the techniques and skill besides a creation or discovering new productive wealth would neutralize the impact of population growth and may counteract the tendency of diminishing returns.

Cannan and other writers derived from these attitude a dynamic variable of optimum population. Cannan defined the optimum population as a population that would moving in the right direction with respect to the increase of output per capita¹⁾.

Marshall²⁾, however, believes that the increase in labour and capital generally entail improvement in organization and stimulate efficiency and consequently outface or Counterbalance the negative effect of diminishing returns in production that can be played by nature.

1) Ibid. p. 24.

2) See Marshall, Elements of economic of industry 1829 BK IV Chapter 13.

Notwithstanding, Wichsell¹⁾ suggested that in the long run the law of diminishing returns would operate. On the other hand Wolfe stated that natural resources always set a limit to production, though the limit was in all cases at least somewhat elastic and in some cases might be far in the future. Continuing population growth would therefore eventually bring the law of diminishing returns into operation, so that, changed economic, social and political policies would be necessary to ensure continued progress in the material wellbeing of the people²⁾.

Keynes³⁾, however, stated that population pressure would be affected by the unfavourable terms of trade.

Generally speaking the concept of population pressure entails the meaning of the hardships of livelihood which are accentuated by the population growth. This phenomenon is considered as a typical phenomenon in the majority of the underdeveloped countries.

It is undoubtedly believed that the unequal increase in the human resources, especially the agricultural over the limited arable land in the agricultural countries leads to undesirable results, most important of which is the decrease of personal agricultural productivity, which decreases the personal income, health, cultural, economic and social standards. The personal productivity has decreased as a result of the law of diminishing returns which springs from an increase in one factor of production (e.g. labour) while the other factors remain stable, or increase at a lower rate.

1) Op. Cit. J.J. Spengler and O.D. Duncan p. 28.

2) A. B Wolfe, Reading in social problems 1916, p.1
Wolfe emphasized the Value of Optimum Population theory in focusing attention on the problem of achieving a satisfactory adjustment of population size to resources.

Thus the marginal and average productivity of the labourers will decrease after reaching a certain stage (i.e. according to the assumption of constant technical progress and where labour factor is so large relatively to capital and natural resources, the marginal productivity of additional input of labour factor will be negligible or near to zero.) This law is quite apparent in the U.A.R.

However, in our opinion we cannot refer the problem of population pressure to one factor neglecting the others. We cannot say that the problem is focused on the pattern or the mode of production only neglecting the impact of demographic factor. Besides we cannot refer the problem to the lack of the natural resources impairing the exigent level of technology which the country is acquainted with. Also we cannot discuss the problem of population pressure with indifference to the unfavourable terms of trade of the underdeveloped countries which may affect the level of the per capita income. Nonetheless, it seems right that the problem of population is further aggravated by international tension and the regional conflicts which force the underdeveloped countries, with limited resources, to allocate a great part of it to the armament sphere. It goes without saying that the armament expenditure is considered as a great load on the underdeveloped countries and accentuate the problem of population betterment.

In our opinion, we can summarise the factors which may affect the population pressure in the following points:-

- a) The demographic factor.
- b) The mode of production.
- c) The lack of natural resources.

- d) The level of technology and technique.
- e) The terms of trade.
- f) The armament expenditure.

All these complicated factors had to be studied together and in relation to each other.

It is obvious that the problem of population pressure is of multi-nature and it is affected by the ebb and flow of all social, economic and political factors. The decisive decision that one factor is creating the problem of population pressure is rather difficult, it is the ultimate result of compound factors.

These deterrents, however, differ from one country to another.

III. Types of population pressure.

There are two types of population pressure namely: the absolute and the relative population pressure¹⁾. Absolute population pressure can best be defined as the actual need of physical goods. Chiefly food and shelter to ensure survival and, at present, also a few of amenities or comfort life.²⁾ The main criterion by which the absolute population pressure can be measured is the per capital amount of necessities consumed. This amount is very low in some of the underdeveloped countries, particularly among the indigent classes.

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- 1) Not to be understood as the "relative surplus population" given by Marx.
 - 2) W.S. Thompson and D.T. Lewis, population Problems, Fifth 1965 Chapter 19 p. 502.

Encore the higher the absolute population pressure the greater will be the income elasticity of demand for food and necessities.¹⁾ In contrast to absolute population pressure, the relative pressure of population will be defined as the degree of deprivation felt by people, as it comes to know, of the meagerness of its manner of living as compared with that enjoyed by other peoples or by other classes in the same country.²⁾ The relative population pressure has become a very important phenomenon within one country or between nations. Within a country the relative population pressure is well known between the elite and indigent classes. Between nations. The relative population pressure is quite noticeable between the developed and underdeveloped countries. The feeling of deprivation is continually intensify the problem of relative population pressure either between classes of the same country or between nations. Nevertheless, the rational redistribution of national income among the masses of the society, may mitigate to some extent the population pressure.

1) However, FAO estimates for Africa indicates that it is of the order of 0.6 as compared to 0.16 for north America, also the income expenditure survey conducted in Wadi Halfa in Sudan indicate that the income elasticity of demand for cereals /wheat/ in Wadi Halfa town area is of order 0.8, which means that 10 percent increase in income is likely to be associated with 8 percent increase in the demand for cereals. See Manpower and Educational Planning in Economic development. African Institute of Economic Development and Planning (U.N.) Dakar & INPC May 1964.

2) Op. cit., W.S. Thompson and D.T. Lewis p. 502.

Therefore, there is an increasing demand for food, shelter and clothing, and luxuries to day may be regarded as necessities tomorrow.

This paper deals principally with the theoretical discussion of population theories and draws inspirations from ideas and concepts elaborated by different economists and schools of economics.

In the next memo we are intending to cast light on the problem of population pressure in the U.A.R., its causes, characteristics and effects on the national income.

