

PERSATUAN EKONOMI MALAYSIA
(Malaysian Economic Association)

3.1 Concepts
3.1.1 Introduction

Opinions

SIXTH MALAYSIAN ECONOMIC CONVENTION

AGENDA FOR THE NATION VI:
MALAYSIA IN THE 1980's

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¹ Malthus

² See in

Growth and Economic
Princeton University
Accelerate Development
pp. 349-66, Malthus
Universe Books,
Population Control
Population Institute

7-10 May 1980
Penang



Population And Development: A Review And Malaysian Experience

3.1 Conceptual Framework:

3.1.1 Introduction

Opinions differ widely as to the role played by population factors in economic development, and there is a growing body of literature purporting to validate one view or the other. The argument that rapid population growth has adverse effects on economic development is most widely known and may be traced to the thesis of Malthus.¹ This view is based on the premise of finite resources, particularly land, and on the argument that rapid population growth diverts the savings required for economic development into consumption, and investments into unproductive uses. Such a stance has been supported by a number of empirical models and studies.²

Other researchers, on the other hand, while agreeing that population factors are intimately related to economic factors, argue that

¹Malthus, T.R., Essays on Population, 1798.

²See in particular Coale, A.J. and E.M. Hoover, Population Growth and Economic Development in Low Income Countries (Princeton, Princeton University Press, 1958); Enke, S., "Reducing Fertility to Accelerate Development", Economic Journal, Vol. 84 No. 334, Jan. 1974, pp. 349-66, Meadows, D., et. al., The Limits to Growth, (New York, Universe Books, 1972); and Suits, D.B. and A. Mason, "Gains from Population Control: Results from an Econometric Model", East West Population Institute, Paper No. 49, Honolulu, 1978.

quite the opposite is the effect, warning against the adverse consequences of a falling or static population. Population growth is seen as resulting in economies in scale, and also as promoting technological change.³ Sociological arguments in favour of population growth has also been advanced.⁴

A third position, founded mainly upon empirical research, is that there is no relationship between population and economic change. The work of Simon is representative of this school of thought.⁵ Without challenging the empirical evidence adduced by these research, we can dismiss this argument as irrelevant for the purpose of our analysis. The lack of association between aggregate population growth and economic growth, represented by income, cannot be used to refute or support the contention that population and economic factors are interrelated. Nor has explanations been given regarding this lack of relationship. More pertinent is the distinction between short- and long-run impacts, so that the observed low correlation may simply reflect conditions in the short-run.

³Hagin, E.E., The Economics of Development (Homewood, Irwin, 1975); Boserup, E., Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure, (London, Allen and Unwin, 1965).

⁴Sauvy, A., La Fin des Riches (Paris, Calmann-Levy, 1975).

⁵Simon, J.L., The Economics of Population Growth (Princeton, Princeton University Press, 1977); Simon, J.L. and R. Gobin, "The Relationship Between Population and Economic Growth in LDC's" in Research in Population Economics Browning, M., "The Effect of Population Growth on Income Growth in LDCs", Paper presented at the Annual Meeting of the Population Association of America, Philadelphia, Apr. 1979.

In this section, we shall attempt to make this distinction, and in so doing, discuss both the effect of population on economic variables and the effect of the latter on the former.

3.1.2 Income, Consumption and Output

Just as it is not particularly useful to discuss population growth in aggregate terms, there is no virtue in looking at total income. Closer examination of the components of income-consumption or savings, investment, trade, etc - in relation to their linkages with demographic variables is called for. Since these linkages cover a wide area, the following discussion can only be regarded as illustrative rather than exhaustive.

Insofar as consumption or savings is concerned, age and age distribution are generally considered key variables. Since, consumption needs depend upon the age of the individual, this linkage on the demand side is clear. Further, ^{while} an addition to the household affects the total consumption of the household it is not precisely known whether it is increased or decreased. On the one hand, a positive correlation between consumption and the dependency ratio is suggested, while on the other, it has been argued that since the consumption needs of children are generally smaller than those of adults, a larger proportion of children may actually imply a lower burden on consumption.⁶ What is

⁶Leff ("Dependency Rates and Savings Rates", American Economic Review, Vol. LIX, No. 4, Sep. 1969, pp. 886-96) found a negative relationship between the savings and dependency ratios. For the opposite conclusion, see Kleiman, E., "Age Composition, Size of Households and the Interpretation of Per Capita Income", Economic Development and Cultural Change, Vol. XV, No. 1, Oct. 1966, pp. 37-58.

certain, however is that the composition of consumption changes not only because of this, but also depending on whether household income increases proportionately.⁷ On the supply side, however, this relationship is less direct. Age distribution is a determinant of the dependency burden and of the size of the labour force. The latter is one of the major determinants of productivity, which in turn affects per capita income. Finally, the marginal propensity to consume or to save determines how much of this income is consumed or saved. Insofar as fertility and mortality affect the age distribution of the population, they may be said to have an influence on consumption and savings as well. Two other points may be mentioned in passing. First, it has been argued that a larger number of children may actually encourage greater saving.⁸ And second, the age of an individual is an integral ingredient of the 'life-cycle' hypothesis of consumption.⁹

⁷See, for instance Prais, S.J., 'The Estimation of Equivalent Adult Scales from Family Budgets', Economic Journal, Vol. 63, Dec. 1953, pp. 791-810; Prais, S.J. and H. Houthakker, The Analysis of Family Budgets (Cambridge, Cambridge University Press, 1955); Houthakker, E., 'An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engels Law', Econometrica, Vol. 25, No. 4 Oct. 1957, pp. 532-51.

⁸Kuznets, S., 'Population Change and Aggregate Output', pp. 324-40 of National Bureau of Economic Research, Demographic and Economic Change in Developed Countries, (Princeton, Princeton University Press, 1960).

⁹See Modigliani, F. and R. Brumberg, 'Utility Analysis and the Consumption Functions: An Interpretation of Cross-Section Data', pp. 388-436 of Kurihara, K.K. (ed.), Post Keynesian Economics, (New Brunswick, Rutgers University Press, 1954) Eizenga, W., Demographic Factors and Savings, (Amsterdam, North-Holland 1960).

The process of migration may also affect consumption patterns and savings. The age selectivity of this process not only implies changes in the age composition of the population in the areas of origin and destination, but also changes in labour force participation rates, and labour productivity, so that ultimately consumption and savings are affected.¹⁰

With regard to investment, the adverse effects of rapid population growth discussed in section 3.1.1 can in fact be traced to its effects on investment. The Harrod-Domar model, on which many planning models of less developed countries was once based, has been frequently used to demonstrate that a high rate of population growth will require a very high rate of capital formation if income levels are to be maintained, let alone increased.¹¹ Equally well-known is the model of Coale and Hoover, which traced the implications of alternative paths of fertility and population change on consumption, savings and investment. The authors found that under the assumptions made, a decline in fertility resulted in accelerated growth per capita income.¹² A similar conclusion is reached by Sauvy, who

¹⁰Spengler ("Economics and Demography", pp. 791-831 of Hauser, P.M. and O.D. Duncan, (ed.) The Study of Population: An Inventory and an Appraisal (Chicago, University of Chicago Press, 1959)) argues that the supply of savings is reduced by migration in the long run, since urban dwellers have propensities to consume higher than those of rural residents.

¹¹See Harrod, R.F., "An Essay in Dynamic Theory" Economic Journal, Vol. 49, No. 193, Mar. 1939, pp. 14-33, and Domar, E.D., Essays in the Theory of Economic Growth, (New York, Oxford University Press, 1957). See also Banmöl, W.J., Economic Dynamics, (New York, MacMillan, 1951).

¹²Coale, A.J. and E.M. Hoover, Population Growth and Economic Development in Low Income Countries, A Case Study of India's Prospects. (Princeton, Princeton University Press, 1958).

argued that a higher rate of population growth necessitates more 'demographic investments', leaving less for 'economic investments'.¹³

Some reservations have, however, been expressed regarding the validity of these findings. These arise because of difficulties relating to the determination of capital output ratios, given the wide variations between countries, and because of questions regarding the representativeness of these types of models.¹⁴ At the same time, fears are also expressed of the adverse effects of a declining population. Many see population growth as giving rise to economies of scale in production and investment. These economies of scale will raise labour and capital productivity, so that, given the level of per capita income, investment needs are correspondingly lower.¹⁵ Keynesian theory also implies that population growth may increase effective demand for consumer goods, thus stimulating investment.¹⁶

¹³'Demographic' investments are defined as those which are required to absorb the impact of population growth, whereas 'economic' investments are those which result in an increase in productivity or income. See Sauvy, A., Theorie Generale de la Population, (Paris, Presses Universitaires de France, 1956), Vol. I, pp. 288-90, and cited in United Nations; Department of Economic and Social Affairs, op. cit., pp. 457-8.

¹⁴See Leibenstein, H., "Incremental Capital-Output Ratios and Growth Rates in the Short-run", Review of Economics and Statistics, Vol. XLVIII, No. 1, Feb. 1966, pp. 20-27. See also Solow, R.M. "A Contribution to the Theory of Economic Growth", Quarterly Journal of Economics, Vol. LXX, No. 1, Feb. 1956, pp. 65-94.

¹⁵See the arguments summarised in United Nations: Department of Economic and Social Affairs; The Determinants and Consequences of Population Trends, Vol. I, (New York, 1973) p. 497.

¹⁶See, for instance, Keynes, G.M., "Some Economic Consequence of a Declining Population" Eugenics Review, Vol. 29, No. 1, April 1937, pp. 13-18.

Apart from the growth of population, its structure also exerts an influence on the type of investment required. For instance, a large proportion of the population in the school going age groups necessitates higher investments in education, while a population with a larger proportion of older persons will increase the need for investment in residential construction. Similarly, rural-urban migration may put pressure on investments of the social overhead type rather than of an economic type.

One of the major factors affecting income growth is productivity, and many arguments advanced to relate population growth to income growth deal in fact with the association between the former and productivity. It has been argued that a large population size implies a larger market, which in turn permits a larger scale of production, and consequently, the reaping of economies of scale in production. In other words, a greater population size gives rise to greater specialisation of enterprises and division of labour without increasing proportionately the unit public cost (or outlay) which are more in the nature of fixed costs.¹⁷ In support of these arguments it is observed that larger countries have more diversified economies, and that the proportion of foreign trade in national income is inversely related to the size of the country and to the size of population.¹⁸ These arguments

¹⁷Sauvy, op. cit., pp. 274-6

¹⁸Kuznets, S., "Quantitative Aspects of the Economic Growth of Nations, IX: Level and Structure of Foreign Trade: Comparisons for Recent Years" Economic Development and Cultural Change Vol. 13, No. 1, Pt. 2, Oct. 1964 and Kindleberger, C., Foreign Trade and the National Economy (New Haven, Yale University Press, 1962).

are somewhat naive, however, since they ignore the role played by other cooperant factors of production and the technology under which production occurs. Given this technology, an increase in labour input without a corresponding increase in capital, say, will not necessarily lead to greater productivity unless the technology permits a substantial degree of substitution between factors. It is quite possible, of course, for an increase in population to affect technology positively, for instance, through enlarging the pool of 'creative' manpower who are the sources of innovations and technological progress, so that productivity may in fact improve, but this is not an inevitable conclusion of the arguments advanced above.¹⁹

Similar arguments may be applied to proponents of the application of the law of diminishing returns to, in particular, agricultural productivity since the assumptions of a fixed supply of factors and the absence of technological progress are again applied. There are again substantial evidence to suggest that these assumptions are oversimplifications. Bilsborrow, for instance, discusses the types of responses to increasing population pressure on land, classifying these into 'demographic', 'economic' and 'demographic-economic'.²⁰ Demographic responses include changes in nuptiality, marital fertility or family planning, while economic responses may be in the form of factor substitution and technological change, and

¹⁹ See United Nations; Department of Economic and Social Affairs, *op. cit.*, pp. 485-6.

²⁰ Bilsborrow, R., "Population Pressures and Agricultural Development in Developing Countries: A Conceptual Framework and Recent Evidence", Paper Presented at the Meeting of the Population Association of America, Philadelphia, Apr. 1979.

investment to increase productivity. Out-migration is considered a demographic-economic response. The speed of these responses of course differs, but over a period of time, all these will modify the initial impact of population growth. Again, Boserup argues that agricultural output may be raised in response to population growth by bringing uncultivated land into cultivation, by reducing the fallow period, and by the expanded use of multiple cropping.²¹

With respect to migration itself, it has been argued that as migrants tend to move from areas of low productivity to areas of high productivity, the overall productivity of the country's population should increase. This is again a fallacy. To the extent that migration, particularly rural-urban migration, is age-selective and education- or skill-selective, the effect of these flows is usually to leave behind in the areas of origin those workers of low educational or skill attainment and of high age groups. Productivity in these areas is consequently reduced. At the same time, migrants to urban areas may be faced with a labour market with deficient demand, so that the problem of underemployment in rural areas may simply be transformed into one of open unemployment or underemployment in urban areas. If this occurs the net effect on productivity is difficult to predict. Very complex relationships and chains of causation are involved with migration flows, and despite intensive research, the picture is not entirely clear. The brief discussion above can no more than touch the surface of the

²¹ Boserup, E., "Population and Agricultural Productivity" (mimeo).

arguments advanced.²²

3.1.3 The Labour Market

The relationship between population and the labour force is one facet of the relationship between the former and resource availability, and in the basis for the arguments of underdevelopment advanced by various authors of economic development. The notion of rural overpopulation was used by Nurkse in his discussion of agricultural underemployment and the use of surplus labour, and by Leibenstein in his analysis of disguised unemployment.²³ Their arguments were however challenged by other researchers, who denied that marginal productivity in agriculture was at or near zero.²⁴

The arguments presented above relate to the supply side of the labour market, and are concerned in the main with total numbers rather than with the components of the population. However, the growth of the labour force need not coincide with the growth of population, since the former are determined by two factors - the age composition and the participation rate in the labour force. The growth of population, with a large increase in the number of young children, will result in a less than proportionate growth in the economically active population and generally the labour force, while

²² See section 3.1.3 for a discussion of some issues. An excellent survey is provided in Todaro, M., Internal Migration in Developing Countries (Geneva, International Labour Office, 1976).

²³ Nurkse, R., Problems of Capital Formation in Underdeveloped Countries, (Oxford, Blackwell, 1953). Leibenstein, H., Economic Backwardness and Economic Growth, (New York, Wiley, 1957).

²⁴ See, for instance, Schultz, T.W., Transforming Traditional Agriculture: Studies in Comparative Economics, (New Haven, Yale University Press, 1964).

an aging population will have the same effect.

Labour force participation rates depend on a number of factors. Participation rates for males who are household heads typically exhibit little variation, and it can be assumed that all male household heads will be in the labour force. Males who are not household heads however have participation rates affected by the level of education, and the income of other members of the household. Both these factors should be negatively correlated with labour force participation. Participation rates for females, however depend on marital status, income, education and fertility. Single females generally enter the labour force in the same way that males do, although their participation rates are typically lower. Participation rates decline as females get married and withdraw from the labour force, but rise again after their children reach an age which permits them to work. In summary, labour force participation rates depend both on economic and demographic factors, with the latter being:

- i) age
- ii) sex
- iii) status (head of household/non-head) or marital status, and
- iv) fertility

On the demand side, Kuznets has been able to establish the association between swings in population growth and in economic variables, and hence employment varies with population growth.²⁵ However the relationship

²⁵ Kuznets, S., "Long Swings in the Growth of Population and in Related Economic Variables", Proceedings of the American Philosophical Society, Vol. 102, No. 1, Feb. 1958, pp. 25-52.

is a less than direct one, since it is not possible to establish a causal relationship between them. The demand for labour is essentially a function of economic factors like relative wages and economic prosperity. Under the usual assumptions of perfect competition in the labour market, full employment can be maintained if wages are allowed to move freely. In this case, the population factors affecting the supply of labour discussed above may be said to have an impact on employment as well. Under conditions of wage rigidity, however, the factor of adjustment between labour demand and supply is the level of unemployment. The argument of the adverse effects of population growth then runs as follows: An increase in population, unaccompanied by corresponding increases in other factors of production, or by developments in productive technology, will result in unemployment in urban areas and underemployment in rural areas.²⁶ It has also been argued that population characteristics exert some influences on various types of unemployment. For instance, the risk of structural unemployment may be greater with a declining population than with a rapidly growing population.²⁷

²⁶ See also Easterlin, R., Population, Labour Force and Long Swings in Economic Growth: The American Experience, (New York, National Bureau of Economic Research, 1968). Population growth is then seen as affecting the man/land ratio in agriculture, and the capital/labour ratio. This line of reasoning however does not take into consideration economic responses to these population pressures. See Boserup, op. cit. Bilsborrow generalises these responses to include 'demographic' and 'demographic-economic' responses. See his "Population Pressures and Agricultural Development in Developing Countries: A Conceptual Framework and Recent Evidence", Paper presented at the Meeting of the Population Association of America, Philadelphia, April 1979.

²⁷ See Chapter XIII of United Nations, Department of Economic and Social Affairs, The Determinants and Consequences of Population Trends, Vol. I, (New York, 1973).

Apart from these considerations, migration is affected by conditions prevailing in the labour market, and, according to Todaro, by expectations as to what these conditions are.²⁸ Thus migration flows may be explained by relative wages, say between rural and urban occupations, and by expected wage differentials. Population and social factors like the age structure and the level of education are powerful determinants of the size of this migration flow, so that they have important bearings on the spatial distribution of the workforce and of employment. Among the 'push' factors may be cited pressure on land and the lack of employment opportunities.²⁹ In developing countries, both 'push' and 'pull' factors are operative. This is at variance with the contention that in developing countries the former predominate while in the advanced countries, pull factors in the form of increased demand for labour are the major determinants of rural-urban migration.³⁰ The growth of the industrial sector and the appearance of labour shortages in manufacturing establishments in many developing countries is convincing proof of the fallacy of this contention.

²⁸Todaro, M.P., "A Model of Labour Migration and Urban Unemployment in Less Developed Countries", American Economic Review, Vol. 59, No. 1, Mar. 1969, pp. 138-48.

²⁹See Todaro, M.P., Internal Migration...., op. cit.

³⁰United Nations, Dept. of Economic & Social Affairs, op.cit., p. 480 stated that "To the extent that these movements to the cities respond more to 'push' factors existing in agriculture than to 'pull' factors operating in the non-agricultural sectors, rural-urban migration in many developing countries constitutes a transfer of underemployment in agriculture to open unemployment or underemployment in the cities".

There remains one area where population factors may be said to have effects, albeit indirect, on employment. Changes in fertility and mortality affect, in the long-run, the age composition of the population, with the result that patterns of consumption change. This should, over time bring about adjustments in the structure of production, and hence in the composition of the employed workforce. As an example, an aging population is expected to consume a larger proportion of luxury and semi-luxury goods. Since these goods are characterised by high elasticities of demand, structural unemployment is said to be more likely in a declining or stationary population.³¹

The inter-relationships between population, labour force and economic change have been detailed in several models. Notable among these are the models of Enke and Blandy.³² These found that in the short-run, lower population growth may have adverse effects on employment, although in the long-run, development is accelerated. Apart from questions of specification these models have been criticised as being too aggregative. More detailed specification of the labour market is contained in the BACHUE series of models developed by the International Labour Organisation, but the results

³¹ See Reddaway, W.B., The Economics of a Declining Population, (New York, MacMillan, 1939). For arguments to the contrary, see Lewis, W.A., The Theory of Economic Growth.

³² General Electric Company, Technical Military Planning Operation, Description of the Economic-Demographic Model, (Santa Barbara, General Electric Company, 1971); Blandy, R., "Population and Employment Growth: An Introductory Empirical Exploration", International Labour Review, Vol. CLI, No. 4, Oct. 1972, pp. 347-66.

from these are also dependent upon the assumptions made.³³

3.1.4 Basic Needs

While planners have traditionally focussed attention on economic aspects of development, growing interest has been expressed in 'total' development, with some emphasis on social welfare. This interest stems from the awareness that the conventional factor inputs can account for no more than a part of economic growth, and also from the view that development implies a great deal more than just economic growth.³⁴ The concept of basic needs, however, is more easily understood than defined, especially in quantitative terms. Nevertheless the following considerations are recognised as important:³⁵

- i) education,
- ii) health,
- iii) nutrition,
- iv) housing, and
- v) accessibility to social amenities like water, electricity and sanitation.

³³To date four national models - for Brazil, Kenya, the Philippines and Yugoslavia - and one international model - BACHUE - International - have been built.

³⁴Technological progress and human resources are examples of qualitative inputs. See, for instance, Leibenstein, H., "The Impact of Population Growth on Economic Welfare - Non-Traditional Elements", in National Academy of Sciences, Rapid Population Growth, (Baltimore, Johns Hopkins Press 1971 pp. 175-98).

³⁵For a model based on these dimensions, see Hopkins, M. and R. Van Der Hoeven, "Economic and Social Factors in Development: A Socio-economic Framework for Basic Needs Planning", International Labour Organisation, World Employment Programme Working Paper No. WEP 2-32/WP 19, Jul. 1979.

Education is a phase of the maturation process of the population, even though persons reaching school-going age can either enter the school system, or opt to remain outside it. In general, however, the educational system receives on the one hand persons of school going age, and on the other, outputs graduands into the labour force. Apart from these obvious linkages, education is related to population variables in the following ways:

- i) The level of educational attainment bears an inverse relationship with fertility rates,³⁶
- ii) The level of education also affects migration and the propensity to migrate,
- iii) If a family planning programme is in existence, acceptance rates may be closely related to the level of educational attainment.³⁷

The relationship between the structure of the population and education needs has already been discussed (section 3.1.) and requires no further elaboration.

Health is indicated by life expectancy or mortality, and in this sense is intimately tied to population factors. However there are other

³⁶ See Jones, G.W., "Effects of Population Change on the Attainment of Educational Goals in the Developing Countries", in National Academy of Sciences, *op. cit.*, pp. 314-67.

³⁷ See, for instance, Paqueo, V., "The Family Planning Evaluation Submodel", Chapter 5 of Kintanar, A., et. al., Studies in Philippine Economic-Demographic Relationships, (University of the Philippines, 1974).

indicators, like the number of hospital beds per capita, the number of doctors, nurses, outpatients, the number of rural health clinics, village midwives, etc. which are related to demographic factors, as well as other dimensions of basic needs (in particular nutrition).

Food and nutrition is directly related to the demographic variables in three main ways. These are:³⁸

- i) Improved nutritional intake has beneficial effects on fertility,
- ii) It reduces mortality not only from undernutrition and starvation, but also from infections and diseases, and
- iii) It improves the health of the population

In addition, the nutritional intake of protein has been found to be inversely related to household size.³⁹ It has even been argued that a programme to raise nutritional levels is an effective instrument of population policy, even though such a programme should be complemented by others such as health and family planning.⁴⁰

³⁸ Extensive literature on this subject is cited in a paper entitled "Micro-and Macro-Studies of the Links between Population, Food and Nutrition with Application to National Development Policies", prepared by the Economic and Social Commission for Asia and the Pacific for the Regional Seminar on an Integrated Approach to Population, Food and Nutrition Policies and Programmes for National Development, Bangkok, Jul. 1979.

³⁹ See Kogut, E.L. and C.G. Langoni, "Population Growth, Income Distribution and Economic Development", International Labour Review, Vol. III, No. 4, Apr. 1975, pp. 321-34.

⁴⁰ Economic and Social Commission for Asia and the Pacific, op. cit.

Apart from its relationship with population variables, nutrition or food consumption is tied to economic variables through its influence on the productivity and/or the quantity and quality of labour. At the same time, the consumption of food is related to other demographic variables in the manner described in section 3.1.2.

Finally, with respect to housing and the provision of social amenities and infrastructure, population variables like age distribution, migration all have some effects, although it may not be an easy task to disentangle these from others brought about by other variables. Further, insofar as the satisfaction of basic needs is related to the distribution of income, population factors play an indirect role also.

These linkages have been made explicit in a number of studies, but basic needs modelling is a relatively recent phenomenon.⁴¹ Apart from its delayed recognition, difficulties of quantification and the lack of reliable data on social phenomena have been responsible for the slow development of this kind of models. An alternative approach - that of cost-benefit analysis - has also been criticised on specific issues of the definition and measurement of costs and benefits and of the appropriate rate of discount.⁴²

⁴¹ See Hopkins and Van der Hoeven, *op. cit.*, and also Japan, Ministry of Health and Welfare. A Basic Study on the Econometric Analysis of Social Security, (mimeo), (in Japanese), Mar. 1979.

⁴² See, for instance Enke, S., "The Gains to India from Population Control: Some Money Measures and Incentive Schemes", *Review of Economics and Statistics*, Vol. XLII, No. 2, May 1960, pp. 175-81, his "The Economic Aspects of Slowing Population Growth", *Economic Journal*, Vol. LXXVI, No. 301, Mar. 1966, pp. 44-56; Zaidan, G., "The Cost and Benefits of Family Planning Programmes", International Bank for Reconstruction and Development, Staff Working Paper No. 12, 1971, and Leibenstein, H., "Pitfalls in Benefit-Cost Analysis of Birth Prevention", *Population Studies*, Vol. 23, No. 2, July 1969, pp. 161-70.

3.1.5 The Effect of Socio-economic Variables on Population:

In the above sections, we have sketched some relationships between demographic and economic variables but have concentrated mainly on those in which causation runs from the former to the latter. While these are well known and have been used extensively in planning models, the reverse type of causal relationships is also important in the medium to long-term. In fact, the only justification for economic planners to treat population factors as exogenous or to ignore them altogether is that they are only concerned with the short-run. Even so, there are some demographic responses which occur quite rapidly. One major example is migration, and for this reason, we shall discuss this subject in some length in this section.

Looking first at demographic response in general, Bilsborrow outlined a number of factors which were said to determine the type of demographic response to be expected in agricultural areas. These were⁴³

- i) the existing level of living,
- ii) the availability of untapped, potentially cultivable land,
- iii) the availability of other rural employment opportunities,
- iv) the availability of urban employment opportunities,
- v) the availability of labour-intensive, land-saving technological change,
- vi) the existing crop structure and its capacity for change,

⁴³ Bilsborrow, *op. cit.*, pp 13-16. Examples of such responses are contained in his paper.

⁴⁴ These are extremely numerous and complex, but they include class structure, land-ownership and tenure arrangements.

⁴⁵ See Davis, *Demography*, Vol. 29, No. 4, Oct. 1963, pp. 345-66.

⁴⁶ Adelman, I., "An Econometric Analysis of Population Growth", *American Economic Review*, Vol. LIII, No. 3, Jun, 1963, pp. 314-39.

- vii) the existing size of the rural population relative to the urban population,
- viii) the prevailing level of rural fertility and the strength of factors maintaining its high level,
- ix) the existing size of land holdings and their distribution, and
- v) social and institutional factors.⁴⁴

The above list is illustrative rather than comprehensive, but it highlights the fact that the determinants of demographic change can be both economic as well as social.

Coming to the components of population size and change, the

most well-known relationship is between the level of fertility and income.

Indeed this relationship is one of the cornerstones of the concept of the demographic transition.⁴⁵ Simply put, the demographic transition

describes the process, observed in advanced countries, whereby as the income of the country increased as a result of economic development,

mortality decline accelerated, followed, after a while by a decline in fertility. Doubts have been expressed, however, whether this notion

was applicable to underdeveloped countries currently undergoing economic

growth.⁴⁶ Certainly, as section 3.1.1 showed, only a weak relationship, or

none at all, could be established between fertility and economic indicators

⁴⁴These are extremely numerous and complex, but they include class structure, land ownership and tenure arrangements.

⁴⁵See Davis, K., "The Theory of Change and Response in Modern Demographic History", Population Index, Vol. 29, No. 4, Oct. 1963, pp. 345-66.

⁴⁶Adelman, I., "An Econometric Analysis of Population Growth", American Economic Review, Vol. LIII, No. 3, Jun, 1963, pp. 314-39.

of development. Nor were attempts to determine 'thresholds' of socio-economic development beyond which fertility declines entirely successful.⁴⁷

Apart from income levels, education has been found to be an important determinant of fertility. The relationship is an inverse one. The better educated invariably have lower fertility. There is of course some multicollinearity between factors here. Higher incomes open the door to better educational opportunities. While it has proved difficult to separate these effects, education exerts a direct influence on fertility by delaying marriage. Another factor is female labour force participation. An increase in female labour force participation is said to be partly responsible for a decline in fertility. Occupational structure also plays a role. Needless to say, the age distribution of the population and life expectancy are other demographic variables influencing fertility.

The same economic variables - the level of income, income distribution and occupational structure - have been hypothesised to affect mortality, but most empirical studies have found these effects to be extremely weak ones. Nuptiality, on the other hand, has been found to be related to such factors as the level of education, employment status, female labour force participation, child mortality and income.

An important area where economic variables play a major role is migration, although the factors influencing the decision to migrate

⁴⁷ See Kirk, D., "A New Demographic Transition", in National Academy of Sciences, op. cit.

are numerous and complex.⁴⁸ These economic variables include the 'push' variables like low agricultural productivity and the 'pull' variables like high urban wages. In the earliest models of migration, in fact, the motivations to migrate were formulated in economic terms.⁴⁹ Migration in these models was brought about by the growth of the modern sector, and migration was thought of as having an equilibrating influence on income disparities between rural and urban areas. The experience of developing countries, however, in which growing unemployment in urban areas in no way dampened migration flows, brought into question the validity of these early models, and models by Todaro and others attempted to explain this phenomenon in terms of the expectations of potential migrants.⁵⁰ This model hypothesises that migration proceeds in response to rural-urban

⁴⁸The non-economic factors may be classified into social, physical, demographic, cultural and communication. See Todaro, M.P., Internal Migration in Developing Countries (Geneva, International Labour Office, 1976) p. 26.

⁴⁹These models are associated with Lewis and Ranis-Fei. See Lewis, W.A., "Economic Development with Unlimited Supplies of Labour", Manchester School of Economic and Social Studies, Vol. XXII No. 2, May 1954, pp. 139-91; and Fei, J.C.H. and G. Ranis, "A Theory of Economic Development", American Economic Review, Vol. LI No. 4 Sep. 1961, pp. 533-65. See also their Development of the Labour Surplus Economy (Homewood, Irwin, 1964) and Reynolds, L.G., "Economic Development with Surplus Labour: Some Complications", Oxford Economic Papers, Vol. XXI, No. 1, Mar. 1969, pp. 89-103.

⁵⁰Todaro, M.P., "A Model of Labour Migration and Urban Unemployment in Less Developed Countries", American Economic Review, Vol. LIX, No. 1, Mar. 1969, pp. 138-48; his "Income Expectations, Rural-Urban Migration and Employment in Africa", International Labour Review, Vol. 104 No. 5, Nov. 1971, pp. 387-413; his "Rural-Urban Migration Unemployment and Job Probabilities: Recent Theoretical and Empirical Research", in Coale, A.J. (ed.), Economic Factors in Population Growth, (London, MacMillan, 1976); Harris, J. and M.P. Todaro, "Migration, Unemployment and Development: a Two-Sector Analysis", American Economic Review, Vol. LX, No. 1, Mar. 1970, pp. 126-42.

differences in expected earnings, so that potential migrants are assumed to maximise expected gains from migration. The factors which determine the decision to migrate are predominantly economic ones, and include urban wages, self-employed earnings in urban areas, government policies, rural incomes, cost of living and other opportunity costs of migrating.

This basic model has been modified and extended by several authors, notably Johnson, Corden and Findlay, Fields, and Steel and Takagi.⁵¹ Johnson introduced variables for the rate of labour turnover and work sharing through an extended family network, while Corden and Findlay modelled capital mobility between rural and urban areas.⁵² Fields suggested three additional variables which were likely to influence employment and underemployment. These were the establishment of labour exchanges, the extent of 'over-education' of the labour force, and the extent of job-hiring.⁵³ Finally, Steel and Takagi analysed the Harris-Todaro model, but extended it to distinguish between an urban intermediate sector, a rural non-agricultural sector, and an urban informal sector, in addition to the two existing sectors.⁵⁴

⁵¹ For an excellent review of migration models, see Todaro Internal Migration..., op. cit., Chapter 3.

⁵² Johnson, G., "The Structure of Rural-Urban Migration Models", East African Economic Review, Jun. 1971, pp. 21-28; Corden, W.M. and R. Findlay, "Urban Unemployment, Intersectoral Capital Mobility and Development Policy", Economica, Vol. 42 No. 165 Feb. 1975, pp. 59-78.

⁵³ Fields, G., "Rural-Urban Migration, Urban Unemployment and Underemployment, and Job-Search Activity in LDC's", Journal of Development Economics, Vol. No. , Jun. 1975, pp. 165-87.

⁵⁴ Steel, W.F. and Y. Takagi, "The Intermediate Sector, Unemployment, and the Employment-Output Conflict", Nashville, Vanderbilt University, Department of Economics, 1976, mimeo.

All these variables are represented in empirical models of migration behaviour. In BACHUE-Philippines, for instance, the micro-propensity to migrate was made a function of work status, marital status, employment status, respondent's occupation and respondent's father's occupation, while the macro-propensity depended upon the distance of moves, the extent of modern employment, the number of children in schools, the availability of electricity and water supply and the extent of government sponsorship.⁵⁵

The above discussion has highlighted not only the fact that complex relationships exist between demographic and economic/socio-economic variables, but that these relationships are not always observable. The lack of an observable relationship has in many cases led researchers to conclude that the link between population and economic growth is a weak one. This conclusion is entirely unjustified, and can be attributed to mis-specification, or to lack of consideration of the appropriate linkages. Attempts to remedy this has resulted in economic-demographic models.⁵⁶ While these have their fair share of critics, simulations with these models, and the experiences gained from the construction of new ones have demonstrated the numerous and varied roles that models can play as instruments of, and guides to economic

⁵⁵ See the references cited in section 3.1.1

⁵⁶ Among the more recent models are those of the BACHUE-series, the UNFPA model, the LPRM and PDM models and the Elek model of Papua New Guinea. See, for instance, Rodgers, et. al., *op. cit.*, United Nations: Economic and Social Commission for Asia and the Pacific, Report on Evaluation of the Role of Population Factors in the Planning Process Through the Application of Development Models, Bangkok, 1978; Quinn, J., "The Use of the LPRM and PDM Models for Structural Analysis and Development Planning", United States Bureau of the Census, Washington, 1975, mimeo.; Elek, A.L., A Simulation Model for Long-Term Policy Formulation in Papua New Guinea, (Canberra, Australian National University, 1978)

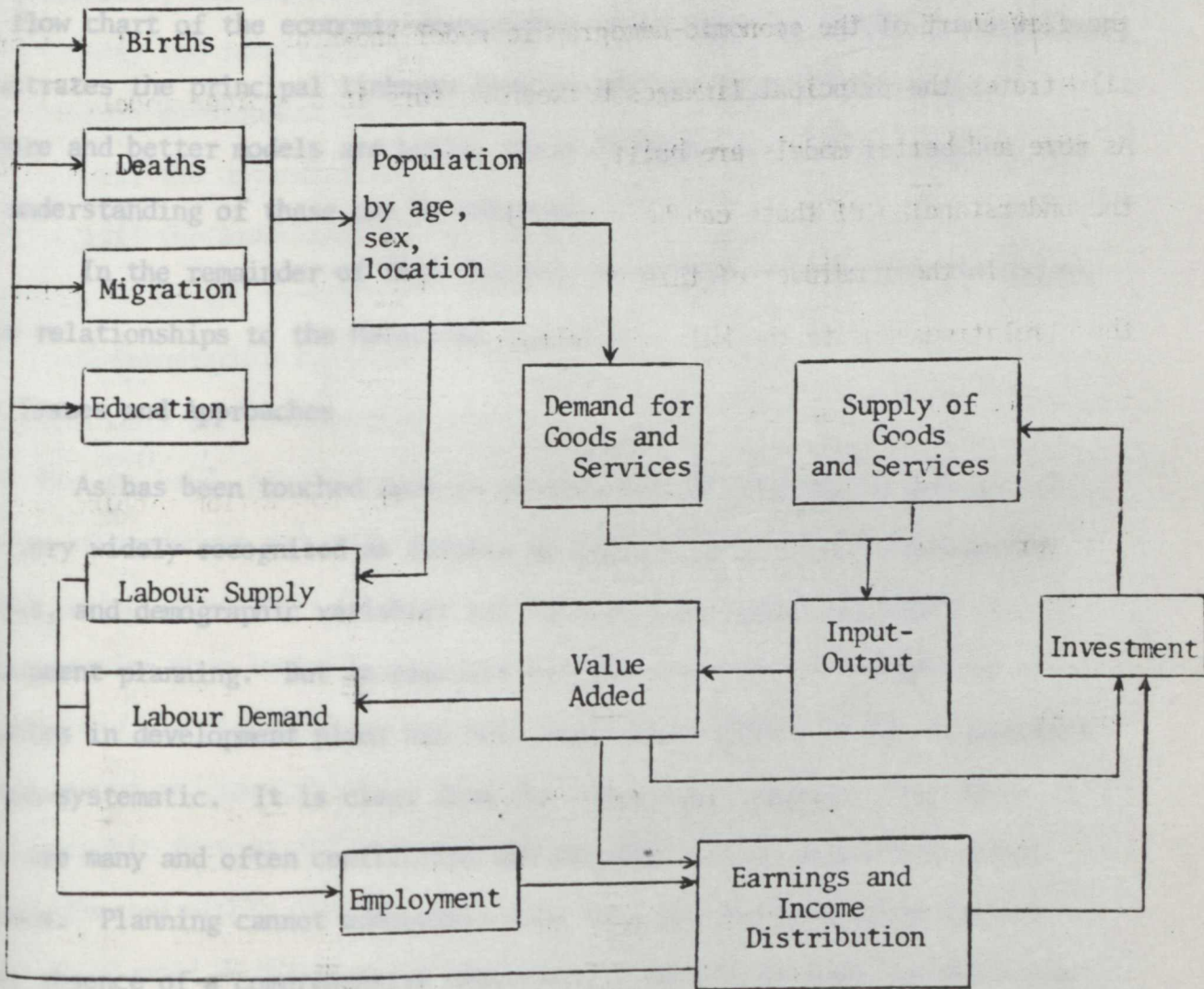


Fig. 3.1 Flow Chart of An Economic Demographic Model: BACHUE-International

Source: Scott Moreland, R., "A Demographic-Economic Model for Developing Economies: BACHUE-International", World Employment Programme Working Paper No. 70, International Labour Organisation, Dec. 1978.

planners. By specifying as explicitly as possible linkages between variables, the models are able to project not only changes in 'target' variables in response to changes in other variables, but also trace their time paths, thereby accomodating responses with different lags. Fig. 3.1, the flow chart of the economic-demographic model known as BACHUE-International, illustrates the principal linkages between sectors in a typical model.⁵⁷ As more and better models are built, these linkages will become clearer, and the understanding of these can be enhanced.

In the remainder of this chapter, an attempt will be made to relate these relationships to the Malaysian situation.

3.2 Issues and Approaches

As has been touched upon in section 3.1 the population problem has been very widely recognized as forming an integral part of the development process, and demographic variables are increasingly being considered in development planning. But in practice the incorporation of demographic variables in development plans has been less than complete if not fragmentary and non-systematic. It is clear from the Conceptual Framework that the views are many and often conflicting and the empirically unverified issues numerous. Planning cannot adequately take into account population factors in the absence of a comprehensive analytical framework or model in which the

⁵⁷ BACHUE-International is one of five BACHUE models that have hitherto been built by the ILO. It incorporates the experiences gained from modelling specific countries, and therefore may be considered a general model. See Moreland, R., "A Demographic-Economic Model for Developing Economies: BACHUE-International" World Employment Programme Working Paper No. 70, International Labour Organisation, Dec. 1978.

complicated system of interrelations between demographic and economic and social variables is explicitly specified and the variables themselves are determined simultaneously.

To unravel the interactions between population and socio-economic development, the three fundamental issues are:

- i) the identification of the relevant demographic and development variables and connections involved;
- ii) the determination of the various forms of interactions; and
- iii) the assessment of the relative importance and significance of the variables.

Demographic variables enter into planning considerations as both determinants and consequences of economic development and social progress. On the one hand, population affects development through its dual role as a body of producers and consumers. The economic and social implications of population trends have to be considered. The demographic variables relevant to planning thus include: population size and growth as determined by fertility, mortality and migration, as well as population components in terms of sex and age structure, spatial distribution of the population etc. On the other hand, demographic factors may be considered as consequences of planning since they are affected either directly or indirectly by economic and social changes in the planned development process. This two-way interaction between population and socio-economic development was discussed in the first section.

The ensuing discussion will focus on the first part of the interaction i.e. the effects on socio-economic development of population variables on the assumption that the latter are exogenously determined. In effect, of course, population and socio-economic variables are linked in a complex and intricate

network of interactions which integrate the development process.

The complexity of issues and lack of a consistent framework is reflected in a certain ambivalence among Malaysian development planners.

While the potential of the population both in terms of human resources and in terms of its contribution to productivity increases broadly defined is acknowledged; there is also concern about the adverse effects of rapid population growth and consequent changes in the population structure on the rate of economic growth, the pattern and level of consumption and investments, demand for social services and the employment problem. With the increasing emphasis on regional planning there has been correspondingly a growing awareness of the importance of the spatial distribution aspects of the population. More recently attention has also been focussed on the links between population and the environment.

The point to note though is that the approach to population and development adopted in Malaysian development plans is piecemeal and often vague. Only those "population responsive" policies (eg. education, health and housing) determined by population projections and "population influencing" policies (eg. family planning and land development) with clearly stated aims and direct implications are based on explicit assumptions regarding the links between population factors and other socio-economic variables. But there are still many areas where the significance of policy implications and policy prescriptions is not recognized because the "hidden" effects of the links between demographic and socio-economic factors havenot been taken into account.

Since it is obviously beyond our scope to cover all possible linkages and consequences nor to verify these with empirical evidence, our attempt to narrow the gap between conceptual generalizations and practical policy tools

in the field of population and development will be confined only to those issues and possible interactions thought to be relevant in the Malaysian context. Where available empirical evidence will be used to substantiate the Malaysian case.

The approach is essentially attuned to the "population problem" as conceived of in Malaysia in terms of a growing and relatively young population. But obviously it should be stressed that even in the context of the links between population and development, the concerns would be different in the longer run if Malaysia's present family planning programmes are effective and population growth stabilizes in which case the problems would take the form of a stable or dwindling and older population.

3.3 Population and Economic Growth

In considering the nature of the relationships between population and economic growth, this section will focus on the one hand, on population size, composition and distribution as well as the trends and components of population growth, and on the other hand, on the main determinants of economic growth: savings and investments, labour, and productivity. Economic growth is defined generally in terms of a sustained increase in national product or income in the aggregate or per capita. But in the broader context, economic development implies also changes in the composition of demand for goods and services, the supply of factors of production and their productivity and the structure and degree of diversification of the economy.

"The many ways in which population affects economic growth and social progress derive from man's double role as the basic agent and final goal of economic and social change. It is fundamentally through its dual role as producer and consumer that population influences other economic and

social factors; and the balance of the effects on production and consumption, interpreted in their broadest sense, determine the impact of demographic factors on levels and conditions of living."⁵⁸ The net effect, however, is the outcome of an almost infinitely complex network of associations. In the face of this complexity of relations and in the absence of a comprehensive framework for analysis, the approach adopted here will focus on the traditional determinants of economic growth. Population is seen as influencing economic growth through its effects upon the basic factors of production. These traditional inputs in turn are assumed to determine income or output through implicitly assumed or explicitly specified relationships.

The aim in this section is three-fold:

- i) to examine the pattern of relationships between population and natural resources, capital and labour;
- ii) to assess the relative importance of demographic factors as compared to other determinants of resources, capital and labour; and
- iii) to evaluate the relative contribution of these traditional inputs to economic growth.

It should, however, be stated from the outset that there is increasing awareness that economic development performance cannot be explained satisfactorily in terms of the traditional inputs and that the role of

⁵⁸Report of the Secretary-General, "Population Change and Economic and Social Development" in United Nations, Population Debate Dimensions and Perspectives. Papers of the World Population Conferences. Bucharest, 1974. Volume I, p. 63.

intangible factors which may broadly be summarized under the heading of productivity increases is significant. It is generally recognized that population size, growth and composition may affect productivity in such diverse ways as through the factors proportion and methods of production; the structure of the economy and changes in it; specialization and economics of scale; innovations and technological progress, the skills and quality of the labour force, etc. Unfortunately, as can be seen from the Conceptual Framework, many of these interrelationships have not been or have only been partly researched; in part due to the complex nature of the productivity concept itself. The discussion that follows will attempt to include productivity considerations under the various aspects of population and economic growth.

3.3.1 Population and the Overall Rate of Economic Growth

The level, structure and rate of growth of the population have a great impact on the crucial decisions to be made in development planning. The first and most obvious consideration is that the socially necessary rate of growth in any plan period must be related, among other things, to the rate of growth of the population. In all developing countries, increasing the level of living of the people represents the primary goal of development. Per capita income, the most common though imprecise indicator of levels and conditions of living, shows the link between growth of income and growth of population. Given targets in terms of the growth of total income or output, the population factor will determine whether such growth will be sufficient to absorb the effects of a growing population on levels of living. Given targets in terms of increase in per capita income, population growth will

determine the rate at which total income will have to grow to achieve the set target. From a mathematical point of view, then, trends in population are as important as trends in production in determining levels of per capita income in a country.

Population growth therefore sets a floor to the socially acceptable minimum rate of growth in a development plan. But the actual rate of growth which can be targetted for is determined with reference to the availability of basic productive resources and other technical, institutional and social behavioural parameters.

In Malaysia's development plans, the rate of population growth does not appear to be the main determinant of economic growth targets. The Outline Perspective Plan 1971-90, for example, fixed the target growth rate of GDP at factor cost in real terms at 8.0% per annum on the basis of expected output from agricultural and industrial expansion, potential output particularly from the oil and natural gas sector, investment and consumption trends and projected export growth.⁵⁹ It is only in a different section of the Outline Perspective Plan on full employment that the population factor is specifically brought in. But it can be seen that since natural increase is estimated at only 2.6% per annum in the 1971-90 period, this factor comes in as the lower limit of economic growth. With total GDP growing at 8.0% and population increase at around 2.6%, per capita figures will clearly allow rising standards of living. In a consideration of Malaysia's development strengths and challenges, population is in fact not seen as posing a serious

⁵⁹ Third Malaysia Plan 1976-1980. Kuala Lumpur: Government Press, 1976 pp. 53-57.

⁶¹ Ibid. p. 52.

problem:

'One of Malaysia's strengths is her young, adaptable and dextrous population and work force which, with the implementation of the government's education policies, is now substantially literate. They constitute not only a strong motivating force for social and economic advancement but also a potential reservoir of employable skills which can be harnessed for the development effort'.⁶⁰

3.3.2 Population and Natural Resources

Historically, the interest in the links between population and economic growth centred on the relationship between population and limited natural resources, particularly land. The Malthusian argument is well known. But the importance traditionally assigned to the role of land and by implication to that of land-man ratio in economic growth has declined sharply. This issue will be discussed further in the section on Population and Agriculture. But in the context of Malaysia's growth efforts, some general and some more specific aspects can be considered:

- i) For the economic growth effort, Malaysia is generally considered to be favourably placed in terms of a relatively small population, rich natural resources, and perhaps as important, a bright potential for increasing the resource base. "The prospects for accelerated growth of the Malaysian economy are bright. They have their origin in the country's large endowment of natural resources relative to the size of its population".⁶¹

⁶⁰ Ibid. pp. 40-41.

⁶¹ Ibid. p. 52.

- ii) A distinction made by Simon Kuznets gets at the crux of the issue: "the scarcity of natural resources in the underdeveloped countries is primarily a function of underdevelopment; underdevelopment is not a function of scarce natural resources".⁶² An over-pessimistic view of the impact of population growth on natural resources and through these on economic growth does not appear warranted if Malaysia considers that the exploitation of natural resources is not only below the feasible potential but also that with economic growth itself could come greater knowledge and capacity to exploit more fully her natural wealth. A case in point is the growing importance of Malaysia's petroleum and natural gas deposits.
- iii) The relevant issues involve not so much a scarcity of land limiting growth as the role of given natural resources versus that of the potential for technological progress. The population factor comes in terms of human skills contributing to the use of advanced technology to remove the limitations of natural resources. Also, a shift in perception of resources as a matter of natural endowment to one of technology and human and physical capital formation will alter the planner's view of the relations between population and resources and therefore between population and economic development.
- iv) The above is not to imply that Malaysia does not have to be concerned about the effects of population growth on resources, particularly in the longer run. Malaysia is already cognizant of the fact that there are ultimate limits to agricultural land (already the major land

⁶² S. Kuznets, Population, Capital and Growth Selected Essays London: Heinemann, 1974 p. 9.

development authority in the country, Felda, is rethinking its policy especially with regard to the size of land given to settlers). And of course, there is no assurance that the potential for technological process will actually be realized or that it will compensate the effects of high rates of population growth. In areas where density and population-land ratios are already very high and land scarcity is associated with low productivity, it is clear that substantial population growth cannot but have adverse effects.

v) It is precisely because Malaysia is aware of the links between population distribution and resources that increasing attention is devoted to regional planning, locational strategies and population redistribution policies. Malaysia has been more sensitive than many other South-East Asian countries to the significance of population distribution in the development process and has assigned greater emphasis not only to regional development but also to policy implications and policy prescriptions for spatial mobility of the population.⁶³

vi) While Malaysia can still be categorized as a land surplus economy and while the country as a whole enjoys a rich resource endowment, what is important for the economic growth effort is that both population resources and natural resources are not evenly distributed.

3.3.3 Population and Capital Formation

The primary role assigned to capital and capital formation in the economic growth process is very evident in all Malaysia's development plans.

⁶³S. Kuznets, Population, Capital and Growth Selected Essays London: Heinemann, 1974 p. 9.

The Outline Perspective Plan 1971-90, for example states that "a major requirement for the targetted expansion of the economy will be strong investment growth, both private and public".⁶⁴ The interactions between demographic factors and capital formation can be discussed in terms of the three stages of capital formation-savings, investment and financing.

Savings, that is the foregoing of current consumption to free resources for capital formation is carried out by three different groups in the economy-the private, corporate and public sectors. It is especially in the private sector that demographic factors are thought to play a significant though perhaps not crucial role in affecting savings decisions and performance. It is generally assumed that age and age distribution of the population are among the most important demographic variables that affect savings capacity and patterns; with age structure of the population the result of past and present trends of mortality, migration and especially fertility. The impact of the age distribution on savings is seen to be manifested through the nature of the population as both consumers and producers. People in different age groups have different consumption needs, so that with a growing population and consequent changes in its age structure, total consumption requirements and the residual of income for savings would change. The age structure also determines the proportion of non-workers to workers in the population ie the dependency ratio with its implications for per capita income and savings.

The issues concerning population growth and composition, dependency, income, consumption and savings are complex, many-faceted and often

⁶⁴Third Malaysia Plan 1976-1980 op. cit. p. 54.

conflicting. While it is generally agreed that a larger population size implies lower per capita income in terms of total income divided among more members and a larger share of total income going to consumption needs and therefore a lower savings capacity; others are quick to point out that it is not per capita income but household income that will bear on private savings. But here, the nature of interactions has yet to be unravelled. Adult equivalent scales have not been able to provide for the effects of varying family composition on consumption patterns and expenditures. Empirically, a younger age distribution of the population usually implies a larger average size of the household. But while on the one hand, a larger household or family size is normally accompanied by larger household income, the positive income effect could be negated by higher consumption expenditures so that the overall effect of a larger household size could be a negative one. Another approach, however, stresses that the effect of an increase in the size of the household may not be so important if there is a switch in expenditure patterns from luxuries to necessities so that income left over for savings is not affected; if larger families enjoy the benefits of considerable economies of scale; if larger families imply a larger number of children whose needs are usually less than those of an adult; or if a larger number of children in fact heightens the motivation to save.

On the issue of the dependency ratio, an increase in the inactive population is usually taken to mean not only lower per capita ^{income,} other things being equal, but also high consumption and consequent low savings. But it is pointed out by others that low levels of living and pressures resulting from an unfavourable age distribution may force more people into

the active population category either in terms of earlier entry into or later withdrawal from the labour force and also that a larger number of children in the dependent age group may represent an additional incentive to save.

Other writers argue that it is not per capita income but the distribution of income that determines savings.⁶⁵ But little real knowledge is available on the possible effect of the structure of the population on the distribution of income. In Malaysia there are the added complications of the multiracial characteristic of the population, the serious ethnic inequality of distribution of income and the influence of the New Economic Policy, all of which could directly or indirectly affect patterns and levels of savings. To add to the confusion, others have introduced the concepts of permanent income and the life cycle as the main determinants of consumption and savings.⁶⁶

For practical planning or policy purposes, the above confusion does not appear to contribute much, but some points can be noted:

- i) The form of the savings or consumption function applicable in the country will have to be carefully studied before the impact of population factors can be assessed. The assumption of a simple function with total consumption or savings being determined only by the level of per capita income has been seriously questioned by many people. The

⁶⁵ J. Dusenberry, Income, Saving and the Theory of Consumer Behaviour. Cambridge, Mass.: Harvard University Press, 1964.

⁶⁶ See R.C. Brumberg and F. Modigliani, "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data" in K.K. Kuriharas (ed.) Post Keynesian Economics. New Brunswick: Rutgers University Press, 1954 and Milton Friedman, "Choice, Chance and the Personal Distribution of Income," Journal of Political Economy, August 1953.

issue also becomes more complicated when we consider that the different races in Malaysia not only tend to have different average size households but also different consumption and therefore savings patterns.

ii) Similarly we are not yet clear about the actual effects of the dependency ratio on savings. The Review of the Third Malaysia Plan does not go beyond stating that "the major consequence of the age structure of the population is the high dependency ratio where every four persons of working age will support about three dependents. The socio-economic implication of a high dependency ratio is a substantial demand for such social services as education, health and housing".⁶⁷

iii) Even if demographic factors have a positive effect on actual savings, in a developing country, the channels for making productive use of these savings of the private sector may be limited. In other words, the government will have to be concerned with the financing aspect of capital formation. Again, savings patterns in a developing country may not be conducive to productive investment purposes. In Malaysia it is all too often that we hear of the money belt among the Chinese and gold and jewellery among the kampung people.

iv) Demographic considerations assume a different role if we consider that voluntary domestic savings normally account for only a small portion of total savings in a developing country and is by no means near the amount needed to create capital at a rate sufficient for economic growth. In Malaysia, private savings is estimated at 14.4% of GDP for 1980 or about

⁶⁷ Mid-Term Review of the Third Malaysia Plan 1976-1980 Kuala Lumpur. Government Press, 1979. p. 60.

20% of private disposable income.⁶⁸ Total private investment is expected to account for more than 60% of total investments targetted for the development effort during the Third Malaysia Plan period, but of this amount private domestic savings will account for only 37%, the remainder coming from inflow of foreign capital (24%) and public sector financing in the private sector and other transfers (39%).⁶⁹

- v) Business savings and government savings are determined by entirely different considerations from those affecting household savings. From the business point of view, two fundamental considerations are that population growth and composition will a) through the consumer market affect business decisions. A larger population may make investments more attractive in terms of a larger market, while the composition of the population will affect the demand and supply of goods and services; and b) through the labour market affect capital-labour ratios (ie effect factor proportions in the country). Demographic changes resulting in large entries into the labour force and employment pressures may have an impact on long-term changes in techniques of production. Malaysia, for example, is constantly encouraging the use of labour intensive techniques and while it is true that labour will still have to work with physical capital, the requirements for capital formation will be different.
- vi) From the government point of view, it is true that a high-fertility population characterized by a large proportion in the younger age groups will absorb income that otherwise might have been saved and used to raise the country's productive capacity. But various authors have pointed out

⁶⁸ Ibid. p. 19

⁶⁹ Ibid. pp. 118-120

that population size and density are linked to certain economies of scale in public expenditure. The argument goes that cost of maintenance of administration and certain public services require some minimum expenditure which does not necessarily increase proportionately with the size of the population. But what the quantitative importance of the economies of scale to be achieved with a larger population are cannot easily be assessed.

vii) The supply of funds issue is certainly not so serious for Malaysia as it is for many developing countries in view of her comfortable Balance of Payments position, strong external reserves and credit worthy position. Seen in this light the significance of demographic factors pales. In Malaysia too it is not the lack of funds that is responsible for shortfalls in the implementation of development projects but rather the shortage of trained manpower. Even if funds for capital formation were forthcoming, the capacity to absorb capital productively may be limited in view of insufficient skilled or qualified manpower, poor market arrangement, basic infrastructure, etc.

Having discussed demographic factors in as far as they affect the supply of part of the funds available for capital formation, we go on to discuss how these factors influence the demand for and the availability of capital goods and investment. In the first place, demographic factors feature in planning in as far as the growth of population determines the lower limit of investment needed to at least maintain existing standards of living. In the second place, the upper limit of investment is determined by the minimum acceptable share of consumption in the national income which, as noted earlier, is partly influenced by population trends and composition.

Discussion of the interactions between demographic factors and investment centre around the argument that rapid population growth not only tends to reduce the funds available for investment but also diverts a larger share of potential additions to the stock of capital to "demographic investments". Increases in population and consequently in labour force require investment to satisfy the needs of the enlarged population and to provide the additional labour force with the necessary equipment and materials. The so-called Harrod-Domar models show that, depending on the value of the capital-output ratio, "demographic investments" i.e. those required to maintain existing standards of living may absorb the larger part of the country's investments leaving little residual for increasing capital per worker, productivity and income. Another way of looking at the issue is that a young and growing population requires substantial investments in housing, schools, health, social overhead capital such as communications, power, transportation etc. This will tend to raise the capital-output ratio and thus the required rate of capital formation needed to achieve predetermined economic growth targets.

There is little doubt that the most important influence of demographic factors is that exerted on the required levels of capital formation. "Even when recognizing the limitations of a simple model of the Harrod-Domar type and the difficulties encountered in practice in estimating the capital-output ratio, it can be argued that rapid population growth will create requirements for capital formation which if not making economic growth impossible will certainly curtail the potential increases in levels of living which would have been possible without such population growth".⁷⁰

⁷⁰ United Nations, *The Determinants and Consequences of Population Trends*. Volume I. New York: 1973. p. 465.

Apart from the growth and age composition of the population, its distribution and density patterns can also have an effect on investments. Investments in public services including the setting up of urban centres etc. will depend on the patterns of settlement of the population and its density. On the other hand, investment and locational strategies related to economic and social development and reflecting decisions taken not only by national and subnational government agencies but also by private firms within the country, multilateral corporations and international agencies will have the power to retain, attract or redirect flows of workers and hence of their families and the commercial and other infrastructure which coalesce around significant employment foci.

In sum, although there are many reasons to link demographic factors with capital formation needs, levels and patterns; for practical planning purposes, there is as yet little evidence available as to the relative importance of these factors compared to other determinants of investment. Also, while planners still assign a crucial role to capital formation in determining economic growth, increasing weightage is being given to other determinants of economic growth.

"In so far as the influence of the physical inputs of land and capital is overshadowed by technological progress, improvements in the quality of resources (including human resources), economies of scale, and other productivity-raising variables, inferences.....may overestimate by a substantial margin the quantitative impact of demographic factors on economic growth".⁷¹

A growth model based only on capital and using capital-output ratios is not useful for planning purposes since it ignores the role of other

⁷¹Report of the Secretary General, "Population Change and Economic and Social Development", op. cit. p. 67.

variables in economic growth. Malaysian planning is clearly based on the approach that it is not just physical capital but human capital that will determine economic growth. Malaysia is placing a great deal of emphasis on manpower planning and the development of human resources because of the recognition on the one hand, of the potential of the population and work force and on the other, that "a principal constraint in accelerating socio-economic development is the shortage of trained manpower".⁷² It is also worth noting that in the case of Malaysia, new discoveries and technological advances have played an important role in economic growth - the petroleum industry being the best example.

3.3.4 Population and Employment

In broad terms, there are two facets of the relations between population, employment and economic development. One aspect relates to population in its capacity as producer i.e. as one of the factors of production and the contribution of the labour force to the economic growth effort. The second and as important facet is that full utilization of human resources is itself a basic goal of development policy although undoubtedly still closely linked to economic growth. This distinction can be seen in Malaysia's development plans which identify economic growth and employment as two goals of development. Another way of viewing the issue is that whereas the size, growth and composition of the population are among the basic determinants of the supply of labour; economic growth, structure and production relations underlie the demand for labour. In other words, while population growth

⁷²Third Malaysia Plan 1976-1980. op. cit. p. 138.

provides a higher productive potential through increased supply of labour; it does not of itself bring about higher levels of production or employment.

The supply of labour is normally interpreted as dependent on:

i) the size of the adult population; ii) the participation rates applicable to each sex/race/age cell in the adult population. Viewed in this way, it is normally stressed that the dominant influence on the acceleration of the labour force growth in Malaysia is the rapid growth of the adult population although there is lag between them. In the short to medium term, of course, the rate of present population growth has virtually no effect on the numbers entering the labour force; the relative increase in their numbers rises progressively only after about fifteen years with higher rates of population growth.

While the link between the size of the labour force and the size and growth of the population is relatively obvious and straightforward, the effects of changes in the composition of the population on the labour force need deeper examination. In Malaysia, for example, the larger share of females in the labour force over the years was probably directly related to their faster rise in population than to higher participation rates. In fact, female participation rates fell over the years. Some of the influences that could affect the entry of females into the labour force are the improvement in the social status of women, greater educational opportunities for women, the changing role of women with urbanization, and even whether a woman needs to work with rising levels of income. But whether these influences operate to increase or decrease female participation rates is not clear.

The change in the composition of the population which is most often stressed is the sharp increase in the proportion of young people especially those in the 15-19 years age group. Malaysia has correspondingly had an

increase in the share of young people in the labour force. But over the years there has in fact been a fall in participation rate of this group. The participation rate of those in the older 50-61 years age group has also fallen. The explanation generally offered being the expansion of secondary education on one side and earlier retirement on the other. The age factor is a significant because of the different age composition of those who enter the labour force and those who retire or withdraw for various reasons. The young are the new entrants into the labour force and are not directly eligible for the jobs vacated by the older group.

The racial composition of the population would also be an important factor to consider as influence, the actual supply of labour is very much determined by the relevant participation rates which are themselves influenced by very complex factors. In assessing the role of population in labour supply and the role of labour in economic growth, it is crucial to note that the supply of labour is itself a function of the demand for labour which is determined by economic growth performance. The number of people offering themselves for work would tend to alter with the job market situation, and also with changes in income levels, changes in social values and attitudes and even institutional changes. At any one time there are always some marginal potential workers available. These people can be considered as being on the fringes of labour force participation or as labour reserve who, if brought in, could contribute to the economic growth effort. They may include married women, young and old dependents etc. particularly in the rural areas and traditional sectors. For example, the size of the labour force in an agricultural country like Malaysia tends to vary significantly with the seasons. On the one hand, there could be seasonal effects on the availability

of additional workers eg. the timing of school terms and holidays would determine whether the younger members can participate in work. But more important are the seasonal changes in demand affecting participation. In busy periods of the agricultural cycles, many additional members could take up economic activities to meet the peak season demand for their labour.

It is also pertinent to stress that the size of the labour supply is sensitive to changes in employment opportunities available. Many people not now looking for work might enter the labour market if the demand for labour picked up and made it attractive for them to do so. The interaction between the supply of and the demand for labour helps to explain why an increase in employment opportunities can, in fact, be accompanied by an increase in unemployment. The exact role of population in this interaction is not clear.

It is also not clear how membership in the labour force would change with increases in income levels that accompany economic growth. According to the "additional worker" hypothesis, there may be those who are forced to take up paid work to supplement family incomes but who would leave as family situations improve. But on the other hand, it is also possible that the revolution of rising expectations and growing material needs that tend to accompany increases in general income levels may provide incentives to continue working and even force more women to work to keep up living standards. Certainly, there is evidence in this country that both the increasing monetization of the rural areas and the setting up of industries has drawn into the labour more women workers.

A final point to make is that while population would affect the size of the labour supply, it is difficult to tell how or whether it affects

the intensity or efficiency of work. For the economic growth effort it is not just the number of economically active population but the amount and quality of the labour effort that is important.

Broadly speaking, three kinds of interrelated economic changes associated with different rates of population growth are relevant when appraising the growth of employment opportunities: i) the rate of economic expansion; ii) the structure of output; and iii) the pattern of growth.

In its simplest form, the argument is that a slower rate of population growth as through lower fertility will have a favourable impact on labour absorption since (as explained in a previous section) it allows not only higher per capita income levels but also the saving of a larger proportion of national income which can be devoted to productive investments. A higher rate of capital accumulation, other things being equal, will mean the absorption of a larger number of persons in productive employment. But in evaluating the role of population growth in this context, some attention should be paid to the impact of more rapid capital accumulation on technological and productivity changes.⁷³ Higher income levels may lead to significant increases in productivity both in the medium and long run caused by a better-fed, trained and educated labour-force and by greater capital intensity in the production process. Higher income levels with lower fertility may also influence technological changes which may not be employment-favouring.

It was also noted earlier that changes in the composition of the population would lead to changes in the demand for various goods and services in the economy. But the production of different goods and services would employ different labour or capital intensities. For example, a young

⁷³ Haram P. Ghai, "Population Growth, Labour Absorption and Income Distribution" in United Nations, *The Population Debate Dimensions and Perspectives*. Papers of the World Population Conference Volume I. Bucharest 1974. p. 505.

population would normally mean that a significant part of output growth would have to be in terms of basic infrastructural facilities which tend to be capital rather than labour-intensive, and thus the employment-creation potential would be lower.

India. Finally, many authors have stressed that labour absorption in an economy is very much a function of the pattern of economic growth. It is obvious that a development strategy that emphasizes aggregate growth as the prime objective of economic development (perhaps prompted by the concern for coping with high rates of population growth), that subscribes to the macro-economic or "trickle-down" theories and without sufficient regard for the distributional and employment consequences of development policies will have a labour absorption potential quite different from that which emphasizes employment as a priority goal. A fundamental issue involves the conflict of goals between increasing income and increasing employment.⁷⁴

While population growth implies in practice an automatic increase in the increase supply of the labour factor, it does not by itself create higher employment. In fact, in a developing country like Malaysia where deficiency of demand is not the major factor causing unemployment, rapid population and labour force growth are seen as further deteriorating the imbalance between the supply of and demand for labour. An increase in population unaccompanied by corresponding increases in other factors of production with which labour must work, or by downward adjustments in wages or by developments in productive technology, will tend to result in unemployment in urban areas and underemployment in the rural areas. In this context, several

⁷⁴ See Lim Lin Lean, "Income Distribution, Employment and Poverty in the Process of Economic Growth In West Malaysia 1957-1970." Ph.D. thesis submitted to the University of Malaya June 1978. p. 149.

issues can be considered for Malaysia:

- i) Open unemployment affects most seriously the most vulnerable population groups in the economy. The groups that are disadvantageously placed in terms of alternative employment opportunities are mainly women and Indians. But on the other hand, open unemployment can also be interpreted as a phenomenon related to those who choose not to "create" their own job opportunities as the self-employed in the informal sector and have higher ability and support to pursue particular job preferences (especially the younger population).
- ii) Open unemployment is predominantly an urban problem. The general inclination is to attribute the higher rates of urban unemployment to the migration of surplus labour from the rural areas into the towns, a concomitant phenomenon of the growth process. But the link is really not so simple. There is evidence in Malaysia of a lower rate of open unemployment among migrants than among the native urban population.⁷⁵ But of course migrants to urban areas may be going into sub-employment in the urban traditional or informal service sector. And to the extent that the inflow of additional job seekers into the urban areas are able to find work they would deprive the native urban labour force of some opportunities and place additional pressure on the urban areas.
- iii) Underemployment especially in the rural areas is not a simple problem of

⁷⁵ See Soon Lee Ying, "An Economic Analysis of Internal Migration In West Malaysia with Special Reference to Economic Imbalances and Regional Development". M.Ec. thesis submitted to the University of Malaya, November 1974, pp. 187 and 196. See also R. Chander and H. Singh, "Internal Migration and Its Role in National Development". Paper presented at the Fourth Malaysian Economic Convention, Kuala Lumpur. May 1977. Table V.

See P.R. Van der Mijden, "Industrialization in Malaysia: A 'nang Micro-Study". Houston: Rice University Program of Development Studies, Paper No. 45. Winter 1973. pp. 8, 16, 31.

too many people on too little land i.e. it cannot be measured simply by computing the number of people per unit of land. The crux of the problem is one of low productivity and low income from work. But these are issues related not directly to population and the lack of natural resources as to the quality of land, water supply and climate, production and marketing structure, systems of land tenure, credit arrangements, institutional rigidities, etc.

- iv) Theoretically, the adjustment between labour supply and demand would be possible under conditions of wage flexibility. But wages in Malaysia are high relative to those in other South-East Asian countries as they have been influenced to some extent by wages in the high productivity export sector. Modern sector wages have not only been insulated from the effects of a growing labour surplus but have been increasing steadily.
- v) It is not the rapidly increasing labour force alone that poses a problem. What should be noted is that while there is an abundance of unskilled labour, skilled labour and managerial personnel are scarce. The lack of skilled labour represents a very real constraint in Malaysian development.⁷⁶
- vi) While labour-intensive techniques appear attractive in the face of rapid population and labour force growth, planners will always face a conflict in that such techniques involve higher labour costs, imply a lower return per unit of capital and lead to greater consumption

⁷⁶A survey of foreign firms noted that one of the main problems in establishing themselves was the labour difficulties they faced particularly regarding trained workers and future expansion. Most of the firms stated that they found Malaysian workers trainable on the job but getting management staff particularly to fulfil racial requirements is a very real problem. See F.R. Van der Mehden, "Industrialization In Malaysia: A Penang Micro-Study". Houston: Rice University Program of Development Studies. Paper No. 45, Winter 1973. pp. 8, 16, 31.

since the wages from greater employment tend to be spent mainly on consumption; while capital-intensive techniques in contrast may give higher returns on capital and yield a larger surplus for re-investment which will accelerate subsequent economic growth.

3.4 Population and Structural Changes In the Economy

Demographic factors are considered major determinants of two concomitant phenomena of the development process - industrialization and urbanization. In common with other developing countries, the Malaysian government sees the pattern of development in terms of a changing economic structure with the agricultural share declining and the increasing importance of industries and services in the modern sector and a correspondingly increasing proportion of the population located in urban areas.

On the one hand, rapid population growth provides the reason or impetus for a development strategy based on an emphasis on industrialization. Industrialization has a key role as the veritable engine of growth and is seen as the most important potential source of increasing incomes which are so crucial in the context of the effects of population growth on income levels. Since population growth tends to be most serious in the rural agricultural sector, industrialization is also sought as a means of siphoning off the labour surplus into productive employment. The solution of course is not seen just in terms of structural changes from agriculture to industry or from rural to urban locations, it involves also shifts from less efficient to more efficient productive activities within the agricultural sector. In as far as towns and cities serve as focal points for industrialization, technological change, the literacy explosion and rapid social development, urbanization is part and parcel of the process of modernization.

On the other hand, rapid population growth in a developing country is seen by many writers as a hindrance to rapid industrialization. In as far as it depresses income levels, rapid population growth will tend to slow down capital accumulation and the expansion of markets for manufactured goods. The increases in population together with high income elasticities of demand for food at low levels of income also imply that large increases in the supply of agricultural commodities are required.

3.4.1 Population and Rural/Agricultural Development

In spite of the emphasis on industrialization, the Malaysian government has always recognized the importance of rural agricultural development for two main reasons both of which are linked to demographic factors. First, it is in the rural sector where most of the population is located, where population is growing most rapidly, which contains the bulk of manpower and which for a long time to come represents the major area of development efforts. Second, agricultural policy is aimed at diversifying the economy in an attempt to reduce the dependence on only a couple of primary commodities and the inherent instability of an open economy. A number of writers hold that the degree of specialization of an economy depends to a great extent on the size of its population. So also has the importance of population size for determining the foreign trade ratio been confirmed for both economically more developed or economically less developed countries.⁷⁷ The argument is that an economy with a smaller number of inhabitants which tends to be positively associated with the size of the territory is, as a

⁷⁷United Nations, *the Determinants and Consequences of Population Trends*. Volume I. op. cit. p. 486.

rule, characterized by a greater concentration on a limited range of products. A number of studies have also confirmed that the extent to which an economy depends on international trade is to a considerable extent dependent on the size of its population.

It is obvious that rural development is, to a large extent, seen in terms of the need to ameliorate the effects of rapid population growth. In the sector thought of as depending most heavily on physical resources which are normally taken to be of finite supply, the linkage between population growth and productivity is based on the law of diminishing returns, the cornerstone of Malthusian and Classical economic theory. The argument is that especially in the more densely populated regions, the quantity and quality of land being more or less fixed, after a certain point further population growth will give rise to a shortage of cultivable land. As the possibilities of a far-reaching division of labour and of technological progress are limited, returns to labour will decrease causing the marginal productivity to fall to a very low level or even to zero. The Malaysian experience, however, has been one of increased physical and sustained expansion in agricultural output, although at a slower rate compared to the other sectors. Various studies have shown that physical productivity i.e. output per acre or per worker in both rubber and padi have increased significantly.⁷⁸ But on the one hand, the increase in productivity implies

⁷⁸See Tan Bock Thiam, "Agricultural Subsidy and Price Support Policies", Paper presented at the Second Malaysian Economic Association Convention Kuala Lumpur: March 1975, p. 11, and E.L.H. Lee, "Income Distribution In A Developing Economy: A Case Study of West Malaysia". Ph.D thesis submitted to the University of Oxford, 1975. pp. 187, 194.

lower labour absorption at the margin in relation to output growth thus compounding the employment problem in rural areas. On the other hand, increases in physical productivity have been outweighed by serious declines in prices of agricultural commodities so that the agricultural population was hard put to maintain its standard of living.

The idea of "rural overpopulation", "land shortage" and related "labour surplus" needs some clarification. While it is true that high population densities have complicated rural problems, the roots have to be traced to a high degree of concentration of land ownership, insecurity of tenure, the effects of the Muslim law of inheritance, bureaucratic red tape in processing land applications, reluctance to implement land reform, etc. In other words, it is not just a question of increasing population pressures but also of inefficiencies in the use of land itself. If these unfavourable conditions could be removed, the effective land-man ratio would be higher without any real change in the amount of physical resources.

Structural changes taking place within the agricultural sector itself have contributed to the labour surplus problem in rural areas. Employment in the estate sector has fallen not only in relative but also in absolute terms. The structural changes of importance in the estate sector have been the reduction in acreage under rubber, the increase in productivity, the increase in the area planted with palm oil which tends to be less labour-intensive than rubber.

It is also important to note that the notion of "labour surplus" has to take into account many other factors. For example, the effects of seasonality in agriculture are important. While at certain times of the year, the underutilization of labour may be serious, it has also been found

that during agricultural peak periods, the normal labour supply may be insufficient so that women, children and old folks not normally in the labour force may have to participate in work.

The important issue is not total population in the rural areas but the spatial distribution of the population. While it is true particularly in the more densely populated traditional smallholding areas that population pressures represent a serious problem, it is also true that Malaysia is still a land-surplus economy. The crux of the issue is the uneven geographical distribution of the population. In this context, the relationship between demographic factors, the opening up of new land schemes and regional development can be examined.

In the first place, the *raison d'être* for the emphasis on land development is to accommodate the landless and near landless, to relieve the pressure of population on existing agricultural land, and to create productive employment. Land development by moving people from land shortage/labour surplus areas to land surplus areas within the rural sector is supposed to improve the factors proportion and to decelerate the pace of rural-urban migration which is part of the structural change in a developing economy.

Second, regional plans are seen as necessary for balanced development of the economy. There are still areas with large economic potential but to develop these will require substantial numbers of people. The redistribution of population to these new areas is a precondition for more efficient exploitation of land and other resources, for the reduction of transportation costs, for the establishment of local markets, etc. It is noted in Malaysia that "the full development of the nation's vast natural resources will require substantial

movements of labour to the better endowed regions".⁷⁹ The interesting phenomenon in Malaysia is that of the migration has been from one rural location to another rather than from rural to urban areas. Rural-rural migration is mainly government-induced in terms of the attraction and selection of settlers to new land schemes.

Such redistribution of population can, however, have detrimental effects. The effects of outmigration from some villages are worth noting especially in connection with the issue of "over-population" earlier discussed. Although the documentation is limited, there is increasing evidence that mass exodus can literally emasculate communities and accelerate economic obsolescence in several ways. Rural depopulation can be a particularly serious problem when we consider that outmigration usually draws away the more valuable and productive population i.e. the young, the more educated and the skilled while those left behind are generally the dependents - the very young, the old and the housewives who are under/uneducated, under/unskilled. Villages particularly in Perak and West Johore are already being left further behind in the development process because those who could have participated have left for other areas. The danger is also that with a labour force that is declining in quality, rural areas will become even less attractive to new industries. Prolonged and heavy outmigration, then, leaves behind those who are least able to cope with the unfavourable conditions that first led to depopulation. These people too tend to show a gradually reduced potential for mobility.

⁷⁹ Mid Term Review of the Second Malaysia Plan 1971-1975. Kuala Lumpur.: Government Press, 1973. pp. 18-19.

It should also not be taken to mean that Malaysia will always be a land-surplus economy and not have to be concerned about the population - land ratio. Already, FELDA, the major land development authority in the country is rethinking its policy of land development especially with regard to the size of land given to settlers because of the awareness that Malaysia may soon be running out of cultivable land to support her growing population.

Finally, the interactions between population factors and technological changes in the rural sector can be considered. The government has sponsored a Green Revolution aimed essentially at raising productivity and output. A significant part of the effort has been in terms of increasing the capital-labour ratio in agriculture through providing either free or at subsidized rates, irrigation and double cropping facilities, tractor services and other improved variable inputs including high-yielding seeds, quick-maturing varieties, fertilizers, pesticides, insecticides, etc. While this has led to higher production, such increases in productivity have in no way been dependent upon an increase in the agricultural labour force; on the contrary, the impact of mechanization has been labour-displacing.

3.4.2 Population and Industrialization

Planning industrial development is to a considerable extent conditioned by demographic factors. As pointed out earlier, there are those who argue that rapid population growth hinders rapid industrialization on the grounds that to the extent that it depresses incomes it will slow down capital accumulation and the expansion of markets for manufactured goods. Others would argue though that a larger population may represent a more attractive market for industrial goods especially in a country like Malaysia where

income levels are not depressingly low and where many consumer items are still imported. In fact, it is partly because Malaysia's population is small as a market in relation to the potential for industrial expansion that great encouragement has been given to export-oriented industries.

Among the demographic factors directly associated with the industrialization process, the occupational and geographical mobility of the population is of crucial importance. The redistribution of the population from predominantly rural agricultural to urban industrial areas and occupations is both a condition and a consequence of the development process. Geographical mobility is important in that industrialization and urbanization are closely linked to each other. For technological and organizational reasons, the concentration of workers in urban areas is a virtually necessary concomitant of the process of industrial change and the changes in conditions and standards of living; the diversification of the demand and so forth are, in turn, directly related to the urban way of life.⁸⁰

Some models have stressed that industrialization in the modern sector of the economy will lead to a process of adjustment in the imbalance between the supply of and demand for labour. The earlier Lewis-Fei-Ranis Model,⁸¹ probably the best known of employment models relating to a labour-surplus economy, for example, states that surplus labour in the traditional

⁸⁰United Nations, The Determinants and Consequences of Population Trends, Volume I. op. cit. p. 606.

⁸¹W.A. Lewis, "Economic Development with Unlimited Supplies of Labour," Manchester School, Vol. 22, May 1954; and J.H.C. Fei and G. Ranis, Development of the Labour Surplus Economy: Theory and Policy Homewood, Ill. Irwin, 1964.

agricultural sector will be transferred into the industrial modern sector at a rate determined by the rate of reinvestment of the profit surplus. Adjustment is supposed to be more or less automatic in that unemployment is supposed, after some time lag, to cure itself with the absorption of surplus labour into the industrial sector in which growth tends to be self-sustained. But the underlying assumptions are not pertinent in the Malaysian context - that the supply of labour from the traditional to the modern sector is perfectly elastic and that the level of wages in the industrial sector is constant, being a fixed multiple of the subsistence wage in the traditional sector. Later writers⁸² have shown that adjustment of the employment problem through population or labour transfers is not automatic; underlying conditions could perpetuate unemployment and widen the gap between the supply of and the demand for labour. Among these conditions, it has been pointed out that rapid population growth poses an additional problem in that it continuously replenishes the labour surplus thus putting additional pressure on the industrial sector to create productive employment.

While the long term employment aspect of planning for industrial development is to provide productive work for the increasing labour force, and to favour labour-intensive development which would create the highest employment potential, it has come to be generally accepted that industrial development does not require much labour and has limited employment

3.4.3 Population and Urbanization

⁸² See eg. J.R. Harris and M.P. Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis", American Economic Review, Vol. 60 No. 1, March 1970; and H.T. Cshima, "Labour Force Explosion and the Labour Intensive Sector In Asian Growth", Economic Development and Cultural Change. Vol. 19 No.1, January 1971.

prospects.⁸³ More correctly, in the Malaysian context, the small base of the manufacturing sector has meant that in spite of its high rate of growth, the total number of jobs created has been small. In as far as industrialization has not been able to keep pace with rural-urban migration there would tend to be shift from under-employment in the rural areas to growing open unemployment in the urban areas. Recognizing the employment problems arising in the course of an industrialization programme due to high population growth and an excessive inflow of workers into the non-agricultural labour market, many people have emphasized the need to focus attention on other possibilities of expanding job opportunities such as setting up cottage and small-scale industries which are more labour-intensive in the rural areas, and other special rural works programmes which would help to check an unduly large migration to the towns.

In viewing the mobility of the population and its adaptability to structural changes taking place in the economy, the age factor is an important consideration. In this context, Malaysia's growing and relatively young population can be considered a positive factor. It is generally found that younger workers have higher geographical and occupational mobility; young workers entering the labour force make a greater contribution to the readjustment of labour between industries than that which results from the transfer of adults and aged workers. Older workers tend to be less adaptable, less able to change occupations and more reluctant to move to new places.

3.4.3 Population and Urbanization

The relationship between urbanization, industrialization,

⁸⁴ K. Davis, 'Asian Cities: Problems and Prospects', *Population and Development Review*, 1975, p. 73.

⁸³ United Nations, Determinants and Consequences of Population Trends Vol. I. op. cit. p. 605.

economic growth and population is explained by the Western model which is based on the historical experience of industrialized countries in terms of migration from rural areas as the primary demographic process of adjustment to meet the demand for labour created by the concentration of economic progress through industrialization in the towns which themselves experience relatively low rates of natural increase. The applicability of this basic model of economically-induced urbanization to Third World countries has been much debated. But even the "over-urbanization" thesis (which recognizes that urbanization can occur independently of the growth of industries and that it is the lack of economic progress and poverty in the overcrowded rural areas that push people into rapidly growing cities) makes the same assumption that the structural changes in a developing economy involve rapid urban growth (in terms of the percentage change in urban population) accompanied by changes in the level of urbanization (in terms of the percentage point change in the ratio of the urban population to total population).

The Malaysian experience of rapid urban growth but a slow pace of urbanization inconjunction with significant economic growth does not conform to the pattern suggested by either model. This is not to suggest though that the Malaysian case is unique.

"The truth is that neither by past standards nor by present ones is the rate of urbanization in Asia spectacular".⁸⁴ Many people now consider the fear of uncontrolled massive rural-urban migration a chimera. The majority of population flows in Malaysia has infact been to rural areas. A high rate of natural increase appears to be the major component of urban growth.

⁸⁴ K. Davis, 'Asian Cities: Problems and Prospects'; Population and Development Review, 1975. p. 73.

⁸⁵ Inspite of being the fastest growing sector in the economy, the manufacturing sector only created 139,000 new jobs between 1975-78, not all which were located in towns. It accounted for only 11.11% of total

⁸⁶ Third Malaysia Plan 1976-1980 on. cit. p. 149

The explanation for the links between urbanization, population movements and development is that either the attraction of the cities has not been so strong or the conditions in rural areas have not been so terrible as to significantly alter the rural-urban proportions in total population. The strategy of redistributing population from overcrowded areas into new land schemes and increasing productivity and incomes for the insitu areas appears to have provided the rural people with a viable alternative to moving to the towns. While the operation of push factors has been weakened by the improved conditions in the rural areas, the pull factors do not seem to have been so strong either. It is not that the lure of industrial employment opportunities has not been strong; economic factors will obviously loom large in any decision to move to the towns by rural dwellers beset by poverty and underemployment and aware of the earnings gap between the agricultural sector and the modern industrial sector. But, as noted earlier, the absolute number of jobs created in manufacturing has been relatively small because of the small initial base.⁸⁵ The policy of encouraging the dispersal of industries and the growth of small-scale industries in the rural areas has also meant that employment opportunities have not been sufficient to pull large numbers of the rural population into urban areas. Or perhaps as noted in the Third Malaysia Plan, "the high level of skills required for employment have made it difficult for migrants from rural areas to find suitable occupations"⁸⁶ It could also be that the

⁸⁵ In spite of being the fastest growing sector in the economy, the manufacturing sector only created 139,000 new jobs between 1975-78, not all of which were located in towns. It accounted for only 13.1% of total employment as against the agricultural share of 43.9% in 1978.

⁸⁶ Third Malaysia Plan 1976-1980 op. cit. p. 149

high rates of natural increase in the urban areas themselves have been an important source of the necessary labour for the growing industrial enterprises.

Although the "over-urbanization" thesis does not apply to the present situation in Malaysia, this does not imply that there is no cause for concern. Already it is felt that without proper planning, "the nation will soon face the problems of wide-spread slums and pockets of poverty within its major cities and towns".⁸⁷ Some undesirable externalities are the political dangers inherent in the existence of masses of young urban unemployed, the burden of providing adequate infrastructure in the towns, together with air pollution and traffic congestion. As discussed earlier, migration of surplus labour from the rural areas into the towns would also compound the problems of urban unemployment. That urban open unemployment rates are not only higher but have risen faster than rural unemployment rates appears symptomatic of the increasing pressure of job seekers in the urban areas. Although it was noted that "urban migrants had an average unemployment rate 25% or more below the average rate among non-migrants",⁸⁸ it must be remembered that the migrant problem may be serious than indicated by the rate of unemployment among them if migrants are infact going into subemployment in the urban traditional or informal sector or if the amount of return migration among those unable to find or "create" urban jobs is significant.

⁸⁷ Ibid. p. 97

⁸⁸ Soon Lee Ying, op. cit. pp. 187 and 196.