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SOME ASPECTS OF REGIONAL GROWTH AND DEVELOPMENT THEORIES

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SINOPSIS

Pengajian tentang ekonomi 'regional' adalah satu fenomena yang agak baharu. Bolehlah dikatakan bahawa ekonomi regional merupakan satu disiplin yang telah diabaikan. Bagaimanapun, baharu-baharu ini pengajian dan penyelidikan dalam hal-hal ekonomi regional telah mendapat sambutan hangat di negara-negara maju. Sambutan yang sama belum lagi dialami di negara-negara sedang membangun. Kebanyakan pengajian dan penyelidikan di negara-negara membangun masih lagi dihubungkan dengan tujuan-tujuan dan analisa-analisa pembangunan nasional. Tetapi ada bukti-bukti yang menunjukkan bahawa kebanyakan masalah-masalah pembangunan yang dihadapi oleh negara-negara sedang membangun berpunca dari dan berkait rapat dengan masalah-masalah ekonomi regional. Maka makalah ini ditulis berasaskan pendapat tersebut. Makalah ini akan mencuba meninjau beberapa aspek teori-teori pertumbuhan dan pembangunan ekonomi regional.

SYNOPSIS

The study of regional economics is a recent phenomenon. Even though regional science has been generally accepted about twenty years ago, regional economics was still a neglected subject at that time. However, only in the past few years that study and research into the various theoretical and empirical aspects of regional economics are getting greater attention in most developed countries. This situation, however, has not yet occurred in most underdeveloped countries. Much of the economic development studies in underdeveloped countries are related to the overall national development goals and problems of those countries. But many studies seem to show that most of the development problems faced by many underdeveloped countries are a reflection of regional economic problems. It is with this point of view that this article is written. It is a 'mini survey' of some aspects of regional development and growth theories which help to explain the spatial distribution of economic activities.

The Complexity of Regional Economics

There is no single theory of regional development that commands uni-

versal assent.¹ In most of the regional development literature, theories of regional growth and development have been looked at largely in terms of the different approaches and conceptions than as a single unified or general concise theory.² Reasons for this can be attributed mainly to the newness of the subject, regional economics, itself. Spatial aspects in general and regional economics in particular has long been neglected by most disciplines including economics. It is only recently that regional analysis including regional economic analysis has been considered at in more detail and with more interest.³ Therefore regional economics can still be considered to be in an embryonic stage, and as such its theoretical framework is rather loose.⁴

Lack of any systematic approach to regional development theories can also be attributed to its multi-disciplinary character. The complexity of the process of regional development it necessarily entails an inter-disciplinary approach which includes geography, sociology, demography and economics. These disciplines when grouped together to explain regional phenomena are sometimes known as regional analysis or regional science. Regional economics is thus only a part of regional science or regional analysis.⁵ The effect of incorporating other disciplines into regional analysis has made regional development theories more complex,⁶ and this complexity in turn is reflected in crudeness, overlapping and unrealistic nature of the theories of regional growth in the form that they were originally presented.⁷

Regional growth and development theories

Discussion of regional development theories in most regional economics

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- 1 See J. Friedman, and W. Alonso, *Regional Development and Planning: A Reader*, 1964, M.I.T. Press, Massachusetts, p. 209. Some regional analysts including J. Hilhorst (in his article, 'Regional Development theory, in Development centre of the organisation for Economic co-operation', 1969, Paris, *Multi-disciplinary Aspects of Regional Development*) has stated that there is no such thing as regional development theory.
 - 2 Perloff and Associates in their book, *Regions Resources and Economic Growth*, Lincoln 1960, have suggested that it is more accurate to refer to theories of regional growth as concepts and approaches to regional growth.
 - 3 The neglect of regional economics has been expressed by many regional analysts including Friedman and Alonso, Gavin Mc Crone, H. W. Richardson and Meyer. Recent interest in regional economic analysis and other forms of regional analysis (sometimes grouped together to be known as just regional analysis or regional science) has been started in the 1950's especially with the founding of the regional science association in the United States. The association too has initiated a journal for the platform of regional analysis discussion, called *Papers and Proceedings of the Regional Science Association*. The vol. I of this paper and proceedings published 1955
 - 4 H.W. Richardson, *Regional Economics*, 1969, London, p. 2.
 - 5 See H.W. Richardson, *Elements of Regional Economics*, Penguin 1969, p. 9.
 - 6 It is because of this complexity that one has to give some consideration and understanding when trying to criticise the various approaches of regional development theories.
 - 7 See Gavin McCrone, *Regional Policy in Britain*, Allen and Unwin, London, 1969.

literatures is largely represented by a selection of articles of different aspects of the spatial differentiation of economic growth.⁸ In Alonso and Friedman the approach to theories of regional development is represented by articles on the role of natural resources, the influence of labour mobility, function of cities and lastly the response of the agricultural sector to urbanisation.⁹ In his survey of regional economics, Meyer has not stated what constitutes the theories of regional development.¹⁰ Horst Siebert in his book, *Regional Economic Growth*, considers regional economic growth a part of the problems of regional economics.¹¹ But he too does not amplify or explain this assertion. Friedman on the other hand in his book, *Regional Development Policy*, while not showing what constitutes regional development theory does try to explain the process of regional development in terms of what he considers to be the centre-periphery model.¹² His model was later re-developed to include other variables by Hilhorst.¹³ Like Friedman, Hilhorst forwards various propositions which shows the stages in the process of regional development.

There have been other regional analysts who attempt to put the various concepts and approaches of regional growth theories in a more systematic and precise manner. They are possibly Perloff and Associates,¹⁴ H.W. Richardson¹⁵ and Gavin McCrone.¹⁶ Richardson in his book, *Regional Economics*, considers the theories of regional growth to consist of the three main models of the export base, sector approach, and industrial structure and regional growth.¹⁷ Gavin McCrone's approach to the issues of regional problems and development is in terms of what economic theory has to say on regional questions. He considers that regional questions can be elucidated by economic theory in three respects. They are the micro-economic aspect of industrial location, the macro economic aspect of the spatial distribution of economic activities and the dynamic factors which cause some regions of an economy to grow while others contract or stagnate.

8 See Alonso and Friedman, *op cit.*

See L. Needleman, *Regional Analysis* (Penguin Modern economics), London, 1968.
See H.W. Richardson, *Regional Economics, A Reader*, Macmillan, Glasgow, 1970.

9 Alonso and Friedman, *op. cit.* p. 209. Most of these articles explicitly and implicitly reflect the development of the various theories, such as that of the export theory of regional growth proposed by North in his article, 'Location theory and Regional economic growth'.

10 See J.R. Meyer, 'Regional Economics: A Survey' in L. Needleman, *op. cit.* p. 19-60.

11 See Horst Siebert, *Regional Economic Growth*, International Series, Pennsylvania, 1969.

12 John Friedman, *Regional Development Policy: A Case Study of Venezuela*, M.I.T. Press, Massachusetts, 1966.

13 See Jos. G.M. Hilhorst, *Regional Planning*, Rotterdam University Press, 1971.

14 Perloff and Associates, *op. cit.*

15 H.W. Richardson, *Regional Economics*, Camelot Press, London, 1969.

16 Gavin McCrone, *op. cit.* p.p. 49-90.

17 With respect to industrial structure and regional growth, Richardson has included the various findings of empirical study of Perloff and Associates, *Regions resources and economic growth*.

It is clear therefore that there are a number of approaches to the discussion of what comprises theories of regional growth. All the theories that have been discussed have validity, but the approach that is more systematic and precise is possibly that of Gavin McCrone.

Theories of Location

Any discussion of regional development necessarily entails some observations of the various theories of location.¹⁸ They are not important in themselves in explaining the complex process of regional development but useful in helping to understand the various models and approaches of regional growth theories. Broadly, locational theories can be divided into two aspects. One, theories which consider only the locational factors of one firm. Two, these theories that help to explain the spatial distribution of the economic activities.

The first important work on the economics of location is that of Von Thünen in 1826. He was mainly concerned to illustrate how location affected types of agricultural production thus give rise zones of common agricultural production. Given the market of the agricultural produce, he demonstrated that distance from the market would determine what agricultural products were produced. Other assumptions he made included that of similarity in the quality of soil and the state of technical progress. He concluded that those products where transport costs were relatively heavy in relation to total value would be produced near the market and those where transport cost were less important could be brought from farther afield. He then developed his notion of rings surrounding each market showing how each type of agricultural product would be located.

Von Thünen's theory suffers from many weaknesses. Firstly the various assumptions made are unrealistic. He was only interested in the supply side of the market without considering the demand side. Von Thünen was only interested in the type of agriculture rather than factors that determine the location of industry. As such, sometimes his theory is not thought to constitute a theory of location.¹⁹ It offers no guidance at all to the factors which determine the general distribution of economic activities over space. However its main relevance was to set the pace in the discussion of location in general, and the significance of transport cost in location, in particular.

The first systematic approach in discussing industrial location theory is that of Alfred Weber.²⁰ Central to an understanding of his idea is the

18 Most regional analysts consider locational theories as the basic component of their approaches and models of regional development, such as Perloff, *op. cit.*, Friedman *op. cit.* and Hilhorst, *op. cit.*

19 See Michael Chisholm, *Rural Settlement and Land Use*, Hutchinson University Press, London, 1972, p. 20.

20 C.J. Frederick, *Alfred Weber's Theory of Location and Industries*, Chicago, 1950.

notion that industry will locate itself at the point of least cost. He considered inside his heterogeneous environment manufacturer would locate industries at the point of least cost and that they would do this in response to three locational factors. These factors were transport, labour and agglomeration and deglomeration. With the assumption that transport cost increase directly with distance he suggested that industries which produced heavy and bulky goods would locate near their source of raw materials. On the other hand if an industry had a high ratio of labour cost to the combined weights of material inputs and product outputs (this was what Weber termed his labour coefficient), then labour would tend to attract the industry to a location other than the movement minimisation one, provided the savings which resulted in the labour cost per item of production exceeded the additional transport costs which would result from marketing the product. Weber also added that manufacturers might also deviate from the minimum transport and labour cost location and develop their industries at a third minimum point if economies in costs could be achieved by agglomeration and deglomeration.

Though Weber talked of industrial location he was in fact considering the locational decision of only one firm. As such his theory is inadequate to explain the macro-economic aspects of industrial location decisions and its effects. Weber's theory like Von Thunens suffers from unrealistic assumptions. He assumed that the demand side of the firm is given and that the location decision is only from the supply side. This is not quite true for quite a number of industries the locational decision depends very much on the markets. Moreover his proposition that transport cost varies directly with distance too is also not very realistic. For in many cases as the distance increases there is the possibility that the unit cost of transportation may decline. His concept of agglomeration was by far the most important contribution but he did not elaborate on it. In fact in the real world the tendency to agglomerate and to derive benefit from it has been a very influential factor in the location of industries.²¹

Even though Weber's industrial location theory might seem then to be divorced from the real world, it does help to throw some light on the importance of some locational factors such as labour, and transportation cost and raw materials. Moreover his idea of the role of agglomeration and deglomeration was to lead to a more useful discussion and analysis by subsequent writers.²²

Basically, Von Thünen's and Weber's theory were concerned as has been earlier observed only the aspects of supply neglecting that of

21 See Hoover E.M. (1957) *The Location of Economic Activities*, McGraw Hill, and see W. Isard, *Industrial Complex Analysis and Regional Development*, M.I.T. Press, 1959.

22 See Walter Isard, Hosch, and Hoover, Gavin McCrone and Alonso and Fredman, *op. cit.*

demand. However later studies on location by Losch Hoover,²³ Isaac and Greenhut attempted to remedy the various deficiencies of Von Thünen's and Weber's theory. Losch emphasised that the theory of location of the firm must be based on profit maximisation in which both cost and revenue factors would be considered. The optimum location may be sited neither where costs are at a minimum nor where gross revenue is at a maximum, but where the differences between these two, net revenue, is maximised.²⁴ In this respect Losch is considering not only supply but demand, in the locational decisions of a firm. Greenhut has also attempted to give demand and supply factors in determining the location of a firm. He even suggested that non economic factors such as personal consideration by the owners of the firm do affect locational decisions.²⁵ This has in fact been very true in cases of small companies. For instance it can be said that most original motor car companies were located on the basis of personal choice of the area by the owners of the company, such as Morris in Oxford and Ford in Detroit.²⁶ Similarly, Hoover's approach to plant location suggests demand determinants as well as cost factors.²⁷

All the locational theories including the various developments of Weber's theory by Hoover, Losch and Greenhut tend to consider the factors that determine the location of one firm. As such their relevance to the process of regional development and its related aspects is rather minimal. However some empirical studies on location of various firms and industries do throw some light on the significance of certain factors for the location of specific industries. This approach may be useful in attempting to understand some aspects of locational decisions and in its effects on regional problems and developments. For instance, the works of S.R. Dennison²⁸ in England and E.M. Hoover²⁹ in the United States has shown the significance of locational changes in its effects on regional problems. In his analysis of Pittsburg in America, Hoover focussed on the case of matured industrial urban regions threatened by stagnation where unemployment was high and immigration was heavy. He considered this as the problem of arrested growth. This arrested growth may be due to the region's original development dependent largely on a few industries which had themselves ceased to grow or begun to decline.³⁰

23 See Gavin Macrone, *op. cit.*, p. 53.

24 *Ibid.*, p. 53.

25 This can be attributed to the fact that they were born at the place of location or were residing there.

26 See Melvin L. Greenhut, *Plant Location in Theory and in Practice*, University of North Carolina Press 1956.

27 *Ibid.*, p. 17.

28 See S.R. Dennison, *Industrial Location and Depressed Regions*, Oxford University Press, 1950, London.

29 See E.M. Hoover, *Location of Economic Activities*, McGraw Hill, 1948.

30 *Ibid.*, p. 12-26.

Spatial distribution of economic activities

So far we have only discussed theories which have attempted to explain the locational factors of one firm. This has not given very much understanding to the aspects of spatial distribution of economic activities. Theories which have attempted to show how economic activities come to be spread over the available geographical space are those evolved by Walter Christaller and Francois Perroux.³¹ Walter Christaller's theory was called 'Central Place Theory' which was written in 1930's.³² The main aim of his theory is to show the role of towns and cities as central places—i.e. the centre concerned with the provision of services to its hinterland area called the complementary region. The services include administration finance and other similar services, as well as those of retail and wholesale trades. These services can be ranked into higher and lower orders depending on the demand threshold (i.e. the minimum viable level required to support the services and this is defined in terms of population and/or income) and the range (i.e. the outer limits of the market area for each service). The range over which a service is supplied, is affected by many factors but its main determinant is economic distance, i.e. geographical distance converted into freight cost and other monetary costs involved in transportation. These two factors of demand threshold and the range will determine the number and size of the central places supplying each service, and hence a central place hierarchy develops. Several central places and their complementary regions will be included within the market areas of larger centres.

Basically it can be said that the central place theory attempts to postulate the model of urban growth and the development of an urban hierarchy. The theory also stresses the interdependence between urban centres and their surrounding regions. In its basic attempt to show a model of urban growth, it fails because it does not offer a complete explanation. Christaller only considered the role of services as the components of growth of urban centres. This is rather limited for in reality it is more than services which are responsible for the growth of urban areas.³³ Apart from service function in the evolution and growth of urban centres there are other aspects of manufacturing and the like. There are other urban centres that have grown because of a location that links to the outside world. This is very true with the development of most urban centres of most developing countries, which have been mainly due to the development of trade with the

31 This is not to say that there is no other economist writing on this subject. But we are only concentrating on Christaller and Perroux because of their relevance to the article.

32 Translation (by C.W. Baskin) of Christaller's, *Central Places in Southern Germany*, 1966.

33 See J.H. Johnston, *Urban Geography*, 1969.

developed countries. And in some instances the urban centres may not have any form of relationship at all with its peripheral areas or region. Other determinants of the urban centres can be due to the availability of localised physical resources and also the chance element, which is often overlooked because it is difficult to assess.³⁴ And in many instances urban growth is the result of the expansion of the manufacturing within the boundaries of the urban centres themselves. And even though the expansion of the centres is due to services it may be that these services are supplied to the centre itself rather than the complementary regions. This is quite true in metropolitan cities. In fact this is also applicable to urban and city centre of developing countries. For instance in most developing countries the services provided in the urban centres are mainly provided within the areas of the urban areas themselves. This is in relation to the provision of services to the people residing in the urban areas and also to the various industries which are located in the urban areas. Implicitly this also reflects the economic, industrial and demographic concentration in the urban areas. And indirectly it also indicates the lack of intergration between the urban centres and its peripheral areas. Lastly, central place theory also underplays the contribution which migration may make to urban growth.³⁵

For these reasons, central place theory is inadequate for a complete understanding of the process of urban growth and the evolution of the spatial urban heirachy. However it has relevance in its application in the poles of growth theories, and even in the various centre-periphery models. Off course it has not been stated the central place theory is incorporated into these growth poles and the centre-periphery models.³⁶

The growth point concept

Another theory which may used to explain spatial distribution of economic activity is based on the concept of the growth point.³⁷ A basic notion behind the growth point concept is that economic activities tend to

34 *Ibid*, p. 76.

35 This migration can be that of internal and international.

36 For instance in the growth poles theory the basic idea is that economic activity within a region tends to agglomerate around a small number of focal points. And a natural growth point combines the characteristic of a high order central place and a potential site because of agglomeration economics created hers. With respect to the centre-periphery models especially that within a region, this is in fact an extension of the central place theory to include more than the services activities. In that centre and periphery model of Hilhorst (in *Multipiplinary Aspects of Regional Development* of O.E.C.D.) he attempts to synthesice regional development theories to include central place theory and Perroux growth poles theory.

37 Generally there is nothing new about growth point concept, it is in fact an elaboration of external economies which goes back a very long way. But the form of its development by Perroux and others, however is original and it focuses attention on aspects of the idea which might otherwise have been overlooked.

agglomerate around certain focal.³⁸ Broadly, growth point concept is a sub-regional phenomena but sometimes economists tend to consider it in terms of growth region and leading region, especially when it relate to the growth points concept in planning. The centre of the sub-region usually comprises the growth point, while the area within the border is its zone of influence.³⁹ Growth poles are a set of expanding industries located in an urban area and inducing further development of economic activities throughout its zone of influence.

The main factor in the economic expansion of this sub-region or region is due to the interaction of the various key industries which form the nucleus of the growth poles. These key industries are sometimes referred to as 'propulsive industries'. They have some similar characteristics to that of Isard's "industrial complex" in that they have strong technical inter-relationship and agglomeration economies. For instance propulsive industries have strong multiplier effects and substantial locational and functional linkages.

Generally, much of the idea of the growth pole concept has been used in regional development planning, because of its promising potential for the development of a particular area and or region. France, has been the country that has utilised this concept in its effort to bring growth in backward and lagging regions.⁴⁰ It has also been used indirectly to disperse industries from the Paris Metropolitan region to other selected 'growth areas'. The problem in using the growth poles concept in planning is related to the question of choosing the right set of propulsive industries and the area for location. In many instances the choice of the propulsive industries may depend very much on economic and technical grounds. But this may not be so with respect to location. Political and social considerations sometimes do play a significant role.

In underdeveloped countries too some aspects of the growth points concept have been used with respect to industrial development planning. This relates not so much to the utilisation or propulsive industries but in the development of big industrial estates which can accomodate various kinds of industries which may have locational and functional linkages. The basic notion of this planned industrial estate scheme is similar to that of the growth points concept in the sense that it tends to stress the benefit of agglomeration economies and locational and functional linkages. But the problem of the establishment of industrial estates in developing countries is that it tends to create greater regional and intra-regional imbalance.⁴¹

38 See H.W. Richardson, *op. cit.*, p. 416.

39 This is in a way similar to that Structure of Complementary regim of the Central place theory.

40 See M. Hansen, *Growth Regional Planning*, Paris 1963.

41 The effect of establishing industrial estates in certain areas and regions is said to

This is so because most of these industrial estates tend to be located in the developed areas of the developed regions instead of the areas of under-developed regions.

Moreover the growth point analysis involves the hypothesis that income can be maximised in the growth area as a whole by concentrating development at growth points rather than spreading it thinly over the whole region. This argument is used to justify disproportionate allocations of public investment for infrastructure purposes at the growth point itself. This growth technique inevitably implies structural and sectoral imbalance which may cause inter and intra regional imbalance. When the propulsive industries are established in a particular area, growth is induced to that area. While at the same time, the zone of influence of the area receives the spill over effect of the growth impetus, such as supplying the raw materials and labour to the propulsive industries.⁴² But imbalance of growth between the area and its zone of influence will occur due to the fact that the growth of the zone of influence is only secondary to that of the growth of the selected area. And if several growth points are located in a particular region, the influence of these growth points may not be felt equally throughout the whole region: as such this may create intra-regional imbalance of economic growth. But even given this intra-regional imbalance, the region's growth as a whole will be increased by the presence of the growth points.⁴³ And if at the same time there are other underdeveloped regions in the country which do not benefit from this development strategy then for the country as a whole there will be problem of regional imbalance.⁴⁴ The problem of regional imbalance will be aggravated if the growth points are located in the developed region, given the presence already of regional imbalance in the country.⁴⁵

In a country where there are natural growth poles present in certain regions, this will be a possible explanation of any occurrences of intra and inter regional disparity. It has earlier been observed that the existence of growth points or poles must involve a certain degree of structural imbalance over a region and between regions. In many instances the presence of growth poles in a region may also take the role of the export base of that region. This is of course with the assumption that the region has trading relationships with other regions of the country and other countries. In this

cause inter-regional, intra-regional imbalance and also to cause centralisation and concentration of economic and industrial activities in some developing countries.

42 By definition propulsive industries utilise much of their raw materials obtained from within the border of the zone of influence.

43 See H.W. Richardson, *op. cit.*, p. 104-106.

44 This is one of the defects of most development strategies in many under-developed countries.

45 Again this applies to most under-developed countries, especially with respect to Metropolisation Process of economic and industrial activities see United Nations, *Economic Commission for Latin America, 1977.*

situation the propulsive industries at the growth point are the export industries, and as such growth point theory implicitly draws on some aspects of the export-base model of regional growth.⁴⁶ There is also a certain parallelism between the relationship of central place to its complementary region and between the growth point and its zone of influence. In fact growth points are high ranking central places. Growth points functions are not dissimilar to those of central places, except the central place theory only deal with the services function whereas growth points theory is concerned with far more than just supplying services to its complementary region.

The growth point concept has been utilised with other aspects of regional development into some form of centre-periphery model. One instance of this is the approach of the theory of regional development by Hilhorst. He attempted to synthesise a theory of regional development to base on the one hand on some elements of Perrou's Theory of poles of growth and on the other on the recognition of the importance of excess to information for effective decision making.⁴⁷ Similarly one of Friedman's propositions of regional economic growth includes some of the elements of the growth point concept.⁴⁸ It would be easier to understand the usefulness of the growth point concept when one is discussing the centre-periphery model itself.

Export base model

The export base model explains regional growth by hypothesing that the factor initiating growth and determining its extent is the export base.⁴⁹ An increase in the export base, a concept denoting collectively all the exportable goods and services of a region, will result in the expansion of other activities. The presumption is therefore that all non-export economic activities not for export especially the regions trade and service activities are induced by the expansion or decline of the export industries. This linkage between the expansion of the export industries and that of the other activities works through the multiplier process similar in principle to the familiar investment multiplier and foreign trade multiplier in national income models.

Central to the export base model is the distinction between the export industries and the other activities. The export industries constitute the economic base of a particular region. They are directly involved in the

46 See H.W. Richardson, *op. cit.*, p. 106.

47 Jos G.M. Hilhorst, *op. cit.*, p. 27.

48 See John Friedman, *op. cit.*, p. 28.

49 For detailed discussion of export base model refer to; Douglas C. North, *Locational Theory and Regional Economic Growth*, and Charles M. Tiebout, *Exports and Regional Economic Growth*, in Alonso and Friedman, *op. cit.*

50 Harvey S. Perloff and Associates, *op. cit.*, p. 59.

earning of the regions income and also in the determining of the other activities of the region.⁵¹ Other activities are necessary to complement the export industries directly and indirectly. The direct activities include those of transportation, insurance, commerce and banking. Indirect activities may include those required to cater for the needs of people involved in the operation of the export industries and related industries. These are some times referred to as the residentiary industries. The term residentiary is used to designate industry operating for the local market which develops where the consuming population resides.⁵² Both the residentiary and the related activities of the export industries are dependent activities, for their level is set very much by the income earned by the export industries.⁵³

Implicitly, the export base model makes economic growth contingent upon, initial resource endowment, comparative economic advantage, regional export and the mutual reinforcement of linkage and multiplier effects. Broadly this is related to the endowment of good natural resources of the region concerned, and the character of the export sector. The natural endowment of the region dictate the initial export commodities of the region.

The various linkage effects operate through the focal sector, the export industries. An increase in the export of the region with the outside world may result in the expansion of other industries through the various forward and backward linkages. For instance growth in the export industries necessarily require the expansion of its complementary activities such as transportation, commerce, and banking. These are basically backward linkages. At the same time due to the increase in the income per capita of the people residing in this region there would be an increase in the demand for the goods produced by the residentiary industries, such as manufactured consumer goods, and services. This expansion of the residentiary industries can be considered as the forward linkages of the export industries. Similarly, the expansion of residentiary industries may result in the expansion of other related industries through the various linkages, mainly attributed to the functional relationship and also the multiplier effects of the various industries especially related to the export sector. Besides the functional linkage there is also the aspect of locational linkage. This kind of linkage tends to agglomerate industries to a particular area or centre. This in turn may influence the pattern and process of population distribution and urbanisation.⁵⁴

51 Douglas C. North, *op. cit.*, p. 254.

52 See Douglas C. North, *op. cit.*, p. 246. Residentiary industries include those that cater for the consumption needs such as food industries and services such as entertainment.

53 See Douglas C. North, *ibid*, p. 254. also R. Vining his article *Location of Industry and Regional Patterns of business cycle behaviour in Econometrica* 1946 p. 37-68, indicates that employment in residentiary industry tends to bear a direct relationship to employment in export industries.

54 Douglas C. North, *op. cit.*, p. 254.

The export base model is not only supposed to explain the origin of growth of most regions but also the mechanics of sustained and cumulative growth. This cumulative growth may be achieved as a result of the development of the various secondary and tertiary activities. These activities. These activities will in all likelihood provide for a widening of the export base, and income, as the region develops.⁵⁵ And as the regions income grows, indigenous saving will tend to spill over into new kinds of activities At first these activities satisfy local demand, but ultimately some of them will become export industries.⁵⁶

The application of this model of regional growth can be seen in the works of Harold A. Innis,⁵⁷ G.M. Meier,⁵⁸ Douglas C. North⁵⁹ and Richard L. Pfister.⁶⁰ Innis and Meier Works were in relation to regions in Canada, and both North and Pfister to the United States. All have stressed the key role of exportable commodities and services in the growth of a region. The proposition is that capital investment will tend to flow into a region to develop the export industries, including the improvement of production precesses and further development of specialised services to the exports. The resulting increase in income will tend to augment demand for secondary products and to induce investment in a variety of other industries. The rate at which a region grows from these studies it is suggested will depend on the rate at which the export base expands in line with the increase in the demand for the regions exportable commodities and services.⁶¹

The export base model may be useful in bringing to the forefront the fact that the growth of any sub-national unit is directly tied to developments within the national economy and in some cases to changes ininternational trade as well.⁶² But because attention is focussed mainly on the relationship between a single sub-national unit and the 'outside world' treated as a whole, the functional ties among regions are hidden from view. It thus throws no light on the process of inter-regional growth.⁶³ In developed countries this criticism of the concealment of functional ties among regions may be valid. But in most underdeveloped countries meaningful functional ties between regions (and even between areas in a region) is minimal if not non-existent. In many instances in underdeveloped countries,

55 *ibid*, p. 247.

56 *ibid*, p. 255.

57 See Harold. A. Innis, *Problems of Staple Production in Canada*, Toronto, Ryerson press 1950.

58 G.M. Meier, *Economic Development and the Transfer Mechanism, 1895-1913*, in the *Canadian Journal of Economics and Political Science*, vol. 19, pp. 1-19.

59 Douglas C. North, *op. cit.*

60 Richard L. Pfister, '*External Trade and Regional Growth, A Case Study of the Pacific North-West*', in Alonso and Friedman, *op. cit.*, pp. 285-302.

61 Perloff and associates, *op. cit.*, p. 58.

62 *Ibid*, p. 58.

63 This view is shared by both Perloff and associates *op. cit.* p. 58 and H.W. Richardson, *op. cit.* p. 337.

certain regions of the country has had more economic relationship with the foreign countries than that of the other regions of the country. Firstly, this is due to the lack of economic intergration between areas, sectors and regions of the country.⁶⁴ As such international trade may be more important than inter-regional trade to a particular region. Secondly in most of the developing countries there is a tendency for the export sector to be concentrated in a particular region while at the same time other regions of the economy are only producing enough goods for their own consumption a state of subsistence economy. For these reasons the export sector or rather international trade may be useful in explaining regional growth and thus indirectly the underdevelopment of other regions. In fact in most underdeveloped countries the export sector and international trade determines the growth of the economy. But this growth of the economy is itself no more than that of the growth of the region that comprises the various export and related activities.

Other criticisms of the export base model of regional economic growth has been given by M. Tiebout⁶⁵ who considers that the export base model is merely one aspect of a general theory of short run regional income determination. And in the case of large regions other variables may play as important a role as exports. In reply to some of the criticisms of Tiebout, North⁶⁶ argued that other factors such as central government may be as important as the export sector in the explanation of the growth of a region. But it should also be seen that even central government expenditure in a region may be directly and indirectly related to the export sector. For in most Federal countries some of the export taxes derived by the central government are given back to the states where the export originates in terms of direct grants or projects expenditures.

Other economists also criticise this export based model on the ground that it neglects the autonomous variables other than exports, particularly in the dynamic context: the role of technological change and investment is very important. Moreover, the export base becomes a less reliable indicator of regional growth as the scale of the region increases. More important still the occurrence of rapid growth may gradually involve a shift in the relative importance of growth factors from the dominance of the export sector to the direction of other forces such as the role of domestic demand and internal organisation of production. This in fact helps to explain why many regions are able to experience sustained and cumulative growth at a later stage, even when the export sector is declining.

64 The lack of economic intergration has be shown in Argentina by M. Brodersohn, 'Regional Development and Industrial Location Policy in Argentina,' in U.N., *Industrial Location and Regional Development*, 1968.

65 See Charles M. Tiebout, *Export and regional economic growth*, and a rejoinder in Alonso and Friedman, *op. cit.*, p. 256-261 and p. 265-266.

66 See Douglas C. North, *a reply*, in Alonso and Friedman, *op. cit.* p. 262-264.

Given the various limitations the export base model is still a useful theoretical framework in explaining the initiation of growth in a particular region, especially to that region that has minimal relationship with other regions of the country but extensive relationships with other countries via international trade.

