A SYNTHETIC APPROACH TO REGIONAL DEVELOPMENT THEORIES
Part II

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EXISTING REGIONAL DEVELOPMENT THEORIES AND THEIR INTERRELATIONS

In this section an attempt will be made to demonstrate how existing regional development theories, when grouped into six types, form easily expandable and flexible frameworks. In examining each of these types, first a narrower framework of basic relations for each theory will be defined and later , the means of developing this framework with additional proposals will be presented. The theoretical structure derived will then be criticized in compliance with the concepts developed in second section, and then in relation to the five-fold national spatial organization policies formulated in the first part of this paper.[44]

In this section regional development theories are re-arranged into six types as follows:

a.1 Stage Theories of Development
a.2 Economic   Base Theory
a.3 Theories of the Production Function Type
a.4 Shift Theory
a.5 Growth Pole Theory (Perroux type)
a.6 Polarized Development Theory (Friedmann type)

The theories combined in these groups are extensions of national development theories, and thereby represent "soft approach theories" concentrating on how development could be initiated and accelerated. In extending these theories into a more flexible and dynamic structure, use is made of the following three types of process-theories:

b.1 Theories of Diffusion
b.2 Migration Theories
b.3 Theories on Spread Effect and Backwash Effect

If regional development theories, in contrast to the theories of national development, are to concentrate on the spread of development rather than its initiation, then theories fundamentally concerned with development would fall into the latter group. Should a synthesis be attempted with

the theories in these two groups, it would be possible to explain how growth occurs in a region (area) or a city (node), and how it spreads to its periphery, but the effect of this development on spatial organization would not be clearly included in the analysis. A third group of theories therefore, is included in order to establish the relation of development with spatial organization:

c.1 Central Place Theory
c.2 Empirical generalizations such as the Rank-Size rule of settlements
c.3 Macro-descriptions on national spatial organization

In the following sections we shall study how the six theories given in the first group can be combined with those of the second and third groups to obtain larger synthetic theories.

DEVELOPMENT STAGE THEORY

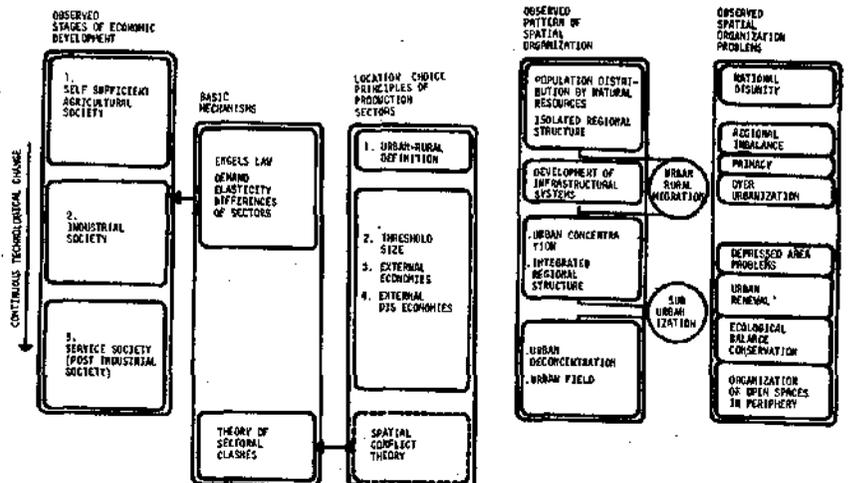45. C.CLARK, The Conditions of Economic Progress, London: MacMillan and Co. Ltd., 1940.

The theory of development stages is based on generalizations following empirical observations. Colin Clark,[45] using the percentage distribution of labor among sectors for the whole of a country, defines stages of self-sufficiency, industry, service or post-industry in the development of a country. A theory concerning stages of spatial development is obtained by defining the development stages of the spatial organization parallel to the stages of growth of a country. The increase of productivity, owing to the continuous of, technology within the system (i.e. elasticity of demand for agricultural products being smaller than for industry and services), leads to a sectoral distribution of labor as observed in stage theory. The intersectoral differentiation of demand elasticity is the basic tool that the theory employs in explaining the observed empirical generalizations.

46. A.H.SIMON, Models of Man, New York: John Wiley and Sons Pub., 1957.

47. S.KUZNETS, Consumption, Industrialization and Urbanization, Industrialization and Society, ed. B.F.Hoselitz and W.E.Moore,(The Hague) Unesco-Mouton 1963.

Up to this point, there exist no explanation suggested for spatial organization. It is possible however, to arrive at conclusions about the rate of urbanization or on the ratio of urban to rural population, by employing sociological definitions as given for instance by Simon[46] and Kuznets[47] for the location of non-agricultural activities. If the theory

Graph 1 Development Stages Theory

48. J.FRIEDMANN, *Regional Development Policy*, Cambridge, Mass.: The M.I.T. Press, 1966.

49. K.W.DEUTCH, The Growth of Nations Some Recurrent Patterns of Political and Social Integration, *World Politics*, v.5, 1953, pp.168-195.

50. J.G.WILLIAMSON, Regional Inequality and the Process of National Development: A Description of Patterns, *Economic Development and Cultural Change*, v.13, n.4, 1965, pp.3-45.

51. S.EL SHAKS, "Development, Primacy and the Structure of Cities," Unpublished Ph.D. Dissertation, Harvard University, Cambridge, Mass., 1965.

52. J.FRIEDMANN, *Regional Development Policy*, Cambridge, Mass.: The M.I.T. Press, 1966.

is limited at this stage, then, it can only be useful in providing national urbanization policies or policies on rural-urban migration which are rather specific topics or spatial adjustment policies.

It is possible to achieve more sophisticated results by applying location theories instead of sociological definitions to the problems of location in three sectors. However, the development of the spatial dimension of the theory owes more to empirical methods than to this process. Empirical studies have first identified settlement patterns corresponding to the three economic stages and then these patterns were temporally correlated to the economic stages of development.

In the first stage, population is seen in terms of isolated settlements distributed in relation to the natural resources. In the second stage of industrial society, population appears in urban concentrations, and a spatial organization of regions exists due to highly developed systems of transportation and communication. In the third stage (i.e. post-industrial society) population in urban centers in decentralized and a higly integrated structure is obtained consisting of urban fields and/or a megalopolis.

It is essential to have a major change in the infrastructure, of a national system so as to promote it from the first to the second stage. Between the first and second stages, the relocation of population is to be experienced by rural-urban migrations, while between the second and third stages it is to be realized by processes of suburbanization.[48]

Theory is then taken one step further by the empirical verification of correlations between problems of spatial organization and these stages. In the first stage, the basic spatial problem is of obtaining the national integration.[49] The basic issues to be tackled in traversing to the second stage would be the problems of regional imbalance[50], primacy[51] and over-urbanization[52]. In the transition from industrial to post-industrial society typically, there are the problems of depressed areas, renewal of city centers and the organization of rural areas to meet new consumer demands.

It is important to point out that these problems arise during periods of transition. Having defined economic stages of development in relation to spatial organization and its problems, mechanisms that assists the explanation of these structures can now be included in the theory. This would consider such characteristics as the threshold concepts related to the location of activities, external economies, and the reduced risks in centers. Location theories can also be integrated in this manner.

Since the theory developed is evolutionary and deterministic, a certain direction of change is defined. Accordingly, changes will occur with little scope for affecting or controlling them. In other words, in the present structure there are no controllable variables. In the same manner, there is no way of directing the choices of behavioral units. It is the interactions based upon the motivations of these units that gives rise to economic stages.

Although the description of observed problems regarding the spatial organizations that correspond to stages are laden with value-judgemental attributes as "balanced" and "over", the evolutionary rationale of the model would not demand planning proposals be related to these. Nevertheless, the relevance

of such theory for planning is in the way it may assist the reduction at least partially-of some of the problems faced at a later stage. Furthermore, it may give rise to more relevant evaluations of the static system diagnostics as "primacy" or "imbalance". Spatially staged development theory, with its extended structure, does not enable an elaboration of proposals for all five policy areas of spatial organization. This theory will be useful for clarifying the policies of urbanization, spatial adjustment; partially, for those of regional dispersion; and in a limited manner, for policies of hierarchy and flow.

The model, with the above structure, is devoid of political content. Should the dialectical materialistic development model be recalled, however, such models of staged development can easily be integrated with conflict models. If the sectoral and spatial stages of the model were to be integrated respectively with the sectoral conflict model of Mamalakis[53] and spatial conflict models of Friedmann[54], the internal dynamic elements explaining structural changes between the stages would gain more power.

ECONOMIC BASE THEORY

This theory can be regarded as an extension of the international trade theory, in order to be used in the investigation of regional interactions. Being based on a very simple relationship, it affirms the constancy of a multiplier between export oriented and residentiary activities. This relationship, which Hoyt[55] observed for the shortrun equilibrium in the 1930's, was further developed by North[56] into an equally valid method of long range analysis for regional development.

Since the residentiary activities of a region are dependent on export activities, the total change in a region can be explained solely with changes in export activities. The export sector, which is the independent variable of regional development, in turn, can be explained by methods such as the comparative cost advantage approach. This will be the

53. M.J.MAMALAKIS, The Theory of Sectoral Clashes, *Latin American Research Review*, v.4, n.3, 1969, pp.9-71.

54. J.FRIEDMANN, "A General Theory of Polarized Development," Mimeograph Report, 1967.
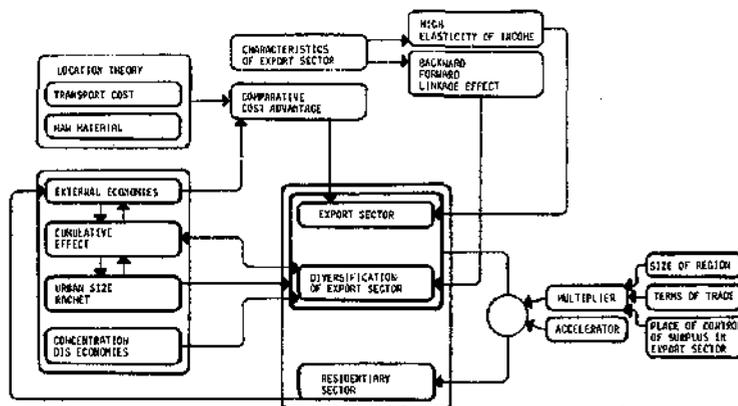
55. H.HOYT, On the Concept of the Economic Base, *Land Economics*, v.30, 1954, pp.182-186.

56. D.C.NORTH, Location Theory and Regional Economic Growth, *Journal of Political Economy*, v.63, n.3, 1955, pp.243-258.

Graph 2 Economic Base Theory

57. C.M.TIBEOUT, "The Community Economic Base Study," Supplementing Paper No. 16, Committee for Economic Development, 1962.

58. L.M.HARTMAN and D.SECKLER, Toward the Application of Dynamic Growth Theory to Regions, *Journal of Regional Science*, v.7, n.2, 1967, pp.166-173.

59. S.J.WEISS and E.C.GOODING, Estimation of Differential Employment Multiplier in a Small Regional Economy, *Land Economics*, v.44, 1968, pp.235-244.

60. H.S.PERLOFF, "How a Region Grows," Washington, D.C., Committee for Economic Development, 1963.

61. W.R.THOMPSON, *A Preface to Urban Economics, Resource for the Future*, Baltimore: John Hopkins Press, 1965.

narrowest framework for growth theories of the economic base type. Such a framework is suitable for the independent shorter-term growth analysis of small regions.

This constrained framework can be developed in various ways. A first elaboration would be the inclusion of external economies in the analysis of comparative advantage of the region, alongside with the raw material and transportation costs. In this manner, the dynamic characteristics of the theory would be enhanced. The second development is achieved by a more precise definition of regional multipliers. Tiebout has shown that regional multipliers were a function of the city or region size[57]. Distinguishing between long-term and short-term multipliers, he has clarified the long and short-term interpretations of this theory. Hartman and Seckler have also employed two distinct terms in explaining the impact of the export sector[58]; the *"export multiplier"* results from the short-term adjustments of the system and the *"accelerator multiplier"* accounts for the effects of long term adjustments of the system. A third elaboration is possible by relating the export sector characteristics of the region to their regional impact. Regional multipliers for the different sectors would reveal variations.[59] If the terms of trade for the nation change in favor of the more advantageous sectors of a region, and if the surplus of the export sector is controlled within that region, then, its growth effect for that region would be greater. The relevance of regional control over the surplus product lies in the spontaneous locational decisions in reinvesting this surplus.
A further means of theoretical extension exists in the investigation of mechanisms that enable the continuous development of the regional export sector. Factors that explain the growth of the export sector can be grouped into three. The first group consists of factors that specify sectoral characteristics such as: a) elasticity of demand for the sector, b) forward and backward linkage effects in the sector. While a high demand elasticity facilitates an accelerated growth in the export sector, backward-forward linkage effects promote diversification. In this manner Hirschman's growth theory and economic base theory are interrelated. A second group of factors explain developments in the export sector in terms of the internal nature of a region. The growth of residentiary sector in a region creates external economies which in turn provide comparative advantages for the region in the development of new exporting sectors. Such "cumulative effects" as specified by Perloff,[60] increase diversifications in the export sector. Factors identified in the above two groups present a mechanism that cause the system to grow and change continuously.

Factors that give rise to stabilizing and restraining mechanisms can be described in a third group. Agglomerations within a region may create diseconomies so as to expell forces of growth to areas outside the region, thus causing a trickling-down effect. Even if changes occur in production technology or in international relations at the expence of the initial regional advantages in export sectors, the existing level of agglomerations or the "urban size ratchet"[61] would still maintain the regional activities. Such dynamic mechanisms make the economic base theory stand in similar status with the growth pole theory.

Since economic base theory is an impact type theory, it can

be made compatible with alternate political choices. If the
development of a region is given as a political goal, then
its export sectors need the support of autonomous political
decisions. This approach is a current means of implementation
in many countries. The impact type structure of the model
that assumes the export sector an independent variable,
enables to verify the effects of political decisions on
regional development.

Economic Base theory is a demand-oriented theory. Regional
development is expressed as a function of the increase in
demand solely for the export sectors. This implies an
assumption of perfect factor mobility within the system.
Such an understanding of regional growth would affirm the
automatic flow of labor and investments to any region that
had prior superiority in specific sectors.

Since export demand is widely uncontrollable within the
region, growth is "assigned" from outside. This conclusion
is also relevant for autonomous political decisions.
Therefore with such a structure the theory is not very
responsive to intra-regional efforts.

i2. H.W.RICHARDSON, *Element of
regional Economics*, Harmondsword,
Middlesex: Penguin Books, 1969.

The economic base theory can be used at an inter-regional
level by expressing the demand for exports from a region, in
terms of import demands of other regions, as Richardson has
demonstrated.[62] In this form, it is a static inter-regional
theory. Dynamism would only be achieved by the formulation
of proposals about changes in comparative advantages of
regions which in turn could only be explained with a model
of structural change or a conflict theory. In its latter
form, the theory would be relevant largely for inter-
regional allocation policies, but poor in guiding policies on
urbanization, spatial adjustment, urban hierarchy and flow
relations.

We have seen in the previous sections how economic base
theory could be transformed into a form of the growth pole
theory. Growth poles on the other hand, can easily be
integrated with the central place theory. With such an
integration, the theory would be able to prescribe policies
about settlement hierarchies and flow relations.

PRODUCTION-FUNCTION TYPE GROWTH THEORIES

i3. H.SIEBERT, *Regional Economic
Growth Theory and Policy*, Scranton,
Pennsylvania: International Textbook
Company, 1969.

i4. C.L.LEVEN, J.B.LEGLER and P.
SHAPIRO, *An Analytical Framework for
Regional Development Policy*,
Cambridge, Mass.: M.I.T. Press, 1970.

Although growth theories of this category, like the economic
base theory, deal with development of single regions, unlike
the latter they are supply-oriented. They study the origins
and growth of the production capacity of a region with
respect to the supply of production factors.

Siebert[63] and Leven[64] first formulated an aggregate
production function for a region and then studied how the
factors of production in this function increased for the
region. Thus, a regional growth theory was obtained. There
is scope to meet the planning requirements of specific cases
by adjusting the type of production function and the level
of aggregation of production factors.

The Cobb-Douglas type production functions, that assume
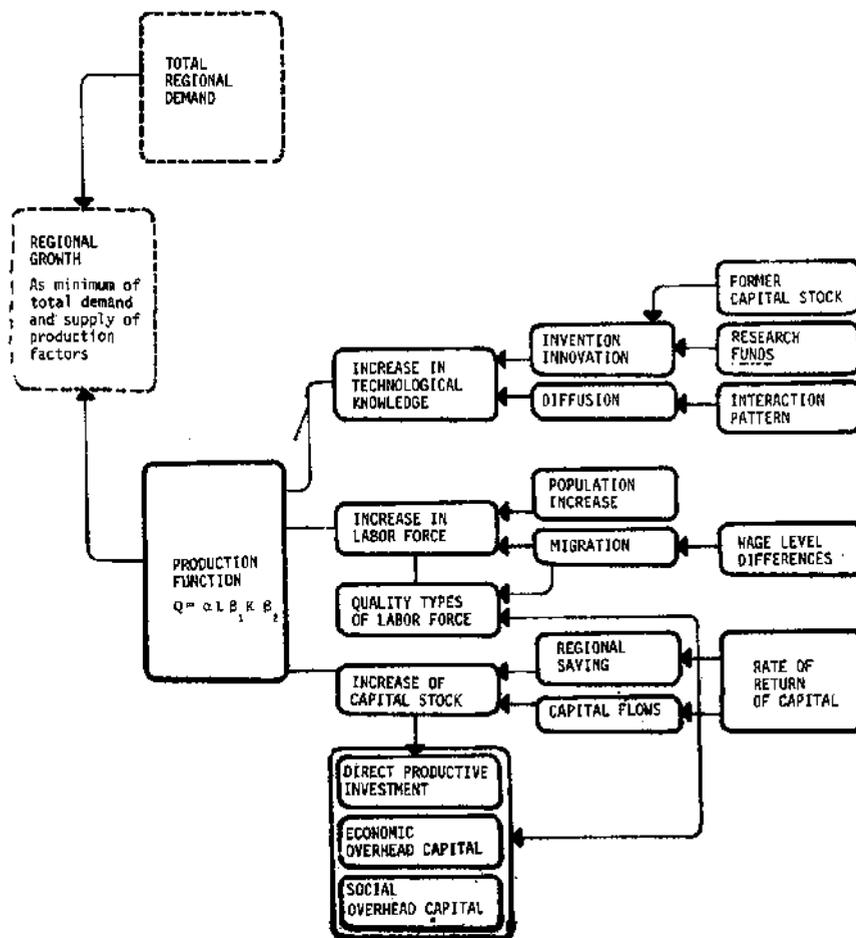labour and capital as the prime factors of production:

$$Q = \alpha L^{\beta_1} K^{\beta_2},$$

are the most extensively used. The supply of capital, a

TOTAL REGIONAL DEMAND

REGIONAL GROWTH

As minimum of total demand and supply of production factors

PRODUCTION FUNCTION

$Q = \alpha L \beta K \beta_2$

INCREASE IN TECHNOLOGICAL KNOWLEDGE

INVENTION INNOVATION

DIFFUSION

FORMER CAPITAL STOCK

RESEARCH FUNDS

INTERACTION PATTERN

INCREASE IN LABOR FORCE

POPULATION INCREASE

MIGRATION

WAGE LEVEL DIFFERENCES

QUALITY TYPES OF LABOR FORCE

INCREASE OF CAPITAL STOCK

REGIONAL SAVING

CAPITAL FLOWS

RATE OF RETURN OF CAPITAL

DIRECT PRODUCTIVE INVESTMENT

ECONOMIC OVERHEAD CAPITAL

SOCIAL OVERHEAD CAPITAL

Graph 3 Production Function Type Growth Theory

factor of production that facilitates development in a region, is a function of regional savings and inter-regional net capital flow. Both the intensity of allocation of regional savings for intra-regional investments, and the flow of capital into the region will depend on the rate of return on regional investments. The capital flow would however decrease, as the marginal profit would diminish with the increase of capital in the region.

Regional labor supply on the other hand, is a function of the natural population increase and net migration. The interregional differences in productivity or wages are the basic causes of migration. The flow of labour into the region would decrease or cease altogether since marginal productivity will decrease as the regional labour supply increases.

A third factor that determines production in a region is the production technology of the region. Technology, like the other factors has two sources of change. Technological development occurs either, due to innovations within the region, or due to flows of know-how from other regions by

way of diffusion. While innovation is a function of research funds spent in a region, diffusion is a function of the opportunity of interaction.

This is the narrowest possible framework for the model. If any of the factors of production, as for instance capital, is controlled in this model, the theory would have an impact-type structure. Within this framefork, the model can be further developed by disaggregating the factors of production. Leven considers such a dissaggregation necessary for the capital in the region. He proposes to disaggregate the regional capital into private and public capital; the latter of which he affirms, generally takes the form of various infrastructural investments and should be integrated into the production function with its physical indicators. In this case, the production function would take the form of

$$Q = \propto L^{\alpha_1} . K_1^{\beta_1} . K_2^{\beta_2} . K_3^{\beta_3} .... Kn^{\beta_n}$$

With the β_1 coefficients in this function, it would be possible to measure the respective contributions of the capacity increases in each type of infrastructure to regional growth. This is important since they indicate the impact of infrastructural investments provided by public funds on regional development. If the investments in the productions were to be grouped into three as Hansen[65] proposed direct productive investment. economic overhead capital and social overhead capital it would be possible to compare the contributions of public investments in each group to regional development. Similarly , by the disaggregation of labour by quality in the production function, it is possible to establish the contributions of labour types to the development of the region.

65. N.M.HANSEN, Unbalanced Growth and Regional Development, *Western Economic Journal*, v.4, 1965, pp.3-14.

Even if this theory, based on Cobb-Douglas type production function is relevant for only one region, it is possible to transform it into an interregional theory using factor movement equilibrium conditions.[66] Such an interregional framework would facilitate the calculation of the most efficient interregional allocation of natural resources, as well as the effects of transportation costs and interregional specialization etc. for the purposes of national production maximization. It would however, be more difficult to avoid the previously criticized short-term efficiency concepts when such an interregional framework is adapted.

66. W.ISARD and D.J.OSTROFF, General Interregional Equilibrium, *Journal of Regional Science*, v.2, n.1, 1960, pp.67-75.

Should the production function be formulated in a less rigorous Cobb-Douglas fashion, as Q = f (capital, labour, land, transportation resources, technology, social system characteristics); a more flexible framework can be obtained, to be less constrained by the concepts of efficiency.

So long as the theory is not transformed into an interregional form, it is supply-oriented, and would permit the integration of factor immobilities into analyses. The supply-oriented nature of the theory makes it more responsive to intra-regional development efforts than the economic base theory. If supply and demand sides are used as constraints for each other in the manner of Siebert then the dependence of regional development on intra-regional development efforts is reeliminated.

The aggregate nature of the production functions in regional growth models allows little scope for the integration of intersectoral linkages into the model. These theories, unlike the economic base theory, do not generate decision

criteria for the locational choice of a firm. Although the
theory, thus formulated, may guide interregional allocation
and spatial adjustment policies and partially the policies
for flows, it would not generate hypotheses for urbanization
and urban hiererchy policies. Despite the efforts of Siebert
in this direction, taking into consideration the polarization
effects of production factors like technology and of external
economies, such relations remain alien to the rationale of
the model. Even in its interregional form, the model would
not allow the integration of a conflict model, since the
solution of the Cobb-Douglas production function assumes
identical rates of return between factors.

INTER-REGIONAL SHIFT THEORY

The interregional shift analysis in a technique that provides
a measure of economic growth variations between regions. It
has been possible to develop a regional growth theory upon
this technique, since the descriptive method is implicity
based upon a concept of economic growth and since within the
process, hypotheses are formulated using growth factors as
dependent variables.

Interregional shift theory starts with the observation that
national growth creates differential growth effects by sectors
and regions. Developments in national technology for instance,
would result in an increase in per capita production,
decrease in transportation costs and changes in the
production function, all of which in turn would cause varying
rates of sectoral and regional growth. Increase in per capita
income caused by productivity increases would result in the
differential growth rates in the sectors since, as discussed
in the staged growth theory, their demand elasticities are
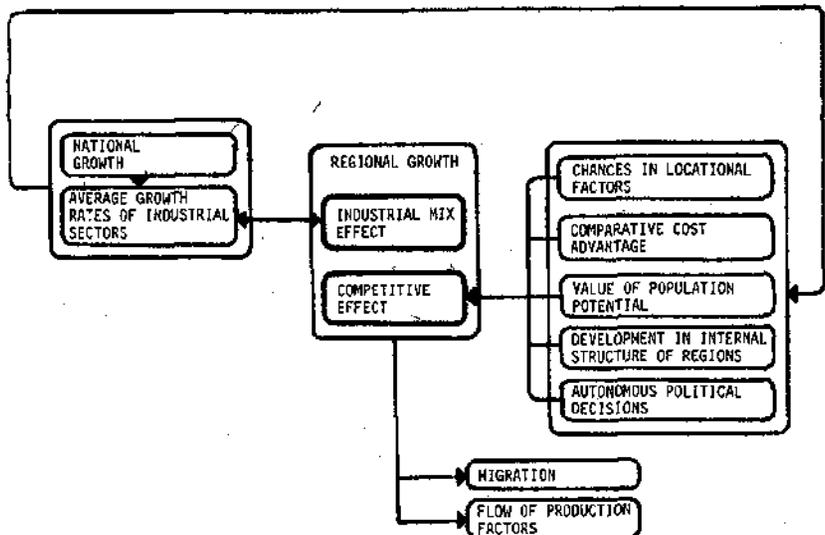
Graph 4 Shift Theory

67. V.R.FUCHS, *Changes in the Location of Manufacturing in the United States since 1929*, New Haven, Conn.: Yale University Press, 1962.

68. H.S.PERLOFF et al., *Regions, Resources and Economic Growth*, Resource for the Future, Baltimore: John Hopkins Press, 1960.

69. L.D.ASHBY, Regional Change in a National Setting, *Staff Working Paper in Economics and Statistics*, 1964.

70. J.R.LASUEN, Venezuela: An Industrial Shift-Share Analysis, *Regional and Urban Economics*, v.1, n.2, 1971, pp.153-220.

not identical. Even with the ceteris paribus assumption, that is, even if the regions were to maintain their relative competitiveness, they would grow at different rates as each region would be specialized in a different productive sector. Furthermore, since the production function and transportation costs would also be altered, and therefore the relative competitiveness of each region, there would again be variations in the regional growth rates.

One approach to such a theory of inter-regional growth disparities would be, as seen above, the deductive study of individual sectoral and regional implications of national growth. Such a method may prove to be difficult however as national growth has very complex outcomes. Fuchs[67], Perloff[68], and Ashby[69] have attempted an opposite approach. They have factorized the causes of observed changes in a national system of regions for a given span of time into industrial mix effects, and competitive effects. Assuming constant relative competitiveness for the regions, the industrial mix effect that is calculated with the national average growth rates of sectors, would give the extent of growth for each region. The competitiveness effect would then be obtained simply by deducting the industrial mix effect from the observed growth. Correlating these components with various characteristics of the nation, Fuchs, Perloff and Ashby inductively procede with their analysis.

Of the two factors, industrial mix effect shows the initial structural advantages of a region, while the competitive effect indicates its new advantages. Lasuen has shown that in short-term analyses, the relative importance of industrial mix and competitive effects remain almost constant.[70] Whereas the industrial mix effect is considerable in the short-term, this is lost in the long-term analysis and the competitive effect becomes the more explanatory factor. Since the basic dynamic element of the model is the competitive factor, a first step in extending the model would be its explanation with independent variables representing the social characteristics of the system.

There are wide divergences of rationale between the dichotomies of shift theory and that of economic base theory. It is relevant however, to establish the relationship of the competitive effects on the one hand with that of regional export and residentiary sectors, so as to clarify the growth mechanism of the shift theory.

If the composite competitive factor in export sectors of a region are positive, then the region would be in rapid growth. As a corrollary, if this factor is small or negative, then it is a stagnant or a degrading region. Similiarly, if the competitive effects for residentiary sectors in a region have positive values, the internal structure of the region is in progressive change and the intra-regional multipliers are increasing.

Within the rationale of the shift theory, even if a region does not have a rapidly growing export sector, it may still be in a process of growth owing to positive competitive factors in the gradually growing export sectors and having an share of concentration in these sectors.

It may be stated that within the narrower framework of the model, the intra-regional multiplier effects are neglected in explaining regional growth. If measures of intra-regional

structure are employed however, as independent variables in deducing the competitive effect for the region, such effects would be included in the analysis.

Should, for the sake of spatial allocation problems, the competitive effect of the model be regarded only as comparative costs technique used in economic base theory, the explanatory power of the model would be gravely constrained. On the other hand, the incorporation of intra-regional activities into the concept of competitive effects will contribute to the flexibility of the model.
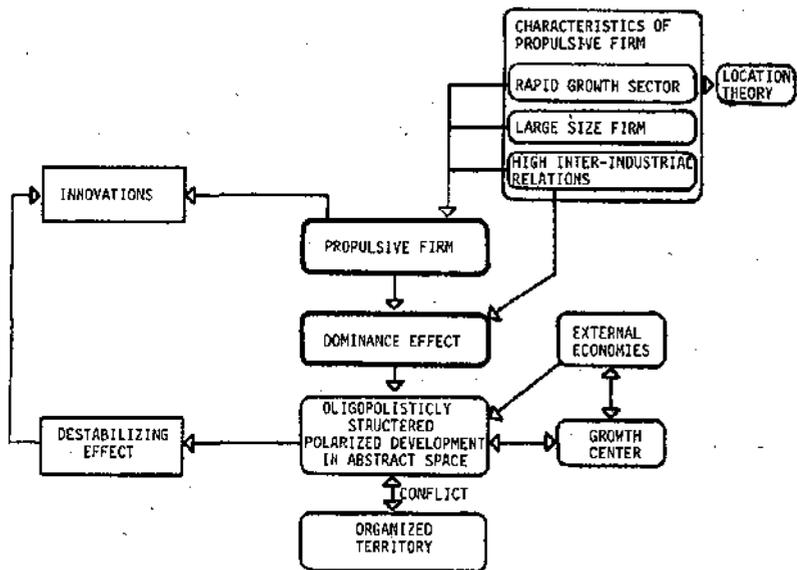
In explaining the competitive effect, the spatial association of sectors with positive competitive effects in each region can be used as measures of inter-industrial backward-and-forward linkage effects. In formulating the competitive effect, variables like urbanization rate and infrastructural change in the region, or the population potentials identifying relative locations with respect to national distributions, can be used so as to modify the structure of the model.

Another possibility for elaboration lies in using the competitive effects as independent variables in explaining or predicting migration or other similar factor movements. In this most extended form, the model could guide policies of interregional distribution and spatial adjustment while policies on urbanization, urban hierarchy and flow would in general fall outside the limits of the theory.

GROWTH POLE THEORY(ECONOMIC)

71. F.PERROUX, Note sur la Notion de Pole de Croissance, *Economie Appliquée*, v.7, 1955, pp.307-320.

The growth pole theory which generally employs economic variables in explaining growth, has been developed on propositions of Perroux.[71] The polarized growth theory as

Graph 5 Growth Pole Theory

72. J.FRIEDMANN, "A General Theory of Polarized Development," Mimeographed Report, 1967.

developed from Friedmann's propositions, on the other hand, focus upon social and political variables for the same purposes.[72] The reason for holding these two theories apart, while they could easily be combined into a single framework with their joint pole concept, is not the fact that they are based on variables on different disciplines in explaining growth, but in the distinct ways they integrate spatial organization into their analysis. Perroux studies the conditions for rapid growth and demonstrates that these conditions would create polarized development. Friedmann, assumes the existence of core concentrations in spatial organization as given, and inquires into their contribution in accelerating growth. In the first case, spatial organization is a dependent variable while in the latter it is independent.

73. D.F.DARWENT, Growth Poles and Growth Centers in Regional Planning a Review, Environment and Planning, v.1, n.1, 1969, pp.5-31.

Perroux emphasizes the concept of Schumpeterian innovation as an independent variable in his growth pole theory. The two basic concepts upon which the theory is developed are those of the "propulsive firm" and "dominance".[73] Since the analysis is carried out at the firm level, the concept of "dominance" is defined with reference to firms. Dominance effect is one way a firm may exercise control over another; it occurs when a firm controls the supply or market of a product. The second concept of the growth pole theory, the "propulsive firm" is defined as a firm that could create an effect of dominance. In order to exercise such influence, a firm would have to be a large unit with high inter-industrial backward-and-forward linkages. These two characteristics are sufficient for creating the dominance effect. Since the sectors of the industry that facilitate growth, are of prime interest to the theory, the propulsive firms have to be in a rapidly growing sector. Yet, not all firms in a rapidly growing sector create an effect of dominance. The development of such a firm in Perroux's abstract space creates a state of polarization with an oligopolistic structure. Concepts of external economies are used in explaining the fact that the polarization in this abstract space creates agglomerations in geographic space. The establishment of this relation however, is only of secondary importance for the theory. An oligopolistic pole would continuously create a destabilizing effect and cause new innovations. This innovation effect is an outcome of the size of the firms. The theory may allow extensions and integrations owing to its flexible structure, which indeed has been a major reason for criticism. The relation of the theory to geographic space and regional agglomerations is not sufficiently clear. Aydalot[74] and Darwent[75] as well as Datta-Chaudhuri[76] point this out and claim Perroux's pole theory to be of inter-regional and national scale, defining the intra-regional aspects as "growth centers". The concept used in clarifying this part of the theory is the "pecuniary external economy" as specified by Scitowski.[77] It is possible to develop the theory further by adopting Pottier's concept of growth axes over which innovations are assumed to extend, replacing the concept of single "urban agglomeration".[78]

74. P.AYDALOT, Note sur les Economies Externes et Quelques Notions Conexes, Revue Economique, v.26, 1965, p.962.

75. D.F.DARWENT, Growth Poles and Growth Centers in Regional Planning a Review, Environment and Planning, v.1, n.1, 1969, pp.5-31.

76. T.HERMANSEN, "Expert Group on Growth Poles and Growth Centers," United Nations Research Institute for Social Development Programme IV Regional Development, 1969.

77. T.SCITOVSKY, Two Concepts of External Economies, The Journal of Political Economy, v.42, 1954, pp. 143-151.

78. P.POTTIER, Axes de Communication et Développement Economique, Revue Economique, v.14, 1963, p.128.

79. H.SIEBERT, Regional Economic Growth Theory and Policy, Scranton, Pennsylvania: International Textbook Company, 1969.

If we should accept, like Siebert[79], that external economies have a spatial distribution, then we should also accept that these do not necessarily arise from geographical agglomerations. In this case the relation between the geographic region and the concept of poles within an abstract space can be established with a classification like the one used by Paelinck[80]. He differentiates those poles that exert an

80. J.PAELINCK, La Théorie du dévelopment Régionale Polarisé, Cahiers de L'Institut de Science Economique Appliquée, Série 1, n.15, 1965, pp.10-11.

influence on a region from those having little effect, and simultaneously those poles that take place within and outside a region. This fourfold classification is relevant since it provides an explanation for the case of regions that lack "sustained growth" despite their abundance of industrial complexes. Furthermore, it lends the theory an attribute of conditionality with respect to regional growth.

The growth pole theory would allow the integration of difeerent propositions for a further reason; that it offers the concept of imbalanced growth similar to Hirschman's theory. It would be possible therefore, to develop Perroux's assumptions about the size of firms. Although the size of a firm is a crucial determinant of "bacward-linkage" effects, it is rather insignificant in creating "forward linkages". While the location of a propulsive firm is of little importance for firms dependent on backward-linkage effects, it is important for firms capitalizing on their, forward-linkage effects.[81] Here, it is possible to insert an institutional dimension to the analysis by considering "sub-contracting" inter-relations as proposed by Davin[82], the Perroux assumptions about the size of firms are thus relaxed and it becomes possible to avoid criticisms which claim that agglomerations in reality consist of small units.

The superimposition of Myrdal's interregional functional complementarity concept into Peelinck's classification of pole and regional relations, provides explanations beyond mere classifications of spatial growth processes.[83] The theory in this form is more of a national growth theory. It lends no clear guidance to the policies of interregional differentiation, urbanization, urban hiererchies, flows and spatial organization. Some growth strategies as Rodwin's "concentrated decentralization" policy however, are based on this theory[84]. Such policies, in Alonso's terms,[85] convey national inequalities into regional ones. Thus regarded, there is an inconsistency between the national character of the theory and the purpose of its use. The proposition of generating growth in under developed regions implies an attitude of implementing certain political goals with a minimum sacrifice of economic efficiency. The "growth pole" thus used as a tool would be dictated by an autonomous political decision. The critical planning problem is the prognosis of spatial repercussions of growth. As Aydalot states, the important point in this theory, is not the type of development that takes place in a certain pole but how it spreads.[86] The use of an abstract space in the theory does not however serve this aim. For this reason it is necessary to shift from the concept of "growth poles" to that of "growth centers". This in turn, can be done by considering the effects of urban agglomeration on growth and expension. Friedmann's approach below, provides the necessary demonstration.

The reason for a region being declared as a pole via political decisions can be analysed by the conflicts between poles and "organized territories". Although the concept of conflict is implied in Perroux's approach, it becomes the basic mechanism in Friedmann's analysis.

THE POLARIZED DEVELOPMENT THEORY

The theory of polarized development is based on an analysis of the developmental impacts of spatial organization. The

81. D.F.DARWENT, Growth Poles and Growth Centers in Regional Planning a Review, *Environment and Planning*, v.1, n.1, 1969, pp.5-31.

82. L.E.DAVIN, Les Conditions de Croissance des Economies Régionales dans les pays Développés, *Théorie et Politique de L'Expansion Régionale*, Universite de Liége, 1961.

83. G.MYRDAL, *Economic Theory and Underdeveloped Regions*, London: Gerald Ducworth and Co., 1957.

84. L.RODWIN, Metropolitan Policy for Developing Areas, *Daedalus*, v.90, n.1, 1961, pp.132-147.

85. W.ALONSO, Urban and Regional Inbalances in Economic Development, *Economic Development and Cultural Changes*, v.17, n.1, 1969, pp.1-14.

86. P.AYDALOT, *Note sur les Economies Externes et Quelques Notions Conexes*, *Revue Economique*, v.26, 1965, p.962.
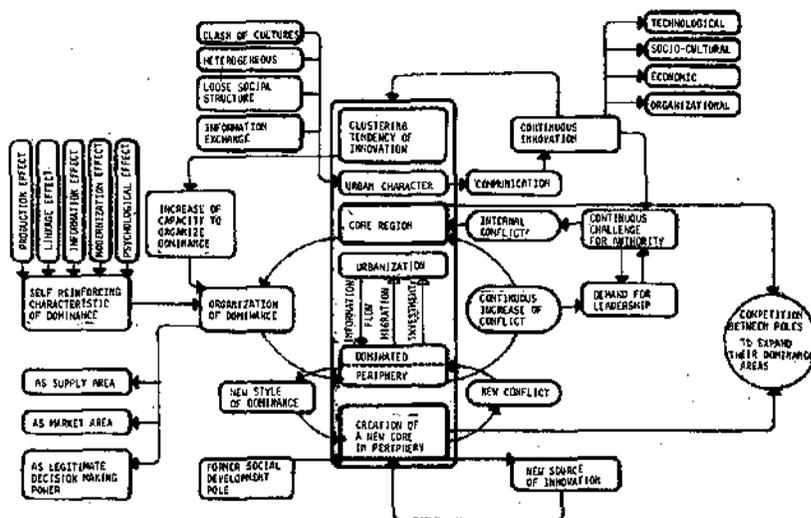
Graph 6 Polarized Development Theory

basic elements of spatial organization are defined first, and
then their effects on development examined. An "urban-core
region" and a settlement hierarchy are the essential
characteristics of spatial organization considered in the
theory. The theory remains however at the level of·macro
elements and characteristics of spatial organization, and
does not deal with firms as units of analysis.

The existence and attributes of core-regions are verified by
observations. A core-region is a spatially organized
subsystem with a high potential for generating and absorbing
innovations. Space, is hierarchically organized by a system
of core-regions.

A core-region, by definition, is an urban environment, The
"basic processes" of such an urban environment are innovations,
diffusion of innovations, decision making and control,
investments and migrations as specified by Friedman[87]. He
studies how the core-region organizes it's periphery by means
of these processes, and by control and innovation processes
in particular.

In spatial organization the "core" and the "periphery" which
is controlled by this core are two complementary concepts.
The theory, deals on the one hand, with how control is
intensified on the periphery by means of these processes, and
on the other, studies. how the environment counteracts
generating conflicts and structural renewals. Thus in the
theory of polarized development, the change concept of a
dialectic system is utilized.

A core-region, owing to its urban nature, is a perpetual
source of innovation in technological, social, cultural,
economic and organizational dimensions[88] . Each innovation
challenges the existing pattern of control in the system.
For this reason the system has to develop mechanisms that
help maintain order. It has to keep on absorbing new
innovations, assuring meanwhile their inter-consistency.
Innovations have the tendency to cluster in the urban core.
Continuity of innovations would increase the potency of a
core to monitor its periphery. The core organizes its

87. J.FRIEDMANN, Towards a National
Urbanization Policy Problem Decisions
and Consequences, United Nations
Seminars on Financing of Housing and
Urban Development, Copenhagen, 1970.

88. J.FRIEDMANN, Core Region as an
Instrument of Development Policy,
Seminar for International Studies,
Lund University, Sweden, 1966-1967,
pp.5-12.

89. J.FRIEDMANN, "A General Theory
of Polarized Development,"
Mimeographed Report, 1967.

90. J.FRIEDMANN, "A General Theory of
Polarized Development," Mimeographed
Report, 1967.

environs by means of a legitimate decision-making power.[89]
Owing to the structural characteristics of core and periphery,
such dominance is self-reinforcing. The structural
characteristics here, are the linkage effects, specialization
of production, rate of information processing, psychological
impacts, modernization and others[90]. The dominance of the
core works to the disadvantage of its periphery in flow
relations like investments and migrations. Thus, as the
control of the core over periphery increases, the conflict
between the core and the periphery also increases. The
periphery is therefore in search for leadership to direct
this conflict. The innovative capacity of the core would be
sufficiently strong to challenge existing authorities and
would give rise to innovative groups eager to form coalitions
with the periphery, to seize control at the core. In order
to resolve the intensified conflict, in consequence to its
organization, a new core will have to be allowed for in the
periphery, independent or relatively independent from the
existing core. The new core as a new source of innovations
will act to organize its dominance on the old periphery. The
old and the new cores will compete for the sharing of the
periphery . The new core will mature with the development of
active peripheral urban centers which Friedmann calls the
"social development poles"[91].

91. J.FRIEDMANN, The Future of
Urbanization in Latin America,
Studies in Comparative International
Development, v.5, n.9, 1970, pp.179-
197.

It is essential to note the two different types of conflict
within this framework as synthesized from several articles of
Friedmann. The first one is the conflict within the core.
The core as a perpetual source of innovations is also a
generator of conflicts. Although the system inheres mechanisms
to absorb such conflicts, at times of widespread changes in
the system, conflicts may not be resolved and crises occur.
Friedmann for instance points to the case of South America
where the high rate of urban migrations causes "hyper-
urbanization" and in consequence a crisis of inclusion
occurs.[92] He goes on to study the impact of this crisis on
the macro-social system. The second conflict is the one
between the core and the periphery which has been described
above.

92. J.FRIEDMANN, The Strategy of
Delibebarate Urbanization, American
Institute of Planners, v.34, n.6,
1968, pp.364-373.

The specification of these conflicts makes the theory
expedient in urbanization and regional allocation policies.
Furthermore, since the core is defined hierarchically, the
theory can be indicative to an urban hierarchy policy. The
processes referred to in explaining the functions of a core
would also provide an opportunity for developing flow and
spatial adjustment policies. In brief, the theory, being
"defined" with reference to planning goals, rather than being
"derived", would allow an integrated framework of casual
relationships and processes.

CONSIDERATIONS ON THE INTERRELATION OF
DIFFERENT REGIONAL DEVELOPMENT POLICIES

The basic characteristics and possibilities of extending
different types of regional development theories were
discussed above. These theoretical frameworks stand as
syntheses achieved in the attempt of solving the basic
question posed in each case. Even though it is possible to
reach an all-inclusive synthesis by their integration, the
operability of this wider synthesis would be questionable.

In this section therefore, the attempt will not be an all-

inclusive synthesis, but a systematization of interrelations between these theories and the manner they may complementarily be put in use.

Only one, out of the six theories studied above, uses a concept of time expressed in stages. Since the time concept employed in the other five theories is a general one, findings obtained through their use would be valid for all the stages of development specified in the former theory. Yet if the variables and problems dealt with in these theories are to be considered, they correspond to the industrial, or to the second stage of the three-stage development theories.

The similarity of spatial structure envisaged in these theories, enable the theories to be used complementarily. With respect to space, two different approaches are observed. A first group of the theories disaggregate national space into regional units and base their analysis on a spatial system consisting of regions. The theories in the second group assume a spatial organization of point pattern settlements. While the spatial structure in shift theory is based on a regional subdivision of national space, economic base, production function type and polarized development theories have structures that can be interpreted in either way, making it convenient to establish relations with other theories. In development-stages and Perroux's growth pole theories on the other hand, space is not organized into a structure, rather the whole national economic space is the subject of analysis. It is difficult therefore, to formulate policy proposals in these theories about the organization of space.

The economic base, production function and growth pole theories, could only imply policies for a single region. These three theories complement each other. While the production function theory investigates the supply side in development processes, the economic base theory dwells on the demand side. The growth pole theory on the other hand, explains the mechanisms that bring about a self-sustained growth.

Shift theory and Friedmann's center-periphery models are interregional development theories in which the growth of a region is studied with reference to the total system. The incompatibility of the regionalized spatial organization concept employed in shift theory and the nodal spatial organization concept used in the center-periphery model, discards the possibility of integrating these two theories. Production function or economic base theories that explain the development of single regions can be transformed into interregional theories by means of a set of equilibrium equations for interregional flow relations. In such a case these models, with their additional capacity for providing information on interregional flow relations, would be superior to shift-type theories. The economic base and production function type theories can also be given an interregional structure if they are used to explain the functions of the center in center-periphery models. If spatial organization is to be used as an independent variable in regional development theories, it is necessary to determine first the correlations between spatial organization and economic growth as in growth pole theory. The other regional development theories consider growth in a region or at a point in terms of the rationality of its economics. In

93. B.J.L.BERRY, Relationship between Regional Economic Development and the Urban S' stem, *Tijdschrift Voor Econ. En Soc. Geografie,* n.60, 1968, pp.283-308.

94. P.O.PEDERSEN, Innovation Diffusion in Urban Systems, *Geographical Analysis,* v.2, 1970, pp.203-254.

95. J.BALAN, Migrant-Native Socioeconomic Differences in Latin American Cities A Structural Analysis, *Latin American Research Review,* v.4, part 1, 1969, pp.3-29.

order to use spatial organization as an independent variable in development theories, we need more empirical evidence than available today about the relations between spatial organization and development. It is not coincidental that Friedmann's propositions gravitate around the concept of urban agglomerations, rather, the relations between urban processes and development are already established a priori and empirically. The inadequecy of empirical evidence on the other hand, about development and settlement hierarchies has caused the concept of hierarchies to be discarded in the very same theory. Even though this theory uses the concept of settlement hierarchy, inter-relations between this concept and development are not fully established owing to the inadequacy of empirical evidence. There are recent developments however, on relations between settlement hierarchies and spread of economic development, and settlement hierarchies and flow relations. Berry claims that if a system of urban hierarchy does not fit a log-normal distribution nor the central place theory, the trickling-down effect will not function.[93] On the other hand, other studies have attempted to explain diffusion[94] or migration[95] processes by hierarchical characteristics. Progress in these directions will witness an increase in the number of organizational attributes of space that can be used as independent variables in development theories.

It is not easy to argue that all is known about the impacts on development, even of urban processes. Although it is generally agreed that the city has innovational stimulating effects, the mechanisms are not all too clear. Even the concepts of urban economies and diseconomies, so frequently mentioned, become difficult to pinpoint at an operational level. As stated by Klaassen, we have to know more about the functions of urban areas and urban systems with respect to growth, in order to achieve a more satisfactory regional development theory.

BÖLGESEL KALKINMA TEORİLERİNE SENTETİK BİR YAKLAŞIM (BÖLÜM II)

ÖZET

Bu yazının birinci bölümünde bölgesel kalkınma teorilerinin yapısı, teorilerin cevaplandırmağa çalıştığı temel sorular, ile kullanılan temel kavramlar ve yaklaşımların neler olduğu incelenmişti. İkinci bölümde ise altı ayrı bölgesel kalkınma kuramı verilmektedir.

Bu teorilerden birincisi aşamalı kalkınma kuramıdır. Bu kuramda Colin Clark'ın aşamaları betimleyici üç sektör teorisinden hareket edilmektedir. Sonra bu aşamaların ortaya çıkmasına neden olan,üretim ve yerseçimine ilişkin mekanizmalar verilerek, üç aşamaya paralel olarak ne tür bir yerleşme yapısı ve ne tür yerleşme sorunları ortaya çıktığı araştırılmaktadır.

Geliştirilen ikinci sentetik teori, "ekonomik temel kuramı" etrafında oluşmaktadır. Bir Bölgenin bölge dışı talebe bağlı olarak nasıl büyüdüğü sorununa ağırlık veren bu teori, özellikle yığılma ekonomilerinin ve yerseçimi kuramının önermeleriyle genişletilmiştir.

Bu bölümde verilen üçüncü teori "üretim fonksiyonu tipi" bölgesel gelişme teorisidir. Teori bir bölgesel üretim fonksiyonu etrafında genişletilmektedir. Bölgede üretim *faktörlerinin arzının nasıl oluştuğunu* gösteren önermelerle kurulmaktadır Bu nedenle bölge içi kalkınma isteklerine gayreterine hassas bir yapı kazanmıştır.

İncelenen dördüncü sentetik teori "bölgeler arası kayma kuramı" çerçevesinde geliştirilmiştir. Bu kuram ikinci ve üçüncü kuramlardan farklı olarak bir bölgenin büyümesi sorununa değil, verilen bir ülkesel büyümenin bölgeler arasında nasıl farklılaşacağı sorusuna eğilmektedir. Önce bazı varsayımlara dayanarak tanım eşitlikleri şeklinde kurulan daha çok betimsel olan kuram, genişletilerek kestirimlerde bulunacak şekilde genişletilmektedir.

Bu bölümde verilen beşinci kuram Perroux'un büyüme kutbu kuramı etrafında oluşturulmuştur. Oligopolist firmalar yapısının çevresine olan etkisinin mekanizmaları üstünde durulmaktadır. Bu etkilerin nasıl bir büyüme kutbu oluşturduğu gösterilmektedir.

İncelenen altıncı kuram Friedman'ın kutuplaşmış büyüme kuramıdır. Beşinci kuramdan farklı olarak kutuplaşmanın nedenlerini açıklamaya dönük değildir. Kutuplaşmanın varlığını kabul ederek başlamakta ve kutuplaşmanın "çevreyi" kontrol mekanizmaları incelenerek, bunların zamanla ne tür çelişkiler doğurduğu gösterilerek, bu çelişkilerin çevrede nasıl yeni kutuplar oluşturduğu gösterilmektedir.

Bölümün sonunda da verilen altı tür teorinin karşılıklı ilişkileri kurulmaktadır.

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