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PLESSAS, Demetrius John, 1939-
THE DECENTRALIZATION ASPECT OF EUROPEAN REGIONAL POLICY AND DEVELOPMENT WITH SPECIAL REFERENCE TO GREECE.

The University of Michigan, Ph.D., 1969
Economics, commerce-business

University Microfilms, Inc., Ann Arbor, Michigan

THE DECENTRALIZATION ASPECT OF EUROPEAN REGIONAL POLICY AND DEVELOPMENT WITH SPECIAL REFERENCE TO GREECE

by
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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in
The University of Michigan
1969

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ABSTRACT

THE DECENTRALIZATION ASPECT OF EUROPEAN REGIONAL POLICY AND DEVELOPMENT WITH SPECIAL REFERENCE TO GREECE

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The objectives of this research are twofold: first, to evaluate the bases on which regional decentralization decisions can be made and second, to explore the justification, extent of commitment, and overall effectiveness of the Greek experience with decentralization.

The first objective was met by establishing normative and theoretical criteria by which decentralization could be classed as serving the purposes of either regional equalization or integration. These criteria were then used to evaluate the past and existing policies of countries for which acceptable data were available. The type and extent of decentralization in these countries were analyzed along the following division: market or socialistic economies and the relative degree of economic development. The second objective was accomplished by measuring changes in the structure of the Greek economy during the period 1958-1963. These measurements were made using cross-sectional and longitudinal data and socio-economic variables, in studying location quotients and specialization, localization and net-

shift-proportional-share coefficients.

There are three major conclusions: first, the extent of the commitment to decentralization among European countries is not related either to political-economic ideology, degree of economic development or size of urban-industrial agglomerations; second, the feasibility of a regional decentralization policy depends primarily on the net relationship between the cost of its inducement, the social costs averted, the benefits gained, and the social as well as private benefits foregone in the process of relocation; and third, in the case of Greece, the proliferation of economic activity and people in the Greater Athens Region continued unabated, during the study period of 1958-1963, in spite of strong government efforts to offset this trend.

ACKNOWLEDGMENTS

The list of my intellectual indebtedness is very long and no detailed accounting of all individual and collective contributions to both my overall development and to the preparation of this dissertation can be comprehensive enough.

I am especially grateful to the following persons: Messrs. D. Burack and J. Knox, both of The University of Michigan, for valuable assistance with the use of computers; Mr. Andreas Andrikopoulos, of Wayne State University, for suggesting the significance of shift-share analysis to my research; and Messrs. Sykianakis, Haniotis, Kosseris, and Hiotis, all of the Central Service of Regional Development, Ministry of Co-ordination, Greece, for supplying me with valuable data.

Special thanks are due to Mr. F. Tabah, Economic Commission for Europe, Geneva; Mr. Thor Skrindo, of the Norwegian Ministry of Labour and Municipal Affairs; Mr. Curt Canarp, of the Swedish National Labour Market Board; Mr. Erik Tornqvist, of the Finnish Ministry of Finance; Mr. Hesse, of the Ministry of Economics, Federal Republic of Germany; Mr. Pierre Viot, Chief of the Regional and Urban Service of the French General Committee of Equipment Planning and Productivity; Mr. Laszlo Koszegi, Deputy Chief, The

Hungarian Planning Office; and Miss Pamela Dillon, of the Agency for International Development, Washington, D.C. They were all very generous in supplying me with scarce data concerning their individual countries and agencies.

I am also indebted to Professor Wolfgang Stolper, Director of the Center for Economic Development, The University of Michigan, for his generosity in purchasing several books from Greece for my use, and for making available to me the research resources of the CED. Also, to Professor Robert Grosse, School of Public Health, The University of Michigan, for his kindness and understanding.

A larger, and more difficult to express, debt is due to my Doctoral Committee which labored along with me through the various stages of the research. I am especially grateful to Dr. Beverly Driver for the extraordinary amount of time, effort and interest that he afforded towards the betterment of this dissertation, to the Co-Chairmen of my Doctoral Committee Professors Justin Leonard and John Kolars, and to Professors William Stapp, Lyle Craine and William Drake for their helpful criticisms and invaluable advice.

Last but not least I would like to acknowledge my debt to Professor Ayers Brinser whose untimely and sudden death deprived me of many more years of learning and intellectual stimulation.

Finally, I am thankful to my wife whose resilience and patience provided me with that extra amount of strength so necessary for this undertaking.

Needless to say, all errors remaining in this dissertation are my sole responsibility.

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CHAPTER I

INTRODUCTION

The study of regional planning and development has been traditionally dependent on the analytics of location theory, the concepts of space and region, and the more "operational" process of land-use planning. With the emergence and subsequent formalization of various theories of economic growth and development, a gradual shift has taken place away from purely physical considerations and towards the rationalization of regional planning as an extension of a theory of economic growth.

The application of the theory of growth to the study of regions is beset by several difficulties. The major ones are those arising from the interregional transmission of cyclical fluctuations and growth, the imprecise computation of income (as a prime indice of regional growth) within regions so largely open to external flows and transfers, and the incompatibility of national and regional income maximization goals.

A combination of the above factors has divided regional planning literature into two parts dealing respectively with regional integration and regional decentralization (equalization). The former deals with the process, mechanics,

and methods of regional growth while the latter deals with a) the allocation of national growth among regions, and b) the economic (social) costs generated by its unequal distribution.

The corollary of the growth allocation objective is the social undesirability of "excessive" growth in some metropolitan areas and the policy implications for its control. The regulation of growth is as complex as its promotion while the lack of a broad theoretical framework capable of relating "excessive" growth to social costs has produced a situation in which applied work in the field of regional decentralization has surpassed in volume and comprehensiveness any theoretical work.[1]

A careful survey of the reasons responsible for the marked differences between applied and theoretical work in the influence of location theory and second, methodological difficulties, primarily those arising from viewing decentralization as the interplay of external economies and diseconomies. The compatibility of location theory with the fundamentals of micro-economic theory is inherent in the assumptions of perfect competition and resource mobility.[2] However, location theory is premised on a form of spatial disequilibrium caused by differential regional comparative advantages, and if industries would cluster in accordance to rational location considerations, their main location criterion would be to capture external and internal economies.

The resulting concentration of industry in a given area, although efficient as far as the industry is concerned, may conceivably give rise to social costs. More specifically, (private) efficient locational arrangements create the necessary conditions for large-scale urbanization and often at levels at which specific costs to society are identifiable. This sets the stage of government concern with urban-industrial size although it does not provide the basis for instituting decentralization policies.

A framework amenable to the formation of public policy requires the identification of the net social cost. Net social cost is social cost minus social benefits or that part of (private) location economies that benefit society in the form of lower prices, higher productivity, higher incomes, and a fuller use of resources. Simple policy strategies could be devised by which society subsidizes industrial agglomeration (i.e., cheap power, reduced transportation rates, etc.) at levels where social benefits are maximized. Beyond these levels, society could restraint further agglomeration via taxes, high licensing fees, or even zoning. These strategies require the identification of the social costs at which resources are optimally allocated.

Instead of employing taxes to maintain optimal agglomeration levels, society may bribe industry not to locate in a target area. In this case, and depending upon the pertinent public and private cost involved, the magnitude of the bribe must be such that it can accomplish the

following: render an industry's decision indifferent as far as locating or not in the congested area, and/or make it possible for society to at least break even between what the bribe costs and it gains.

In the first instance, the bribe (subsidy) must be sufficient enough to compensate industry for foregoing specific locational economies. In the second instance, bribes could be so high, reflecting strong locational (centrifugal) forces, so that decentralization may not be feasible. This conceptual framework defines, to a large extent, the range of possibilities vis-a-vis decentralization.

The issue is not whether or not large cities are uneconomical but how uneconomical, and not only in terms of economies of scale for industrial plants, social overhead, and external economies, but also in terms of the economic costs or benefits of such urban phenomena as innovative behavior, social value transformations, and political and ideological ferment.

The purposes of this dissertation are: to seek a meaningful theoretical framework that can relate concentration levels to efficiency considerations, to explore the policy instruments used by selected European countries in controlling urban-industrial, and, with reference to Greece, to assess the effectiveness (and how effectiveness can be measured) of these instruments.

Chapter II establishes a theoretical approach to regional decentralization and surveys variations in European regional (decentralization) policy and their relationship to variations in degree of economic development as well as in political ideology. Chapter III gives an account of the Greek locational structure and measures the effectiveness of the decentralization policies during the period 1958-1963. This period was considered to be critical since during this period the Greek government intensified its decentralization efforts.

The main index of measuring the effectiveness of decentralization policies is the relative degree of locational dispersion or polarization that took place during the period 1958-1963. Deductively, if the locational structure of the economy changes towards further polarization (centralization), whereby the Greater Athens Region increases both in size and volume of economic activity relative to the rest of the country, the impact of decentralization can be expected to have been negligible and consistent with the hypothesis requiring that no industry would relocate unless compensated for the move. In the presence of any appreciable locational dispersion patterns, the efficiency of the policies employed would depend on the amount of induced dispersion or that change directly attributable to the policies. In the latter case subsidies can be said to have overcome the locational pull of the

Greater Athens Region. Whether the State enjoyed a net benefit or suffered a net loss cannot be determined.

FOOTNOTES

[1]Some of the more recent and notable examples of government involvement in regional planning are the following:

European Free Trade Association, Regional Development Policies in EFTA (Geneva: 1965).

International Information Centre for Local Credit, Government Measures for the Promotion of Regional Economic Development (The Hague: Martinus Nijhoff, 1964).

Commissariat du Plan d'Equipement et de la Productivite, Service Regional et Urbain, "Aspect Regionaux de la Planification Francaise," Paris, 1967. (Mimeographed.)

Ministry of Housing and Local Government, The South-East Study, 1961-1981 (London: Her Majesty's Stationary Office, 1964).

Organization for Economic Cooperation and Development, Technical Cooperation Branch, Regional Development and Accelerated Growth (Herzlia, Israel: 1964).

Economic Commission for Europe," Industrialization as a Means of Regional Development and Deconcentration in the Netherlands" (paper submitted by the Netherlands at the Third Meeting of Senior Economic Advisers to the Economic Commission for Europe, Geneva, Nov. 2-6, 1964).

[2]This view is disputed by various writers, mostly of the French regional school of thought, who argue that "pure location theory is self-sufficient" and generally not consistent with the principles of economic theory. For example, see

Claude Ponsard, Economie et espace. Essai d'integration du facteur spatial dans l'analuse economique (Paris: S.E.D.E.S., 1952), p. 2, and Histoire des theories economiques spatiales (Paris: Armand Colin, 1958).

CHAPTER II

COMPARATIVE EUROPEAN REGIONAL DEVELOPMENT POLICY: THE BASIS AND EXTENT OF REGIONAL DECENTRALIZATION

> And what, I said, will be the best limit for our rulers to fix when they are considering the size of the state and the amount of territory which they are to include, and beyond which they will not go? What limit would you propose? I would allow the state to increase so far as is consistent with unity; that, I think is the proper limit.
>
> --Plato, Republic

The specific nature of regional economic growth, in its traditional context, and a definition of a regional economic problem are of paramount importance to the discussion of regional decentralization.

A regional economic problem arises when the areal components of a national economic system exhibit marked differences in growth rates. This produces what are called "growing points" or "growth poles" which invariably, and especially in less developed countries, occur in large urbanized areas. Given that the investment patterns of less developed countries are such that substantial portions of the total investment budget are used for the infrastructural needs of these areas, there is a tendency to widen their spatial imbalance.[1] Therefore, "growth poles" have the

capacity to grow larger than other regions. Frequently their size dominates a nation's economic, political and social life. Conversely, other regions have a natural capacity for growth because of a favorable resource endowment as well as what Perloff and Wingo call "favorable changes in the content of resource endowment."[2]

The policy recommendations of growth economists, with respect to regional growth differentials, diverge and form two opposed positions; those assuming an elastic supply of capital and labor who stress "balanced" growth,[3] and those assuming inelasticities of capital, managerial ability, entrepreneurial risk-assuming propensities, etc., who argue in favor of concentrated and sequential growth so that scalar economies can be maximized.[4]

Their respective positions derive from the amount of faith they place in the workings of the perfect competition model of economic theory. The first group, by subscribing to this model, at least as a point of departure, visualizes that regional growth occurs so that the allocation of regional resources maximizes the value of national product. In this idealized and frictionless context, resource prices are equal in all regions, their marginal physical products are the same, and assuming zero transport costs, prices of outputs are the same for all regions. To use more familiar terminology, the ratio of the marginal products to the price of resources is the same for the production of any one product and in all regions. This is tantamount to

saying that growth occurs evenly among regions since factor payments are uniform throughout the nation.

The second group of growth economists admits that international and interregional growth inequalities are an inevitable condition for growth itself. Thus, in a geographical sense, growth is necessarily unbalanced.[5] In this view, a centrally structured economic system, organized on the basis of several "growth poles," is efficient and necessary for the continuation of a country's development. A conscious decentralization policy must necessarily take into account, and subsequently evaluate, all possible trade-offs between allocative efficiency and social equity.

The balanced growth approach to regional planning and development requires the formulation of a fairly elaborate regional framework in which definitional problems become especially critical to the planning process.[6] The centralization model is not subject to the same rigour since it may operate without a well defined spatial setting.

The divergence of the two views is not by itself as important, given the real existence and persistence of growth inequalities, as are their planning implications. In the former case, planning is an automatic process, and the market itself can be relied upon to accomplish the job. In the latter case, however, planning must be used whenever the regional imbalance assumes undesirable proportions. In such an event, the market is usually supplanted and even bypassed as the policy instruments employed to minimize

growth differentials must of necessity counteract its workings. Accordingly, the merits of even growth versus those of uneven growth must be considered on a basis that would lend itself to the formulation of relevant policy decisions.

In exploring the basis, scope, and content of regional decentralization policies, as pursued in selected centrally planned and market economies, the desire to restore an interregional sense of social equity into the system is more manifest than a desire to improve resource allocation. Many countries, with varying degrees of economic development, consider the wide economic and social disparities that prevail in their regions as an axiomatic justification for the formation of equalization policies. Increasingly, national developmental planning and plans are being "regionalized" in an attempt to insure a more uniform (equitable) distribution of economic activity in the national economic space and to control the growth and size of large cities.

Two necessary elements are lacking in the development of these plans: one is the identification of the impact of regional disparities on national growth, and the other is the identification of the cost of balancing regional growth. The former really means whether or not regional imbalance interferes in any way with the developmental processes, while the latter questions the efficacy of diverting resources from the general developmental effort into projects designed to equalize regional growth rates.

Neither prerequisite has been successfully explored as an input to economic policy. In less developed countries regional development policies are often associated with political objectives,[7] while in more advanced countries regional policies are frequently identified as equity measures.[8] A conflict between social and economic goals is clearly implied in the way regional development has been viewed, and this casts a few doubts as to whether economic analysis can be employed.

It is essential that the aims and performance of regional policy be examined so that its relevance to national economic goals can be better understood.

In the immediate post-war reconstruction period, none of the European nations expressed any special interest in regional problems since this would have entailed the diversion of badly needed resources from the economic reconstruction task.[9] This probably serves as an indication that national economic development takes priority over regional development although several European countries experienced severe regional problems in the period preceding World War II.

There are some notable exceptions: first in the United States with the development of the Tennessee Valley, and second, in Great Britain with its early concern over industrial concentration and urban "overspill" of the Greater London Area.[10] The early American experiments with regional development could be considered temporary measures

since no national regional policy ever did emerge in the post-war years.[11] On the other hand, early British regional policy has served as the nucleus of an entire generation of succeeding schemes of which the most prominent was the New Town policies.

The 1950's signaled the beginning of serious regional development efforts both in Western and Eastern Europe. The main theme, especially in the more economically advanced countries, was the restoration of some form of regional equity. This preoccupation has dominated contemporary European policy to a large extent.

In Socialist countries, however, the concept of equity is more consistent with political ideologies, and no special problems have arisen in defining and implementing their regional plans.[12] In market economies, which have mobilized relatively more resources for regional development, the minimization of regional growth disparities has also been based on a similar concept of equity. Such a concept has no ideological foundation in Western European political and economic thought.

The remarkable degree of uniformity of regional policy objectives among European countries, regardless of political ideology, is probably due to the lack of a workable framework that would allow decisions to be taken in full cognizance of alternatives and costs involved. This is especially true with respect to the problem of decentralization for which the only interaction between theory and

policy has been directed at finding the proper incentives for its inducement.[13]

The result is that policy has outgrown theory and has, more or less, progressed at its own independent rate. The reasons for this disparity are many: first, post-war patterns and rates of urbanization have sharply polarized economic activity in a few areas, which alarmed governments and thrust them into positions of urgent responsibility, and second, the concept of (micro-economic) partial equilibrium, on which much of pre-Löschian location theory is based, was inadequate to deal with group phenomena.

What was lacking was the means of insuring the transition from the emphasis on industry shifts, or spatial micro-theory, to a descriptive (spatial) macro-theory.[14]

While industry shifts are the salient features of regional economic growth, no sufficient attention has been given to population shifts as they reflect income differentials that account for the changes in the size of markets and in the supply of labor in the various regions.

Industry shifts themselves are the function of two forces: access at competitive costs to the inputs of production and to markets for the outputs of this production. Industrial location, when guided by these principles, and assuming a given resource endowment, will produce in the early stages of a nation's development pockets of concentration which will favor some regions over others. As these

industrial clusters grow in size and some regions begin to specialize, substantial external economies (of the location and agglomeration type) are generated which, in turn, serve as agents for further concentration.

If all industries were to maximize their profits, their locational preferences would be limited to those points in space that can satisfy this criterion and the result would be a geographically uneven pattern of industrial activity. Regional growth would, by necessity, be uneven, and if resources can be said to respond to earnings differentials, this type of growth would be the rule rather than the exception.[15]

However, it is entirely conceivable that some sort of critical mass is attained by the high growth regions whereby further concentration either has neutral effects on national development or affects it adversely. Critical mass may be characterized as the point where social and private benefits are optimized and where further accumulation of activity can come about at a loss to either society or industry; that is, that portion of the (marginal) economies enjoyed by individual firms which is passed on to society, in terms of net additions to national income, could be equal to the (marginal) social costs generated by these firms.

Social costs, in this context, are of a wide variety. They include overloading of facilities that can cause delays and breakdowns, stresses on environmental resources,

and crowded living conditions that can generate a number of social and health problems. Moreover, as workers continue to migrate into high growth regions, more investments must be made for more housing and other social services that increase the proportion of non-productive to productive investments.

In those underdeveloped countries where points of concentration are large urbanized areas this problem has critical dimensions. Conflicts are likely to arise in situations where the rationality of private locational decisions is not weighed against the array of social costs. Even greater problems can arise if these social costs are overestimated and lead to decentralization policies.

With respect to those European nations bound in trade associations, e.g., the European Economic Community and the Outer Seven that could conceivably form future political unions, two opposing views have been suggested vis-a-vis regional development.

The first holds that a complete relaxation of trade barriers may widen regional inequalities in favor of the more developed member countries.[16] In more familiar terminology, Myrdal's backwash effects would outweigh his spread effects.

The second view holds that regional inequalities will diminish, with integration, in favor of the less developed member countries.[17] This is to say that Myrdal's spread effects, emanating from highly developed regions

would benefit the backward areas of Europe by outweighing the backwash effects.

Balassa found that the spread effects may take the form of increased demand for the underdeveloped regions' products, rising proportion of mobile external economies, transmission of technological knowledge, and relocation of plants in response to wage differences, thus diminishing interregional differences.

If European regional policy is conscious of either argument, it should follow that the more economically advanced countries would be less inclined to regionalize their economies, and the less developed countries more inclined to do so in the event the former argument is true. This is not substantiated by facts since the evidence shows the industrial countries to be far ahead and more deeply committed in regional development. As will be shown below, the peripheral countries have begun recently to take stock of their regional problems, but as of the last year or so, no national plans have been "regionalized."[18]

Regional Development: Some General Formulations

The Concept of Regional Growth and Development

Disparities in regional growth rates have been attributed to a number of reasons. Prominent among these are initial differences in factor endowments,[19] which makes regional growth the outcome of resource movements generated

by earnings differentials, the cumulative effects of external economies,[20] the existence of economic "poles de croissance" (growth poles),[21] and finally, regional differences in production functions or in the demand for a region's exports.[22]

It is no accident, therefore, that the general objective of regional policy consists of slowing down the semi-automatic process by which these factors operate by applying measures either for accelerating the development of backward regions and the rehabilitations of depressed areas, or for retarding rates of growth in over-expanded areas.

While both aspects of this policy objective could adopt net changes on national income as an overall feasibility criterion, only the former aspect can do so. The latter aspect of regional policy, which essentially entails the process of decentralization, may not, and more often is not, subject to the same criterion.

The policy alternatives thus, appear to be confined in two distinct, but not mutually exclusive, options; one is to promote growth in lagging regions, and the other is to discourage further growth in "over-expanded" regions. The choice of planning and policy instruments necessary to affect the development of backward regions is relatively wider than that of controlling the growth of large regions. For one thing, the number of over-expanded regions is limited to one or two large cities with their hinterlands while

the available means, in market economies, are limited to using inducements to industry to change their locational preferences. The pursuance of "orthodox" regional development, on the other hand, is beset by problems involving the number of undeveloped regions, their structural compositions, the number of productive investment opportunities, and, perhaps more important, the degree of administrative and implementing competence of the planning (central) authority.

A third alternative, that of doing nothing about regional growth disparities, may be as attractive. Such policy, or lack of it, must be structured on the premise that regional disparities are both inevitable and necessary for further growth.[23] This may not have much appeal to already developed countries who regard regional development as a more or less equity problem but may appeal to countries with relatively more limited resources for development. The assumption of the inevitability of regional imbalance and its being a condition for more (concentrated) growth is in clear contrast to existing policy practices, for it favors the concentration of investment in growing areas. This concentration of investment may be relevant on the additional ground that the scattering of investment funds in underdeveloped countries is largely politically motivated.[24] Three questions arise at this point whose consideration covers the entire scope of regional economic development:

The first is what causes regional growth disparities,

the second is what are the effects of these disparities on national economic development, and the third is how is balanced growth insured.

The first question involves a description of the factors already mentioned which have attracted most of the economists' attention. The second question has not been empirically tested and it probably constitutes the most difficult part of the entire subject.

One criterion in calculating the effect of regional dispariteness on national development could be the composition of the investment budget. The cost of excess concentration, which can be stated in terms of extra social overhead capital required, causes a reduction in investment funds and this reduction, in turn, will be expected to have an effect on the national growth rate.

The third question is primarily a policy issue, and its resolution should depend on the interrelationship between the degree of regional differentiation and the national growth pattern.

Presently, we shall attempt to discuss the first and third basic questions only.

Regional resource endowment is a major factor in the description of the causes of regional differentials. Growth, from this standpoint, is a function of a region's increasing ability to produce goods and services demanded by the national economy.[25]

In order for resources to provide a rigorous linkage

with the national economy and to extend the internal markets of the region three criteria must be met by them:

(a) A good resource for a region is one with the ability to support an extensive stream of nationally-wanted production.

(b) Production of the resource must be characterized by extensive locationally-associated forward and backward linkages, and

(c) The resource must be characterized by a high regional multiplier.[26]

These criteria actually stress the importance of a strong export base industry that, in linking the region with the rest of the nation, provides also for the growth of the region's internal markets. The type and relation of the export base industry to the total industry in a given region also accounts for per capita income levels, the amount of secondary-tertiary activity, as well as the pattern of population distribution and the region's responsiveness to income and employment fluctuations.[27]

Myrdal's cumulative causation principle offers another explanation of regional growth disparities. This principle is based on the interplay of the so-called "backwash" and "spread" effects.[28] The applicability of these two effects, that mean concentration and deconcentration respectively, varies in accordance to the degree of economic development.[29]

For example, less developed countries are bound to

have wider regional disparities than relatively more developed countries because resources in these countries have a tendency to concentrate on regions where the availability of related industries and social and economic overhead capital promise higher returns. In this case the "backwash" effects are stronger and the presence of external (agglomeration) economies polarize economic activity in a few geographic areas.

In more advanced economies, a highly developed price system and, in some cases, an established "equalizing" public policy, permit the exploitation of wage differences, the transmission of growth via an adequate transportation and communication system, and generally render resources more mobile. The result is that resources, overhead capital, and (mobile) external economies are more likely to be equitably allocated in space and, in these systems the "spread" effects are bound to be more dominant.[30]

It would appear, in the above context, that a policy aiming at regional decentralization must take into account the full extent of the "backwash" forces in operation and weigh the costs required to reverse those forces against any benefits that may emanate from the "desired" equalization.

The interesting correlation, which Myrdal makes reference to by assuming that underdeveloped countries are experiencing ever-widening regional disparities, is that the lesser the degree of economic development the higher the

cost of friction in overcoming regional polarization. Moreover, considering the dubious nature of any forthcoming benefits from decentralization, a less developed country will be less capable, or even willing, to devote substantial resources into this task.

On the other hand, more advanced economic systems are subject to a lesser need for decentralization since the "spread" effects are more or less automatic. Yet, they are in a position to afford it. Some writers have accepted the notion that degree of economic development is directly related to the intensity of regional differentiation. Lack of adequate regional data, especially from underdeveloped countries, has probably been the major factor for not having tested this hypothesis.[31]

With increasing economic development, equity may be gradually "purchased" with relatively little loss of efficiency or in an amount that can have no appreciable effects on growth. The quotation, below, from Friedmann and Alonso summarizes neatly this point:

> As a country approaches mature industrialization, policy interest in regional problems will noticeably decline. Regional differences become blurred as markets are unified, resources more fully utilized, and differences in the costs of location attenuated. With growing urbanization and improved transport-communication networks, intense regionalism will gradually yield as an ideological expression to a more pervasive cosmopolitanism. Relations will be more among cities--as a system of cities extends its influence over the entire country--than among regions. . . . Welfare differences among regions are likely to be reduced significantly . . . though pockets of backwardness may remain here and there--and consequently lose a good deal of their potency as a prime political

> issue. To some degree, public policy may still be addressed to the problem of lagging regions, but this will be regarded as a welfare problem stemming from the immobility of human resources rather than as a key issue for national economic growth. . . . The predominant effort in spatial planning will be shifted to problems of location and land-use internal to the structure of metropolitan areas. . . .[32]

The Theoretic and Policy Dimension of Industrial Decentralization

Decentralization is not a policy objective by itself (although it had been heralded as such in various regional development plans) but a means of achieving desired policy ends that cannot otherwise be met. It essentially involves a planned interference in a given spatial arrangement of economic and social activity that is considered to be economically, socially, or strategically undesirable. Such interference may be justified regardless of whether the geographic concentration of economic activity is a manifestation of the market's efficient resource allocation process, or an indication of the opposite, if it is said to have advantages that transcend allocative efficiency. These advantages may be of a military or political nature. If this is the case, regional balance is a legitimate policy objective even if it is attained at a cost. On the other hand, if planned decentralization aims at augmenting the market's resource allocation mechanism this policy's legitimacy would then depend on the development of pertinent criteria by which incurred costs are related to incurred benefits, so that relevant decisions

can be made on a rational basis.

A typical attitude with respect to the notion that decentralization could be guided by rational cost-benefit calculations has been expressed by F. Meyers who finds that there are circumstances under which "a dollar of social expenditure on subsidy to entrepreneurs to locate outside an agglomeration might save more than a dollar in social cost in a congested urban agglomeration."[33]

This statement is significant for two reasons: first, it constitutes the upper limit of the literature's involvement in this very crucial aspect of regional development, and second, it epitomizes the salient features of the prevailing philosophy of regional policy. Both as a guideline to policy, and as a theoretical formulation, this view stops short of describing all the ramifications of the problem. Aside from the fact that urban agglomerations are implied to give rise to social costs,[34] the usefulness of subsidies in controlling size is questionable unless a method can be developed to measure and relate social costs that congested urban agglomerations generate, to what was termed earlier as the incidence of locational economies. Such method requires the formulation of a single criterion to be used to determine first, the amount of subsidy required to stimulate decentralization, and second, whether a subsidy is required at all.

This criterion states that regardless of the amount of social costs incurred by a given level of industrial

concentration, subsidies must at least equal the industry's locational economies in order to have an impact on relocation patterns. Whether it is advantageous to society to embark on a subsidy policy or not depends entirely upon anticipated social costs per given increase in the degree of industrial concentration. A number of alternative subsidy strategies will be formulated after the meaning of social costs and locational economies has been clearly established.

In Figure 1, curve L represents net locational

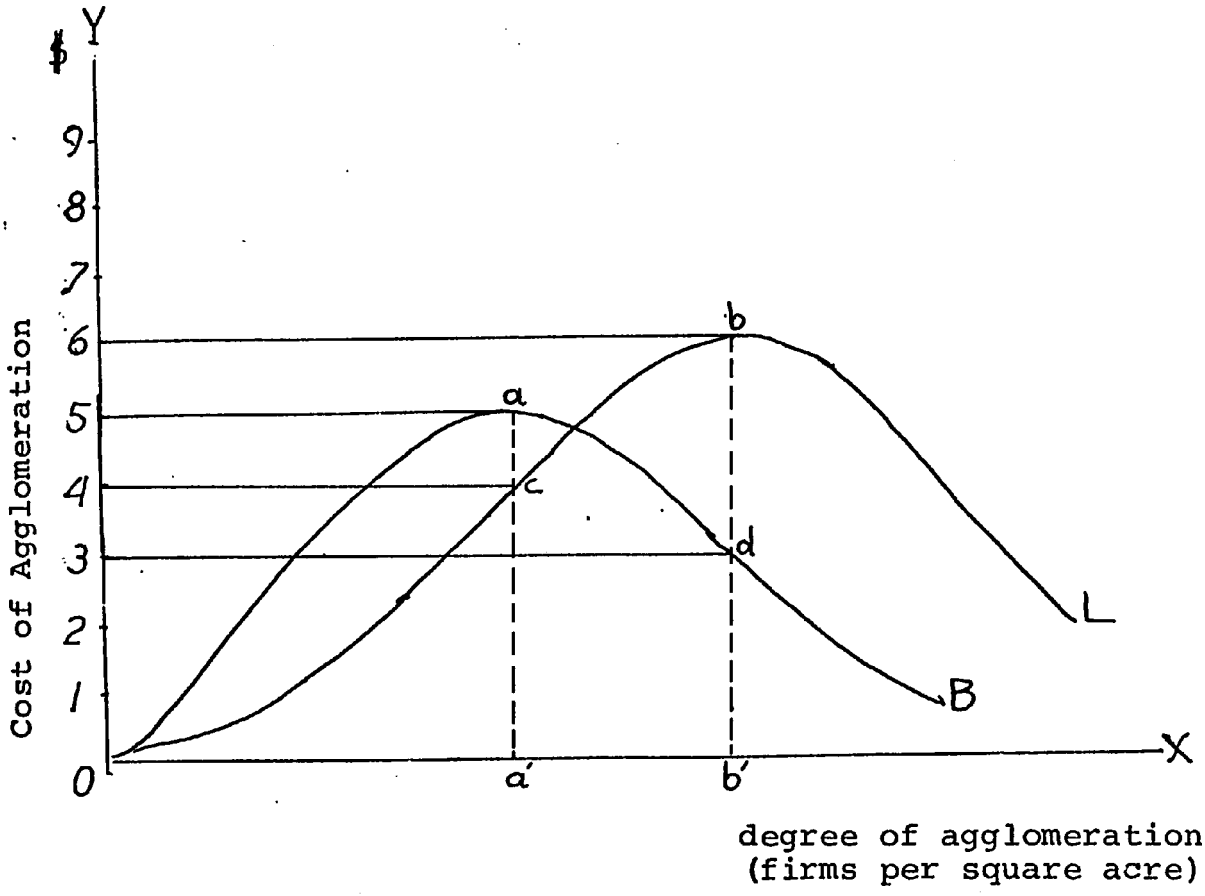


Fig. 1.--The relationship of social costs to locational economies in determining the level of subsidies for decentralization.

economies accruing to industrial firms and as a function of increasing agglomeration. These economies are realized in the form of enlargements in total output of these industries as increasing congregation of firms makes it possible for them to improve their access to skilled labor inputs, markets, raw materials, and take advantage of savings in transport costs and joint costs. The bell-shape of L denotes that after a point has been reached, say b, congestion sets in whereby high rents prevail as a result of the increasing scarcity of space, transport facilities become less functional, causing delays, and generally firms begin to experience locational diseconomies. Hence, curve L represents the net economies that can be realized at any given degree of agglomeration or locational economies minus diseconomies. The location of point b is not important for this analysis as long as L is shaped as depicted.

Curve B represents net social benefits accruing to society as a function of increasing agglomeration. As we move horizontally along the X-axis, society realizes tremendous benefits from the increasing number of industrial firms concentrating in a given area and as a portion of the locational economies shifts to society in the form of lower prices, higher productivities, incomes, etc. As industrial agglomeration continues beyond point "a" (0-a' on the X-axis) social costs begin to rise faster thus causing B to decline. These costs assume the form of social investments in expanding and renewing social overhead, physical deterioration,

high densities, high health hazards, etc. Therefore, a move from 0-a', where societal benefits are at an optimum, to 0-b', where locational economies are at their optimum, causes a relative social loss of $2 and a relative private (industrial) gain of $3. How can subsidies help prevent this situation and how much is necessary?

The following set of strategies clarifies this problem:

Shift from 0 a' to 0 b' in Figure 1	Gain or Loss to Society or Industry	Level of subsidy	Outcome
Possibility 1	Society - $4	$2	Society + $2
	Industry + 2		Industry + 2
Possibility 2	Society - $2	$4	no change
	Industry + 4		no change
Possibility 3	Society - $4	0(4)	no change (no change)
	Industry + 4		no change (no change)

Note: Figure 1 represents Possibility 2, however, given that curves B and L are structurally similar, but not point-wise, there are more possibilities but with same outcomes.

In all possibilities, subsidies must equal at least locational economies and this is a fairly testable assumption.[35] However, only in the first possibility does it pay for society to engage in a subsidization policy since a move away from its optimum costs more to it than it benefits industry. Therefore, society can compensate industry for not moving to a "congested" area, whereby industry receives the full benefit of its desired location, while it saves in costs that it would have had to bear had it been forced to move away

from its optimum position. In all the other possibilities decentralization cannot be said to have any effectiveness and industries would continue to flow into the "congested" area in accordance with their own locational expectations.[36]

The condition requiring subsidies to be equal to the locational economies has a substantial empirical validity since it is based on the convention that firms indeed assess the comparative advantages and disadvantages of prospective locations. The difficulties of measuring social costs are not as easily resolved. Although estimates of how much a new worker can cost to a government in a congested area have been made,[37] the difficulty of estimating society's share of the locational economies is such that it diminishes the practicality of this scheme.

The definition of the meaning of decentralization must be stated at this point. Decentralization covers a wider than hitherto described range of activities and it can aim at the geographic broadening of a government's administrative structure, its planning apparatus, or its decision-making framework as it affects certain functions and activities. Administrative decentralization is an increasingly important policy issue in developing countries where administrative resources are scarce and the training cost of personnel is high.[38] This problem refers to a) the relegation of responsibility from central to local authorities for the administration of (local) development plans, b) the relegation of authority to provide a service

locally, and c) the relegation of authority to deal with a function or functions over a given geographic area. In (a) decision-making need not be decentralized while in (b) and (c) the local authority is given a considerable amount of freedom to decide on a number of smaller issues.

The establishment of a regional planning authority, and more significantly, its specific authority and power, is an example of this case. In Europe, and especially in Eastern and Southern Europe, the administration of regional planning is still highly centralized in spite of the formation of local agencies with regional jurisdiction.

The decentralization of the planning function is a step further toward a horizontal decision-making model. The proliferation of agencies, along geographic and functional lines, as administrative decentralization should be called,[39] does not commit the central planning authority to the incorporation of the regional dimension into the process of national economic planning, but this becomes the case when the central authority allows the local authorities to influence decisions and actively participate in their formulation. In centrally planned economies with a so-called federal structure (U.S.S.R., Yugoslavia) there is a strong tendency to regionalize decision-making as it relates to purely regional matters. In market economies, on the other hand, with the notable exception of West Germany, the central planning authority has not regionalized the decision-making process in spite

of a more massive commitment to regional development. Greece, and especially France, are prime examples. This brings us to the consideration of decentralization as an economic policy as an operational device for the purposes of regional planning.[40] This device is largely unrealistic in a non-federal political system since investments cannot be made by agencies with no tax powers. Moreover, certain regional policies that require relatively complicated legal frameworks cannot be instituted by regional planning authorities that have no legislative potence. This is not to preclude cases in which pressure, political or otherwise, from local agencies has resulted in specific policies and plans, but to indicate that whatever the degree of fragmentation in economic policy the main issues are resolved at the national level. It is interesting then to examine what really amounts to an anomaly--the total commitment of almost all European nations to regional decentralization. These efforts are divided into three principal areas:

1. Industrial decentralization,
2. Urban decentralization, and
3. Regionalization of investment.

Other policies aiming at the equalization of regional incomes, the promotion of agriculture in slower growing regions, and redevelopment of stagnant regions, are also important elements of these policies.

Before we discuss briefly types 2 and 3 of regional decentralization, it will be necessary to review two

specific aspects of U.S. regional policy in an effort to provide a basis for reference and comparison. One is directly related to spatial decentralization, while the other is an example of what may loosely be called an income policy. Neither is part of an overall policy.

In the United States attention has been given to urban and regional decentralization as a means of reducing vulnerability to nuclear attack. Studies have shown that "a regional city organized on an ordered sprawl principle could operate at little or no economic disadvantage relative to (connected) urban areas."[41] Although unordered urban sprawl decongests urban agglomerations, its spatial connection to the urban nucleus offers no strategic advantage and therefore a disconnected growth (urban sprawl) process has been proposed whose size and volume would vary with the projected intensity of a nuclear attack.

The Soviet Union was preoccupied, before and after World War II, with similar considerations in its push to settle its Eastern frontier. There is no evidence, however, linking strategic to economic considerations. Such view of regional decentralization may be typical of a comparatively developed economy where interregional economic disparities are not of a substantial magnitude to warrant a serious commitment to regional development. Characteristically, recent U.S. concern with interregional income equality has not taken the form of massive expenditures to specifically dampen inequalities in the distribution of

regional income[42] but to adjust government defense and non-defense expenditures in a way by which each region would receive its "fair" share of it.[43] Since various regions have a competitive advantage in specific activities over other regions, proposals have been made to balance government expenditures so as to equalize opportunities and subsequently incomes.

Table 1 identifies the federal program from which each region receives its largest share compared to all other programs and the program from which it receives its smallest share.

TABLE 1

REGIONAL ALLOCATION OF U.S. GOVERNMENT PROGRAM EXPENDITURES

Region	Program in which Region Obtains Largest Share	Program in which Region Obtains Smallest Share
Far West	NASA	Farm Subsidies
Mideast	Defense	Reclamation
New England	Defense	Reclamation
Great Lakes	Highways	Reclamation
Plains	Farm Subsidies	Defense
Rocky Mountains	Reclamation	Corps. of Engineers
Southwest	Reclamation	NASA
Southeast	Education	Reclamation

Source: M. Weidenbaum, "Shifting the Composition of Government Spending Implications for a Regional Distribution of Income," Regional Science Association, 1966, p. 175.

Weidenbaum's major findings support the idea that specialized regions receive more than their share in the area of their specialization, and less in non-specialized

activities. Regions that are not specialized, primarily in defense work, receive more non-specialized funds to compensate for it. The result is a regional expenditure distribution pattern that is neutral to a given income distribution. However, considering that specialized regions being more industrialized have higher per capita incomes than other regions, shifts in the federal budget from defense to non-defense, activities would favor disproportionately "disadvantaged" regions and would tend to narrow income inequality. Such shifts may constitute the (needed) rational basis for the institution of a genuine regional policy in the United States and outside the programmatic confines of such agencies as the Forest Service or the Bureau of Outdoor Recreation.

Conscious shifts in government expenditures motivated by a policy of regional income inequality have not been very popular with Congress, perhaps recognizing the fact that a sweeping reallocation of government procurement policies to meet the needs of lagging regional economies may compromise the effectiveness of the nation's technological and scientific programs.[45]

This position, based on a system by which trade-offs between efficiency and equity are established, has probably some merit when income equality impinges upon critical resources. Other choices are perhaps open to society where income equality may be pursued at a lesser cost. The evidence is scant.

The Theoretic and Policy Dimension of Urban Decentralization

Urban decentralization has a very specialized meaning and it refers to the dispersal from congested and over-developed regions via the development of more distant regions or the building of satellite cities around the cities or areas in question. In addition to the role that the Weberian[46] agglomeration economies play in determining an urban-industrial size, including scale, localization, and urbanization economies,[47] the concept of the optimum size of a city should also be examined. The reason for this is that the balance of agglomeration economies over diseconomies forms, at least, the theoretic basis of urban decentralization, while it is inherent in this analysis that some notion of size optimality be present in order to make this analogy.

In discussing industrial decentralization, above, it was implied that there is a definite relationship between level of economic activity and urban size. This relationship is known in urban analysis as economic base theory. Urban size, according to this theory, is the effect of changes in the employment and income structures and not the cause of them. But, in dealing with centralization, urban size is primarily a physical concept whose manipulation generates a number of social effects. If urban decentralization, then, is conceived as the deliberate alteration of city size, two questions arise that must be considered:

first, why large cities are said to be uneconomical, and thus interfer with economic development,[48] and second how can city size be controlled? The popularity of new towns among various countries[49] testifies to the notion that large cities are indeed uneconomical while the implicit faith that planners have in static optimum city-size formulations does not, unfortunately, extend to prescription of the means of achieving it.[50]

It is therefore natural that most arguments in favor of urban dispersal are made on the platform of (a) the unique existence of optimum organizational sizes, be it spatial, population, etc., and (b) the constant interplay (friction) of agglomeration economies and external diseconomies of size. A case against urban concentration must be made on these premises. Several notions of optimality exist in the literature. C. Tiebout[51] provides us with the notion that the optimum size of a community is defined in terms of the number of residents for which a "bundle of services can be provided at the lowest average cost." As average cost curves shift with technological improvements in the community service-producing mechanism so does the number of consumers, thus causing the community to expand. L. H. Klaassen[52] offers a more imaginative formulation which calls for a distribution of population at which marginal income in all cities is equal.[53] This requires (see Figure 2) that in building cities one should aim at maximizing the contribution of all cities to the total

national income.

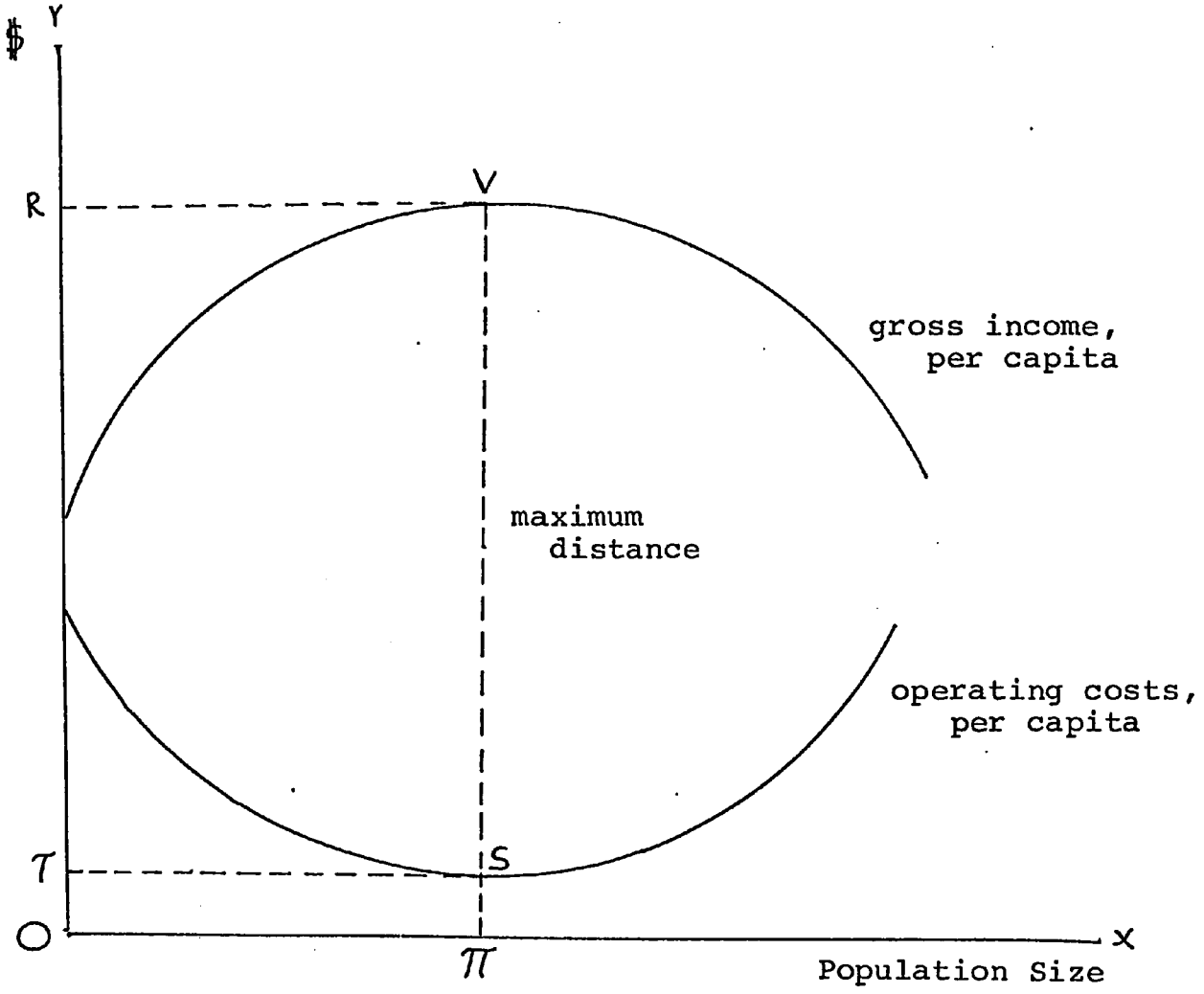


Fig. 2.--Klaassen's formulation of an optimum city size.

Hence, at population size $O\pi$ national income OR is maximized at OT cost. It should follow that cities beyond point π are natural targets for decentralization. Klaassen finds specific applications of this formula to Dutch regional policy. He states that the central government should not indiscriminately support migration from less developed to developed areas. In Holland the overcrowding of large

agglomerations is considered so disastrous for the efficient functioning of the whole economy that not only are no measures taken to promote migration to these agglomerations, but some are taken to prevent a further influx of workers.[54]

Another formulation by W. Isard[55] (Figure 3) is an extension of Tiebout's model with a new variable called community participation potential. As in Tiebout's model line OS (at point P of the cost curve EF) indicates the size of the community that satisfies the efficiency criterion. However, participation is assumed to decrease with distance from the community's center and what may be considered a fairly good amount of participation, at OR, is not as efficient.

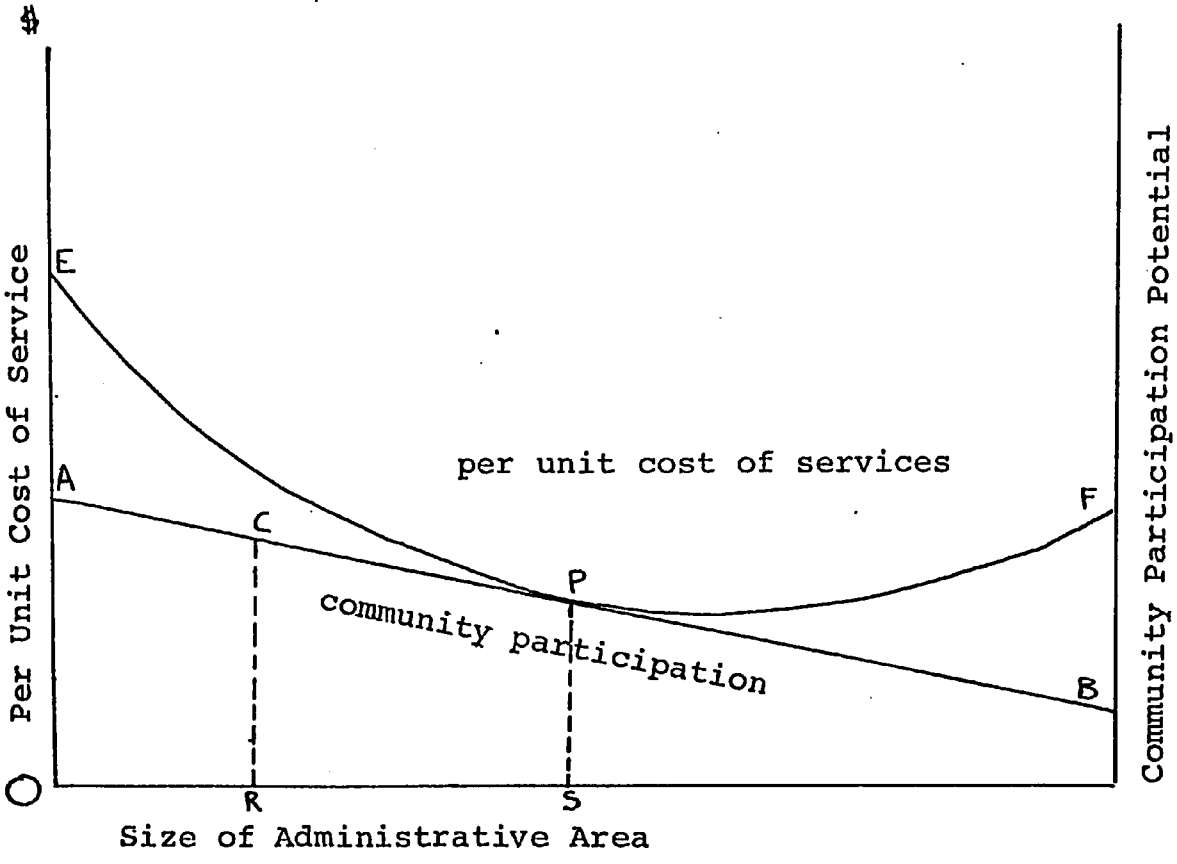
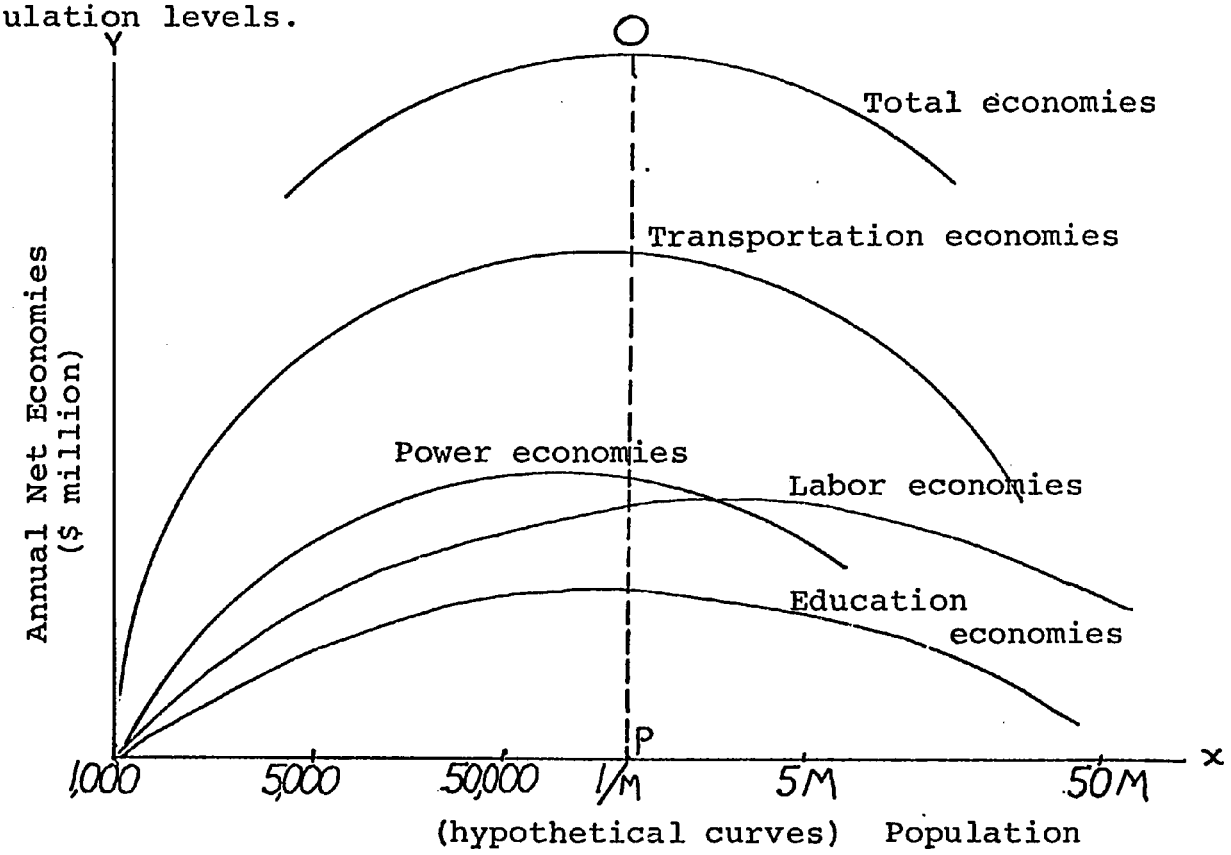


Fig. 3.--Isard's formulation of an optimum city size.

Isard[56] also (Figure 4) presents another formulation that, in this instance, shows a city's optimum size from the standpoint of net economies enjoyed at alternative population levels.



Clearly, a summation of the individual economies curves result to the Total Economies curve whose optimization at Point P reveals vertically the desirable population level.

Fig. 4.--Net economies as determinants of city size optimality.

Mishan[57] has also an optimum-city-size concept in mind when he suggests that the interplay of size economies and diseconomies determines urban expansion paths. However, he asserts, the "asymmetry of the forces at work" tends to promote urban bigness because economies and diseconomies are

not balanced in a "providential" manner to produce an equilibrium (optimality).[58]

Mishan's view brings into sharp focus what he calls the "social conflict of external diseconomies" which distorts the use of national resources simply because size diseconomies are costs borne by society, whereas size (agglomeration) economies are private gains enjoyed by individual firms. Social investments in activities that are directly related to urban size do not constitute the best use of resources if it were possible to control size or at least, shift some of the cost to industry. This raises the interesting question of whether it should be a more equitable scheme to charge industry its "fair" share of social cost, and let this act as a deterrent to further industrial concentration, rather than offering a subsidy. Meier, again in the Puerto Rican case, reports that although the cost to the government of a decentralized industrial job is $500, it was offset by a $500 reduction in investment in health and welfare, and this postpones the visible need for approximately $6,000 more investment per industrial job in good-quality housing, school buildings, streets and associated services.[59] Such investments cannot be considered social costs but allocations that would have to come from available funds for productive purposes. The critics of urban centralization would argue that industry cannot, and perhaps, should not, be decentralized so as to reduce the need for social investments. The common error made in

urban decentralization schemes, and especially in the British New Towns policy, is that the dichotomy between urban and industrial decentralization is overlooked.[60] New towns are expected to take the pressure off large cities because it is assumed that jobs and industry will follow the people to the new towns, but this is simply not true in most known cases.[61]

Figure 5 shows the conditions requiring urban decentralization, and this reflects largely the position of the decentralization proponents.

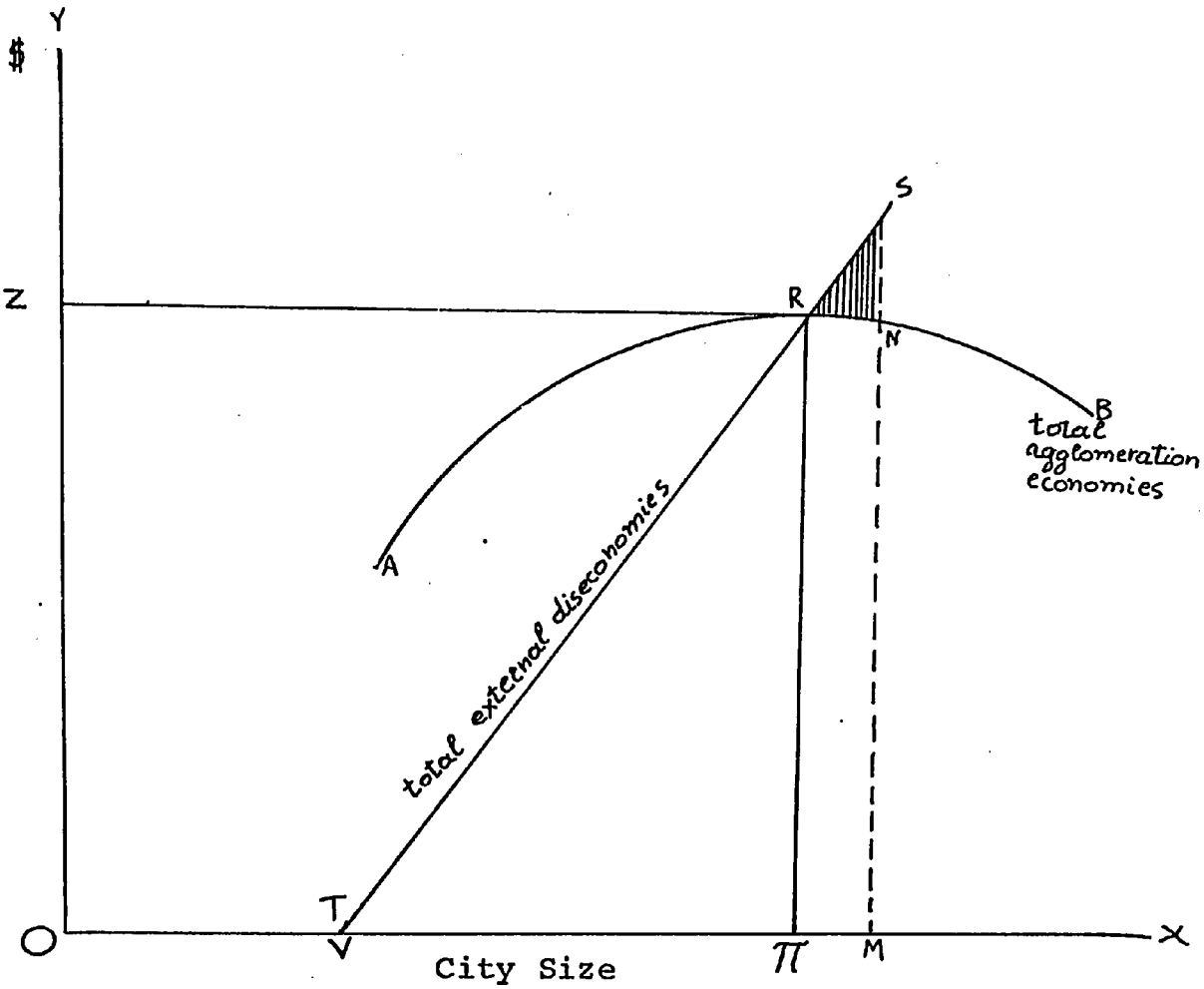


Fig. 5.--City size as a function of economies and diseconomies.

Total agglomeration economies (AB) are patterned after Isard's formulation (Figure 4). The newly introduced curve TS depicts total external diseconomies which become positive when city size OV has been reached. The slope of the TS curve is not the extra social investment per additional unit of size (population), but the extra social cost (congestion, poor health, slum housing, etc.) per added unit of size beyond optimum size OV. At OV average unit cost is at a minimum, as Tiebout would have it.

As an urban agglomeration proceeds beyond OV, extra social cost is matched by an increasing amount of agglomeration economies until, at R, social cost equals total economies.

At size 0π the agglomeration is not at its optimum (after Tiebout and Isard--Figure 3), but if a decentralization policy is instituted anywhere between V + 1 and π - 1, it must be based on what has been called in this paper a method of trading off equity for efficiency. Beyond point π, say at point M, society experiences severe social losses (shaded area RSN) and the formulation of an effective decentralization policy is imperative.[62]

In a non-federal economic system it is important to view the entire city-size distribution pattern on the assumption that losses at the upper section of the city-size distribution curve may be balanced with gains at the lower part of the curve. This would imply that although there are large "uneconomical" cities in an economy the system of

cities as a whole is balanced. The findings in this respect are not conclusive.

B. J. Berry, for example, finds that neither a rank-size (Pareto)[63] nor a primate[64] city size distribution are uniquely associated with degree of economic development or urbanization.[65] This means that if the assumption that large cities give rise to enormous social costs is valid (this assumption has been tacitly made by decentralization proponents and forms the basis of European regional decentralization policies) decentralization may have a dubious effect on economic development. Or, at best, it should not be adopted with the intent to promote growth. On the other hand, countries with primate city size distributions may be more inclined to consider urban decentralization as they are the ones to experience a keener pinch on their resources, especially since the lack of intermediate-sized cities produces more costs than benefits.

It has been noted already that there is a dearth of empirical studies to support urban decentralization. Most of the existing studies[66] while noting that in large cities per capita incomes are higher than in small cities and rural areas, indicate that (a) crowded living conditions are accentuated in large agglomerations, and (b) per capita costs of urban services and operational and maintenance costs are higher in large cities.

In the relatively more documented case of India the following data are available (see Table 2):

TABLE 2

ROOM OCCUPANCY AND PER CAPITA LIVING SPACE IN INDIA

Families Living in One Room or Less	
Rural	34%
Urban	44%
Four biggest cities	67%
Calcutta	79%

Households with Per Capita Floor Area of Less than 50 sq. ft.	
Rural	14%
Urban	21%
Four biggest cities	33%
Calcutta	70%

Source: C. Bauer Wurster, "Urban Living Conditions, Overhead Costs, and the Development Pattern," in India's Urban Future, ed. by R. Turner (Berkeley: University of California Press, 1962), p. 280.

Per capita costs at corresponding city sizes are even more dramatic. These differences in costs by city size[67] illustrate that large cities of metropolitan size are very expensive but, of course, quality of services is not included in these calculations (see Table 3). Marginal costs by city size could be employed here to show more clearly how cost increases with size (see Table 4).

It is evident what the conclusion of this analysis should be, but any such conclusion would not have much substance. B. Harris, however, argues that "urban growth cannot be fully decentralized to reduce development costs (assuming that the savings in promoting medium-sized cities are used for general development--author) since such decentralization would decisively undermine the prerequisites of sound

TABLE 3

PER CAPITA COSTS OF URBAN SERVICES, MAINTENANCE, AND RECURRING EXPENDITURES BY CITY SIZE[a] IN INDIA
(in rupees)

Major Head of Development	City Size					
	Over 1 million	500,000 to 1,000,000	100,000 to 500,000	50,000 to 100,000	20,000 to 50,000	10,000 to 20,000
Urban Services						
Water Supply	65.0	47.00	39.00	30.00	22.00	18.00
Sewage	75.00	65.00	55.00	45.00	34.00	28.00
Road Construc.	81.00	70.00	41.00	29.00	21.00	16.00
Const. of storm water drains	41.00	29.00	26.00	22.00	20.00	17.00
Street Lighting	30.00	25.00	22.00	20.00	19.00	14.50
Horticultural operations	15.00	13.00	10.00	7.00	5.00	2.50
Total	307.00	249.00	193.00	153.00	121.00	96.00
Operation-Maintenance						
Water Supply (treatment)	10.80	10.20	9.80	8.64	7.56	7.42
Sewage of sewage disposal	12.20	11.90	10.80	9.30	8.70	8.20
Road Construction	2.50	2.20	1.80	1.35	1.20	1.10
Street Lighting & Electric dist.	3.00	2.85	2.50	2.30	2.15	2.00
Horticultural operations	0.50	0.38	0.20	0.08	0.06	0.05
Total	29.00	27.53	25.10	21.67	19.67	18.77
Recurring Expenditure[b]						
Education	6.00	5.00	4.00	3.00	2.00	1.00
Health	3.00	2.00	1.00	0.75	0.50	0.25
Total	9.00	7.00	5.00	3.75	2.50	1.25

[a]Cities of less than 10,000 (about 1,110 towns) and 7% of population are omitted.

[b]On an annual basis.

Source: "The Price of Unwise Urbanization," Part I, p. 50 and Part II, p. 48, Quarterly Economic Report, Nos. 50 and 51 (no date).

industrial development."[68]

TABLE 4

MARGINAL COST OF URBAN EXPENDITURES BY CITY SIZE IN INDIA

Type of Cost	City Size				
	From 10-20 - 20-50	From 20-50 - 50-100	From 50-100 - 100-500	From 100-500 - 500-1 M	From 500-1 M - 1 M
Urban Services	25.00	32.00	40.00	56.00	58.00
Operation-Maintenance	0.90	2.00	3.43	2.43	1.47
Recurring Expenditures	1.25	1.25	1.25	2.00	2.00
1st derivative	27.15	35.25	44.68	60.43	61.47
2nd derivative	. .	5.10	9.43	15.75	1.04

Source: Calculations based on Table 3.

The case for urban decentralization is therefore weakened by the inability of its proponents to show first, that it does not retard industrial development and second, that its very cost is less than savings realized from reduced social costs.

Another study, by G. M. Neutze,[69] shows relevant social costs, associated with various sizes of Australian cities which is a better decentralization policy criterion than simple costs of urban services by city size.

Neutze agrees with Mishan that the interplay of external economies and diseconomies should determine what policy be adopted and he concludes that the external

diseconomies of large Australian cities far outweigh any economies.

Neutze notes, for example, that Sidney's traffic congestion is such that each new resident costs £32.4, while a new resident costs only £0.1 in the city of Wagga. Hence, for every person directed to Wagga there is a saving from just traffic congestion of about £32.3.[70] This is a basis for the institution of an Australian New Town policy,[71] much in the British fashion.

Neutze's solution is a partial one. Already, we have indicated in Figure 5 that cities at the OV + 1 size range develop social costs that do not necessarily cause any special problems as long as they are exceeded by the total agglomeration economies. To decentralize or even to propose cities of the OV size range (when one or two agglomerations accumulate sizes of the OV + 1 size range) misses the point entirely. Yet, this is Neutze's proposal of new towns as influenced by Australia's primate city size distribution and his least-cost per given city size calculation.[72]

Thus far, we have surveyed some of the standard arguments for and against urban decentralization, and we have noted that new town policies have received wider acceptance among various countries largely on the strength of the optimum city size assumption. Optimality is the logical corollary of the notion that large urban agglomerations are uneconomical and therefore, there must exist a

scale of urbanization at which resource waste is minimal or preferably non-existent.

We shall now survey the position of a group, consisting of what may be called the Technologists and Ekisticians,[73] which is in conflict with the decentralization proponents. This conflict has not received wide attention in the literature simply because the Techno-ekisticians do not dispute the validity of the decentralization argument. But they ignored it since they assume that urban centralization is inevitable.[74]

The Techno-ekistic position is fundamentally based on the following premises:

1. The condition toward which the major societies of the world are moving is 95-99 percent urban or post-industrial.[75]

2. The condition toward which (and as a result of the above) the world is moving is the formation of the Ecumenopolis (City of the World).[76]

3. There exists a large portion of society's stock of technology that is relatively unused and not made applicable to solving urbanization problems.[77]

4. The Law of Diminishing Returns can be defeated by resorting to extra human organization and copious use of communications which still exhibit economies of scale.[78]

These premises may be distilled to the single statement that it is both technologically possible and feasible to structure a society and distribute it over space in a fashion by which urbanization can be transformed into an efficient process and suitable to a long period of economic development.

This has special significance for developing countries whose rate of urbanization is much larger than their economic growth rate.[79] However, it is also argued that, although economically developed, primarily western, societies have sufficient technological resources to potentially cope with their urban problems,[80] their experience in building contemporary metropolises falls short in meeting the minimum needs of urban aggregates in non-western countries.

Hence, at least in a non-western context, the Techno-Ekistic school of thought finds urban agglomeration a desired course of action if the right technological means can be found to reprogram the sequence of urbanization so as to obtain economies of scale instead of the present diseconomies.[81]

The survey of British practices and Soviet attitudes towards urban decentralization, and as they affect the building of new towns, is in order at this point. The ekisticians have also designed new cities (Karachi, New Bagdad, Caracas, Brazilia) not with the intent of relieving urban pressure, as the British new towns have sought to do, but with the purpose of achieving a "total" shell within which urbanization can take place freely.

The British experiment with new towns, that has culminated in the celebrated New Town Policy, represents a singular case of western commitment to urban decentralization.[82]

This experiment was originated with the Barlow

Report of 1946 and it was intended to decongest London and reduce its excess or "over-spill" population. Its overall effectiveness has been dubious. Some critics have dismissed it as an anachronism from the Barlow Report and as a misinterpretation of it since the original intent was industrial dispersion.[83] Others questioned whether any inter-regional shifts of plants and population were induced, while they suggest that new towns produced the opposite result of further congesting London and the Home Counties.[84]

The policy's supporters, who are largely affiliated with its conception and implementation, are pointing out that the policy's intent of moving population and industry from "wrong" locations to "right" locations has been largely successful.[85]

This latter view has probably prevailed because the Ministry of Housing and Local Government has proposed the building of three more new towns, one of 250,000 people and two of 150,000 each.[86]

L. Rodwin, a prominent student of new towns, has convincingly argued that the failure of the British experiment was based on the following reasons: (a) the lack of justification concerning the location and number of new towns from the national point of view; (b) the disregard to the question as to what pattern of regional development contributes most to the welfare of Great Britain in terms of increased per capita income, minimum unemployment, etc., and (c) the absence of a clear national policy framework

for regional development.[87]

The first reason carries an implicit contradiction between the policy's major assumption of the uniqueness of the optimum size of a city and its subsequent development based on expediency rather than along a Löschian framework of urban networks. This reiterates the fact that if city-size optima are real, the spacing, number and location of these cities are the overriding considerations in adopting a new town policy.

The second reason shows the irrelevance of new towns to specific developmental objectives, and in the case of Great Britain, the lack of understanding between physical and economic planners. Invariably, new town schemes[88] take the form of site planning where the scale, interrelationship, and spatial distribution of internal to the city elements (streets, buildings, parks, etc.) are the only variables under consideration.

The third reason is probably the most significant for it stresses the fact that British regional developmental policy is not guided by explicit national policy objectives. The amount of success or failure attained by the British has influenced to a large extent, contemporary attitudes toward new towns. The United Nations, for example, has adopted a series of recommendations that reflect the dilemma with respect to the efficacy of new towns.[89]

The principal recommendation, for example, states that "a new town must be considered as one element in a

coordinated scheme of regional and national planning, not as an isolated exercise in physical planning. . . ."[90] The United Nations Symposium on new towns of 1964 did not make a clean break, however, from the burden of city size optimality and proposal for further research No. 13 calls for "special consideration to be given to determining the optimum, as well as the minimum size of town to achieve a high level of social services, economic efficiency of construction, and development of the regional and local economy."[91]

Soviet concern with urban decentralization, on the other hand, has definite ideological foundations. The desirability of limiting the growth of the (excessively) large agglomeration has been said to be necessary in order to "insure a more uniform distribution of the productive forces in the U.S.S.R."[92] Uniform distribution of the productive forces, outside its equalitarian implication, is consistent with the broader objective of insuring maximum productivity of social labor. This single criterion, as it will be discussed later, guides Soviet regional policy.

Soviet concern with urban decentralization has been triggered by the fact that induced (eastward) migration has suffered a reversal. Poor living conditions in the Soviet East as compared to the Soviet West have slowed down eastward (to Siberia and Kazakhstan, primarily) migration, and there is evidence that in spite of higher wages in the East migration is reversing itself back to the West.[93]

Accordingly, in 1961, the Communist Party stated that an effort will be made to limit the size not only of the largest cities, but also of excessively large urban agglomerations around Moscow (population 7,884,000), Leningrad (3,579,000), Donetsk (1,409,000), Gorkiy (1,372,000) and Kharkov (1,322,000)."[94] It was subsequently prescribed that enterprises and institutions removed from the central city will be relocated not only in satellite places[95] but in many cases beyond the limits of the urban agglomeration, or even in other economic regions.

Epigrammatically, urban decentralization was found to be based on strong optimum size considerations and new town policies, especially the British policy, depend heavily on this concept. Concurrently, it was argued that this concept is incomplete and of little operational value unless social costs are separated from size, as well as agglomeration economies accruing with larger scale of human habitation. A model has still to be developed to account for both the social benefits of industrial concentration and social losses from sheer size, congestion, and improvements in the quality of life. Our analysis has hopefully indicated the limitations and prospects of this important problem.

The Regionalization of Investment

The allocation of state investment funds is an effective means of leveling off regional disparities. There are two types of public investment: productive and social

(infrastructure) investment. From an economic standpoint, the undertaking of productive investment is less useful in regional equalization objectives than that of infrastructure. This is so because the feasibility of these investments is defined in terms that is irrelevant to the degree and magnitude of regional disparities. It is often the case that high benefit-cost ratios in state projects require investments to be concentrated in already developed regions.[96]

On the other hand, the provision of infrastructure, which often absorbs from about 50 to 70 percent of available public funds for investment, is more suited for the pursuit of regional equalization objectives since it is not subject to hard economic calculations.[97] However, this provides no guidelines as to how to allocate funds from the total budget among productive and non-productive expenditures.[98]

It should be apparent that the ability of a country to engage in a policy of regionalization, and on a scale that may produce results, should depend on the overall magnitude and availability of funds for overhead capital. The supply of these funds is, in turn, a function of existing and planned opportunities for productive investment and the sums required in large urban agglomerations. The former constitutes a necessary limitation to the size of the overhead budget while the latter constitutes a further, but optional, limitation. Countries with a well

developed private investment sector that is presumed to relieve the strain on the public investment budget and a city-size distribution of the rank-size type are expected to be in a better position to institute effective regional equalization policies.

An interesting relationship should be noted at this point. We have mentioned already that productive investments have incidental equalizing effects. These effects can be planned because successive overhead capital allocations can create favorable conditions for the inducement of industry which will have a bearing on public as well as private investment decisions.[99]

The question often asked is how much and what type of infrastructure is necessary before a region is ready to compete on its own for its share of industry with other regions.[100]

The best we can do to answer this question is first to find the proper criteria or guidelines by which regional (overhead) capital is to be allocated among less developed regions, and second, to observe the effect of these allocations on the regional disparities over a period of time. When a regional balance is restored, studies should be undertaken to determine the competitiveness of the developing regions.

The identification of the guidelines for the provision of infrastructure should not prove to be a difficult task since most countries have basic regional data. What

is relatively more difficult is to measure the effect of this type of investment on incomes, living conditions, employment, and other indices used in comparisons of inter-regional well-being.

Regional Development: Some Policy Formulations

It is important for an adequate survey of European regional (decentralization) policy that some basic relationships be examined with respect to:

1. The functional relationship between the type of regional structure and the degree of economic development among countries,
2. The functional relationship between type of regional structure and level of commitment to regional development in a given country; and
3. The overall relationship between the magnitude of urban and/or industrial agglomeration and specific decentralization policies.

The first relationship deals with the question of whether economically advanced countries are more regionally integrated than less developed countries. Hence, if there is a positive correlation between degree of economic development and the degree of spatial concentration of economic activities, more advanced countries would be relatively less committed to regional development. The workings of an established market could be expected to do the job of integration much more efficiently than any planning scheme that would after all have to simulate the way the market itself operates. For example, unequal distributions of population in space and the resulting migration patterns

can be said to reflect the distribution of opportunities in the same space. In an advanced economy, with a multi-point competitive development, the prospects of urban agglomeration in a single area (and the problems that such agglomerations give rise to) are rather remote, while population distribution patterns resemble to a great extent the distribution patterns of opportunities.

In a less advanced economy, with a single-point development, and less regional integration, the market cannot be relied upon to alter migration patterns that precipitate heavy population concentrations and any contemplated interference must be sufficiently large to produce some results. Logic would require that if less advanced countries exhibit a higher degree of regional inequality they should also be more heavily committed to regional development. The third relationship, above, should be consistent with the other two since the heavier the agglomeration the more need of formulating pertinent decentralization schemes. In reality, none of these relationships behave in the above prescribed manner. The presence of lagging regions and unequal development is as typical in underdeveloped countries as it is in developed countries.[101]

In fact, it may be argued that more developed nations have a more heterogeneous regional structure, as a group, than less developed ones, again as a group.

The European picture is especially confusing, perhaps because more information is available about it than

any other regional group of nations. With admittedly inadequate indices of regional performance and structure, the evidence is that concern with regional development bears no relationship to either the need for it or ability to pursue it.

Among European market economies,[102] it is equally difficult to find a common motive for the pursuance of regional policies, especially since sporadic regional planning efforts have taken place well before the Treaty of Rome (1958)--specifically the Treaty's Article 92/3 calling for the economic development of stagnant regions.[103]

The relationship between the type of regional structure and the corresponding degree of economic development is formally stated in Table 5.

Regional characteristics are listed vertically and in a somewhat logical sequence while their behavior is traced horizontally from a low to a higher degree of economic development. We are not particularly concerned with how a society's level of economic development is measured and any standard definition is applicable in this case.[104]

The first characteristic is a technological and policy relationship; as improvements in transport are being made, moving horizontally, and as transportation policy matures to the point where transport rates are being equalized to favor disadvantaged regions, the spatial distribution pattern of resources becomes equal.

TABLE 5

CHARACTERISTICS AND INTENSITY OF REGIONAL PHENOMENA IN A DEVELOPMENTAL CONTEXT

Regional Characteristics	Range and Degree of National Economic Development		
	Backward	Transitional	Developed
Spatial Pattern of Resource Distribution	critical, or substantial, or equal	substantial	equal
Factor Mobility	very low	low	high
Interregional Migration	high	substantial	low
Point Development	few poles	several poles	many poles
Regional Disparities:			
loc. economies	high, concentrated	moderate, spreading	low, vanishing
trans. comm. networks	not established	establishing	complex
per cap. incomes	extrem. unequal	unequal	nearly equal.
reg. infrastructure	little, unequally dist.	minimal, spreading	well developed
market integration	non-existent	forming	nearly complete
opportunities	few, local.	several, spread.	many, equalized
regional diversification	limited to largest reg.	few regions achieving diversification	all regions somewhat diversified
Relations among cities	few, largely political	becoming functional	highly organized
Integrated hierarchies	none	developing	established
City Size Distribution	primate	intermediate	lognormal
Welfare as a Regional Problem	not recognized	recognized, growth interfering	possibly, the only regional issue
Urban/rural Mix	very low	low	higher
All Factors	centralized	spreading	integrated

In the United States, for example, public control of transport rates has played a major role in facilitating interregional competition and influencing the locational pattern of industry.[105]

Factor mobility is another characteristic that varies with economic development; resources being more immobile at the lower end of the economic development ladder.

Regional disparities (line 5 of Table 5) are perhaps more responsive to changes in the degree of economic development than any other single regional characteristic. Per capita incomes and the regional distribution of infrastructure capital bear the strongest connection with economic development.

It is, of course, impossible to quantify these regional characteristics for a representative cross-section of countries and relate them to economic development because regional data are extremely scarce. Most writers agree, on a qualitative basis, that there is a basic compatibility between "national" and "regional" structures and economically advanced countries are usually spatially integrated. In Table 6, an attempt has been made to show how strongly these factors are correlated, if at all, for several countries, but the results are not conclusive.

Since our objective is not to test this hypothesis, for such a task would require an enormous amount of data,

TABLE 6

A SIMPLE CORRELATION BETWEEN DEGREE OF ECONOMIC DEVELOPMENT AND SOME MEASURES OF REGIONALIZATION FOR SELECTED COUNTRIES: 1960-1963

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Countries	Ranking by GNP per capita	Income Distribution	Regional Income Differentiation	City Size Distribution	Regional Migration as a % of Tot. Pop.	Urban/ Rural Mix	Urban Agglomeration as a % of Urban Population	Mfg/Ag. Employment Mix
United States	$3,020	28%	1.70%	lognormal	1.50%→2	65/35	15%	34/6
Sweden	2,040	29	x	primate	x	x	x	41/10
Canada	1,940	x	7.05	intermed.	.37→2	51/49	12%	34/9
Denmark	1,650	27	x	primate	x	x	x	42/7
Germany	1,540	33	x	lognormal	x	63/37	15%	49/11
France	1,540	37	11.25	primate	1.00→5	55/45	11%	41/18
Norway	1,520	25	10.00	intermed.	0.12→1	31/69	40%	36/19
England	1,500	28	7.44	intermed.	1.73 4	70/30	12%	47/3
Belgium	1,460	x	8.04	lognormal	0.12→2	70/30	14%	45/6
Finland	1,440	33	12.48	lognormal	x	38/62	30%	x
Netherlands	1,260	30	1.06	primate	x	x	x	43/8
Poland	930	29	7.21	lognormal	x	42/58	15%	23/45
Hungary	890	27	x	x	x	60/40	31%	27/40
Italy	850	x	15.51	lognormal	0.70→6	74/26	16%	41/25
Spain	530	x	x	primate	x	70/30	20%	x
Greece	510	x	46.88	primate	2.11→1	43/57	50%	13/54
Yugoslavia	390	32	13.36	intermed.	x	40/60	29%	x

See next page for sources.

TABLE 6--Continued

Source:

Column 1 The selection of the countries listed was determined by the availability of pertinent data, and these countries' relation to our geographic sample. The data were taken from the following sources:

Netherlands, Maandschrift von het Centraal Bureau voor de Statistiek, August 1965 and September 1964.

England, Census 1961: England and Wales Preliminary Report.

U.S.A., Statistical Abstract of the United States, 1967.

Belgium, Annuaire Statistique de la Belgique; Tome 83, Annee 1962.

Spain, Espana Anuario Estatistico, 1966, and Banco de Bilbao.

Poland, A. R. Kuklinski, "Criteria of the Componative Assessment of Economic Levels of Different Regions" (unpublished), also Statistical Yearbook of the Polish People's Republic, Warsaw, 1961.

Norway, Statistik Arbor, 1964, Statistical Yearbook of Norway.

Yugoslavia, S. Dabcevic-Kucar, "Regional Planning in Yugoslavia," Regional Science Association, XII (1963) and Yugoslav Survey (U.N.), May, 1967.

Finland, A. Kiiskinen, "Regional Problems and Policies in Finland, Regional Science Association (1966).

Italy, Annuario Statistico Italiano, 1962.

France, Annuaire Statistique de la France, 1965.

Greece, Statistical Yearbook, 1960 through 1968.

Other Sources of Data, U.N., "Incomes in Post-War Europe: A Study of Policies, Growth and Distribution," Geneva 1967, U.N. Demographic Survey of 1966.

Column 2 The countries in Column 1 were ranked in terms of per capita GNP taken from International Bank for Reconstruction and Development, "Atlas of Per Capita Product and Population," Second Edition, November, 1966.

Column 3 The percentage is the maximum equalization percentage, or how much of total national must be redistributed to produce perfect income equality.

Column 4 Same as in Column 3. The procedure is: calculate each region's percentage of the national population, multiply it by 100 which would yield this region's fair share of total regional income and subtract it from the region's population percentage times its actual income index.

Column 5 The following meanings are attached: primate, where one or two very large cities dominate the entire city distribution; intermediate: where in the distance between a very large city and the next group of cities there are several cities of intermediate size; lognormal: size distribution fits a straight line (Paretian type).

Column 6 Percentages show population movements for usually a five-year period. The numbers pointed to by arrows show the number of regions gaining population, via migration, from the rest of the nation.

Column 7 The urban/rural mix has been defined for city sizes above the 5000 population mark. This measure was taken to eliminate diversities in the definition of urban which ranges from places of 2500 people (U.S.A.) to places of 10,000 people (most socialist countries).

Column 8 This shows the percentage of total urban population concentrated in the largest (recorded) city size group.

Column 9 This shows the proportion of manufacturing and agricultural employment of total employment.

Note: These data are not registered for the same year; some are for 1960 and most for 1961. In a few cases, information was available for 1962 and 1963. This is due to the differences in census years among nations. X means not available.

but to afford us a glimpse into the regional structures of the European countries under consideration. We can then view Table 6 as fulfilling this function only. Comparisons are, however, unavoidable and even useful in at least feeling out the intensity of regional phenomena as it relates to varying degrees of economic development.

It is apparent in Table 6 that degree of economic development, as expressed in per capita gross national product, bears no visible relationship to any regional index. Nor is there a correlation between any two indices for all countries involved. For example, the national and regional income distribution patterns are quite dissimilar for any given country. The Scandinavian and Eastern European countries have a fairly low national income inequality but higher inequalities in their regional income distributions. The remaining countries exhibit a reversed pattern. Of greater importance is the positive correlation between the degree of regional income inequality and economic development which substantiates the proposition, formulated above, stating that economically advanced countries are more regionally integrated than less advanced countries.

In Figure 6, the percentage of a region's share of its national average income is shown on the Y-axis while the number of regions for each of the nine countries examined are shown on the X-axis. Countries with relatively more vertical curves exhibit the largest disparities

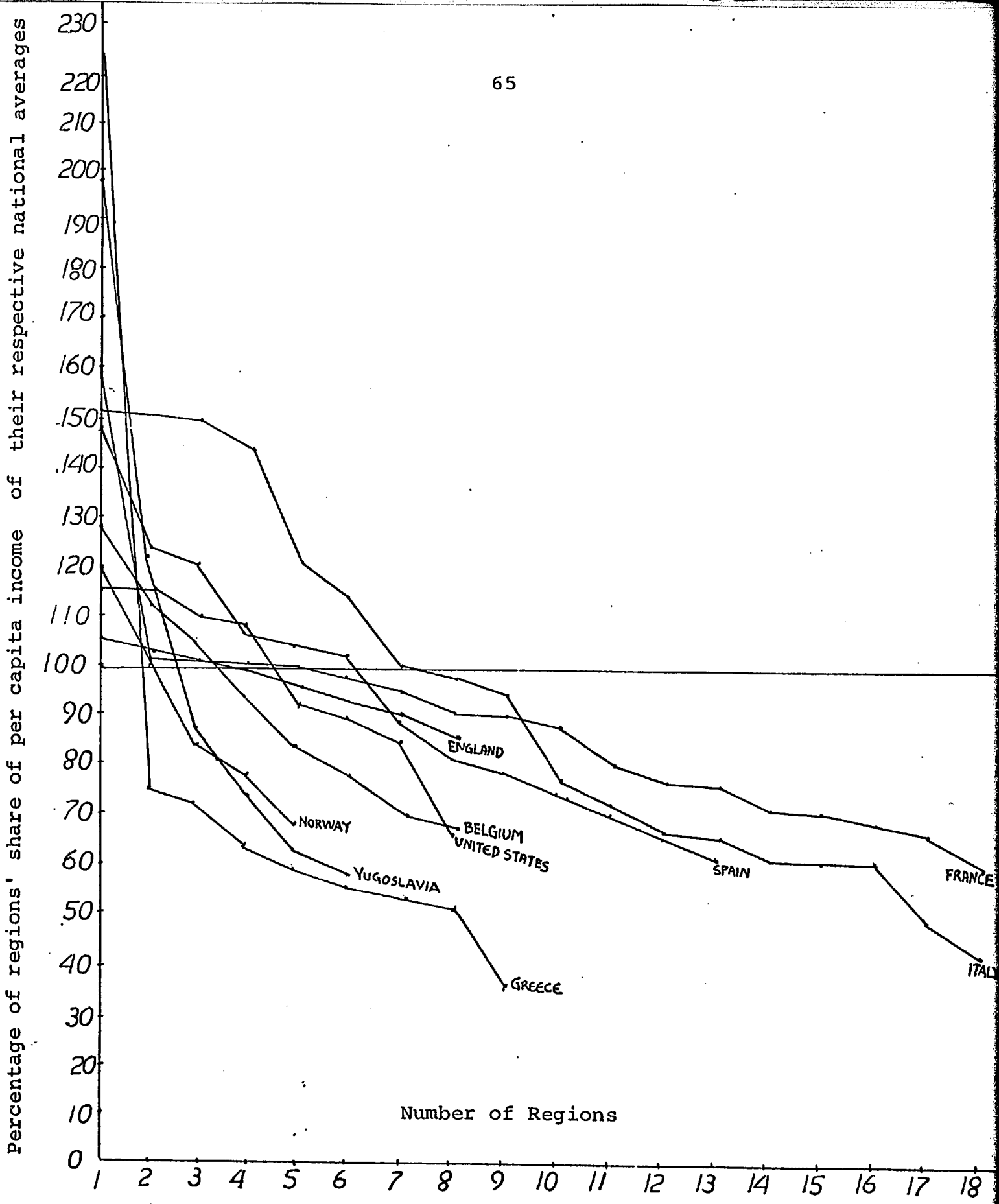


Fig. 6.-- Deviation of regional per capita incomes from their national averages for selected countries, 1961 (national average = 100).

of average incomes among their regions but the slope of the curve flattens for those countries with many regions, e.g., France, Italy. In spite of this tendency, however, it is evident that a) more regions are below the 100 percent average than above, and b) Greece, Yugoslavia, and Spain, with the lowest per capita products exhibit the highest divergence in regional incomes. Italy's regional income inequalities are cushioned by its large number of regions which makes the curve more horizontal.

Equally important is the situation with respect to city size distributions. Although type of city size distribution is not related to economic development, as Berry has suggested,[106] there is ample evidence to refute even the association of degree of urbanization with economic development,[107] which he has accepted for some 95 countries. About the only countries that fit in what may be called a pattern are the United States, at the extreme high end of the development ladder, and Greece, at the extreme low end.

Characteristically, the United States has been involved with regional integration policies while Greece's involvement is with equalization policies. Even more interesting is the fact that those countries with the highest degree of urban agglomeration (defined above) are not particularly concerned with urban decentralization. England, for example, with 12 percent of its total urban population packed

agglomerations has been a pioneer in new towns policies, whereas Greece, Norway, and Finland with 50%, 40% and 30%, respectively, have not even begun to think in these terms.

It is in this unsystematic context that we must examine national experiences with regional decentralization.

Centrally Planned Economies

The involvement of socialistic countries with regional development has had, unlike capitalist regional development, an ideological origin.[108] Curiously enough, socialistic concensus about regional goals has not produced a rigorous methodology necessary for planning purposes while in market economies the lack of an analogous foundation has not prevented at all the development of planning tools and methodologies.

In very general terms, the goal of socialistic regional policy is the achievement and maintenance of social (spatial) justice, as it is reflected in income levels and uniformity in living conditions. The single criterion employed in regional planning is the attainment of the highest productivity of social labor while most of the theoretic debate is concentrated on the subject of regional boundary delineation.

Recently, however, the persistence of uneven regional growth patterns and excessive population and industrial concentrations are emerging as in the West to be the leading problems in socialistic regional development.[109] Increasingly policy proposals are patterned after the

parallel experiences of the European market economies.[110]

The Soviet Union especially has been engaged in intensive efforts to do away with unequal development which it has inherited from tsarist Russia. Soviet regional efforts were channeled to achieve two basic needs: to move industry and other economic activities eastwards and to prevent excessive concentration in European Russia. In spite of the advantages centrally planned economies enjoy over market economies in influencing the allocation of resources in space, the Soviet Union has reportedly failed to achieve its objectives.[111] One form of Soviet urban decentralization--the ban on building industries in Moscow and Leningrad--had to be repeated and extended to include Kiev, Kharkov, Rostov, Gorki, and Sverdlovsk, at the same time inducements were offered for eastward migration. As late as 1964, there was evidence of official dissatisfaction with the industrial congestion of the Donets basin and the slackening, and even reversal, of the preferred eastward migration. The latter was said to be the result of poor living conditions in the Soviet East.[112]

Before we focus briefly on Soviet regional development, it may be useful to point out that spatial, urban and industrial, concentration are viewed by the Soviets in a fashion similar to that of the western regional decentralization proponents.

Socialistic reasoning of causes of urban and industrial congestion is closely related to the concept of social

cost [113] and to what has been termed the proportion of productive to non-productive investment. Polarization is largely a function of location and scale economies. This concept is rejected by socialist writers who feel that polarization is the result of a spontaneous and insufficiently directed allocation of economic activities and population by the planning apparatus. As such, this problem calls for solutions that invariably have to do with the "readjustment" of the planning mechanism.

Once "faulty" planning leads to concentration, a shift of productive investment follows with non-productive investment progressively increasing to the point where extra urban needs, directly attributable to excess concentration, consume resources that would otherwise be used for productive purposes. In socialistic terminology these are called social diseconomies and are more detrimental to the development of the poorer regions that receive marginal investment.

This problem is frequently neglected in market economies since social losses are often offset by private gains (locational economies) and urban-industrial agglomerations begin to affect national income when social losses begin to exceed private gains. This can occur at very large agglomeration sizes. Understandably, the same problem is more critical to socialist economies, with no private sectors to balance these losses, and socialist income calculations are affected at an earlier stage of agglomeration

development. To that extent socialistic agglomerations of a smaller size can be as costly as capitalist agglomerations of much larger size. For example, Kiev, with a 1959 population of 1.3 million, can have the same relative effect on Soviet national income as Paris, with a 1960 population of 7.3 million can have on French national income.

The Soviet Union

Soviet regional policy has been closely linked to the process of regionalization, or the method by which the objective existence and areal size of a region are identified. Concern with a region's "objective" existence stems from Aleksandrov's notion that economic regions should represent large combined systems of economies whose isolation should be based on the principle of achieving the maximum productivity of labor.

Aleksandrov, drawing from Lenin's New Economic Trends in Peasant Life (1902?), and The Development of Capitalism in Russia (1898), wrote that if it could be proved in a given instance that regional boundaries ensure the maximum increase in the productivity of labor, this would mean that regionalization has been carried out in an economically efficient way. Such objective would be attained by the optimum (areal) combination of natural, labor, and material resources, and the nationally organized areal division of labor among regions.[114]

This suggests the following: first, regional boundaries should be set on a number of points, at which an optimum mix of all resources insures "the maximum increase" in the productivity of labor, and hence, social product; and second, that in a static sense, labor and capital be allowed or induced to locate in existing fixed areas and in amounts sufficient to produce the optimum mix, or, in a dynamic sense, establish a procedure by which capital at least, being more mobile than labor, be allocated in time and space so as not to alter an established optimum mix.

For example, as one factor of production, like natural resources, increases disproportionately to the other factors, in a given region, the flow of capital and/or labor can be reduced or increased and diverted into other regions. The size of regions would then depend on the fixed factor, namely, the resource stock. Additions of the variable factors, guided by the maximum labor productivity dictum, would eventually diminish area differences in labor productivity. When this happens, the system is fully integrated and regional space becomes national economic space. Also, the equalization of labor productivity would lead to wage equalization and a stable pattern of population distribution.

This seemingly simple notion of Soviet regionalization has guided official planning effort and has served as a basis upon which the opening of the Soviet East with its vast natural resources, the huge population movements, and

the development of links among regional complexes, were founded.

Essentially, the modus operandi of Soviet decentralization policy is the completion of links between the West[115] and the East,[116] where the West exports labor, capital, technology and power, and the East exports raw materials.

The critical importance of regionalization to the overall success of Soviet regional planning has created many problems. The validity of their planning is based on the validity of the region's definition and most of the theoretical debate has taken place in this direction. Planning failures are attributed to false definitions espoused by Soviet geographers and, in turn, persisting regional growth inequalities are blamed on the failure of the planners to grasp the complexities of regions. Unanimity is obtained only in their rejection of western formulations of regional definitions.[117]

Another problem of broad methodological importance to Soviet regional development is that of industrial location. The location of production is also linked to the principle of the territorial division of labor as it promotes maximum productivity. The interesting innovation in considering the "rational" location of production is its labor-saving aspect. This is consistent with Lenin's conception of industrial location being the point where there is a minimum loss of labor required for passing from

one production stage to another, i.e., the achievement of the maximum productivity of labor,[118] and in which the role of transport costs is not predominant.[119] This is probably due to the fact that Soviet regional scientists are constrained by the role of labor in regional development to treat transport costs as a labor-saving device which promotes regional specialization. However, for regional specialization to have a meaning, transport costs must be such that regional surpluses (or production exceeding local needs) can be exported to other regions in a way that it pays for the exporting region to specialize.

This has been duly recognized by a few writers and has also led to some skepticism as to whether the simple criterion of labor productivity says anything at all about regional specialization, its structure, and the ultimate socialist goal of regional equalization.[120]

This skepticism has been encouraged by various pronouncements of the Communist Party, which, apparently, perplexed with the country's patterns of regional development that are so similar to those of market economies, has added more objectives to the country's regional economic policy.

The occasion of these pronouncements has been the need to prepare for the transition from socialism to full-fledged communism. The pertinent passage reads:

> The full-fledged consturction of communism requires a more rational location of industry that would insure savings in social labor, integrated development of

> regions and specialization of their economy, eliminate extreme concentration of population in large cities, promote the elimination of substantial differences between town and countryside, and further equalize the levels of economic development of regions.121

The latter part of this passage could have very well originated from the British Ministry of Local Government heralding a new wave of new towns, the French Ministry of Economics complaining about the size of the Paris region, or the Cassa per il Mezzogiorno describing policy objectives for the Italian South.

Two questions arise at this point which, unfortunately, cannot be dealt with with a reasonable amount of accuracy. First, what is exactly the Soviet locational pattern of industry and urban configuration, and second, what instruments are available to Soviet planners to implement regional integration. There is some evidence about the first question and virtually nothing about the second. Whatever instruments may be devised, however, by Soviet planners will be of a limited scope and effectiveness since economic forces in the U.S.S.R. are not designed to react to economic stimuli and inducements. To that extent, market economies may have a clear advantage in shaping regional policy more effectively and for maximum results. Limited regional statistical information reveals great disparities among Soviet regions and between central cities and their corresponding regions and oblasts.[122]

For example, Leningrad city, the second ranking city accounts for 82 percent of the industrial output of the

entire Leningrad economic region, the city of Yaroslavl, the thirty-fifth ranking city, accounts for 70 percent of the industrial output of Yaroslavl Oblast.[123] No city among the first 40 large Soviet cities accounts for less than 50 percent of the industrial output of its corresponding Oblast.

By comparison, Novgorod Oblast and Pskov Oblast commanded only 4.7 and 3.89 percent respectively, of the industrial output of their corresponding regions.

More disconcerting is the fact that industrial output per capita is in the major central cities two to three times greater than the national average and below that average in the Oblast hinterlands. Production exhibits the highest degree of inequality in the Central Region (Central European Russia). Moscow Oblast alone accounts for 29 percent of the national cotton textile output while the entire region produces 36 percent of the nation's machinery output, 80 percent of its cotton-cloth production, 78 percent of its construction activity, and 50 percent of its chemicals. In spite of the Central Region's industrial preponderance, some of its Oblasts are among the lowest in industrial development. Others lose population from their central cities, and still others display the dual paradox of surplus agricultural labor with the highest percentage of collective farmers taking no part in communal labor.[124]

Although there are no available data (at least in English) about the other twelve Regions, the degree of

unequal concentration in the Central Region suggests that the overall picture is probably as unequal. Slastenko reports that the trend is towards more centralization as more than half of the new industrial plants are being located in central cities, primarily in central European Russia.[125]

It is not entirely clear how Soviet writers interpret the adverse effects of industrial concentration. The less political-oriented regional scientists blame concentration for weakening interregional links, slowing down regional specialization, and even polarizing employment opportunities in space that interferes with the East's economic development.

More politically-oriented writers, Alampiyev and Slastenko, in particular, blame industrial concentration for slowing down the State's transition from socialism to "full-fledged" communism. This charge has had more of an effect on the policy-making sections of the Gosplan and, in a way, precipitated the pronouncement of the Communist Party on long-range regional policy.

There are better population data for the Soviet Union. Also, there is some indication as to what they consider to be excess agglomeration. Their definition of excess population concentration is also based on the existence of city size optimality and this approach would be generally acceptable by most western proponents of urban decentralization.[126]

Davidovich reports that, on the basis of sanitation

requirements, living conditions, commuting patterns, and municipal facilities, the optimum size of the average satellite city lies between 30,000 and 80,000 people.[127] Satellite cities that are industrial in character should be in the range of 10,000 to 100,000, with a maximum of 150,000 population size. In 1959, 236 out of 319 Soviet satellite cities did not fall in the above range.

For central cities with an industrial base the size range is conceived, on the basis of similar calculations, to be between 10,000 and 400,000.[128] The average central city size was 234,000, well within the acceptable range, and that of the average satellite city was 30,200, also within its optimum range.

Table 7 pulls together scattered bits of information that can assist us in obtaining a clearer view of Soviet urban agglomeration problems.

Several conclusions can be safely drawn from Table 7. First, the Soviet city size distribution is of the intermediate type, due to the size of Moscow largely. Second, the percentage of population in the central city to the total agglomeration is not related with agglomeration size at all. Third, for the first 13 cities, the number of satellite cities seems to be related to agglomeration size. Total satellites, that is both cities and towns, is not as related to agglomeration size. Fourth, agglomeration form is not related to agglomeration size nor is its physical

TABLE 7

POPULATION OF THE 40 LARGEST SOVIET URBAN AGGLOMERATIONS AND OTHER RELATED DATA

Central City	Population (in 000's)	Population of Satellites (as a % of agglomeration)	Number of Cities		Agglomeration Form,[a] and Radii
			Central Places	Satellite Cities	
Moscow	7,884	36%	40	132	Monocentric 44-75
Leningrad	3,579	19	13	52	Mono 49-70
Danetsk	1,409	50	9	43	Polycentric 30-40
Gorkiy	1,372	31	6	25	Poly 20-65
Kharkov	1,322	30	6	47	Mono 45-79
Kiev	1,281	14	6	18	Mono 27-64
Kuybyshev	1,134	29	5	10	Poly 40-80
Tashkent[b]	1,070	14	2	9	Mono 20-58
Baku	1,025	38	1	47	Mono 25-48
Dnepropetrousk	1,001	34	5	17	Poly 25-71
Chelyabinsk[b]	987	30	3	4	Poly 15-50
Sverdlovsk[b]	971	19	3	23	Mono 25-59
Novosibirsk	944	6	1	4	Mono 15-30
Kazan	780	18	x	x	x
Tbilisi	773	10	x	x	x
Volgograd	701	16	x	x	x
Saratov	697	17	x	x	x
Gorlouka	684	57	x	x	x
Perm	682	8	x	x	x
Odessa	675	2	x	x	x
Rostov-on-Don	664	10	x	x	x
Riga	644	6	x	x	x
Nadiyevka	602	70	x	x	x
Omsk[b]	579	12	x	x	x
Minsk[b]	575	11	x	x	x

TABLE 7--Continued

Karaganda[b]	571	30	x	x	x
Yerevan	547	7	x	x	x
Ufa	546	44	x	x	x
Tula	545	36		210	x
Novokuznetsk	506	26	x	x	x
Voronezh	496	9	x	x	x
Alma-Ata[b]	472	3	x	x	x
Zagorozhye	465	6	x	x	x
Lvov	460	11	x	x	x
Yoroslavl	452	10	x	x	x
Krivoy Rog	451	14	x	x	x
Kramatorsk	420	73	x	x	x
Krasnoyarsk[b]	417	2	x	x	x
Vladivostok[b]	413	31	x	x	x
Prokopyevsk	411	31	x	x	x

[a]A monocentric agglomeration is one with one center; polycentric with several centers. Davidovich suggests that in a monocentric agglomeration the central city should be at least 10 times longer than the largest satellite city. The numbers mean the two-directional extent of the agglomeration.

[b]These cities are located east of the Urals in the Soviet East.

Source: V. G. Davidovich, "Urban Agglomerations in the U.S.S.R., Soviet Geography, V, No. 9 (November, 1964), and "Satellite Cities and Towns of the U.S.S.R., Soviet Geography, III, No. 3 (March, 1962).

area (volume). Perhaps the degree of economic diversification of the central city part of the total agglomeration can explain better the number of satellites attached to central cities. This may be due to the higher stratification of employment, along income lines, of diversified cities which produces various satellites that meet different housing, cultural, social, and economic requirements of people with diversified means.[129]

Significantly, "day-time" populations increase rapidly in the larger central cities as between 30 and 42% of satellite residents commute to them to work.

It is not clear from the above data whether Soviet urban decentralization is motivated by congestion and social costs associated with it. Instead, and this may be where Soviet urban policy may differ from British policy, the emphasis seems to be on decentralizing economic activity, closer to raw material sources, power and transportation centers. In this case, efficient city sizes must be properly identified in order to minimize the cost of moving labor to the developing regions. It is no accident that Davidovich urges that efforts should be made to limit not only the size of the largest central cities, which are already well above the 400,000 maximum limit, but that of their satellites. Moscow, Leningrad, Donetsk, Gorkiy, and Kharkov are particularly singled out as the prime targets. The urban concentration pattern has been altered since 1959 with the recently reported slow-down, and even reversal, of

the eastward migration.[130] This suggests that the policy options available to Soviet planners may be limited and even not sufficient to effectively pursue the country's regional development.

In conclusion, Soviet patterns of urban congestion are similar, both in nature and cause, to western patterns. The policy options available to Soviet planners are perhaps more than those open to western planners, but their arbitrariness as well as the pressure from the unsettled conditions in the Soviet East are greatly reducing the number of effective policy options.

Czechoslovakia-Hungary

Czechoslovakia attributes its regional economic structure, like the Soviet Union, to its pre-socialist political form. More specifically, the liquidation of the Austro-Hungarian Empire, at the end of the First World War, and the formation of the capitalist Czechoslovak Republic produced a substantial flight of capital, labor, and industry from Slovakia to the Czech lands.[131]

With the subsequent destruction of the (pre-Munich) Czechoslovak State and the thrust of the Czechoslovak Communist Party into power, regional economic policy was immediately instituted to equalize Slovakian development with that of the Czech lands.[132]

Unlike Lenin's delphic pronouncements about post-revolutionary Soviet regional development, that still puzzle

Soviet regional geographers, the Czechoslovak Communist Party did, in 1937, publish a manifesto for the country's regional development ("A Plan of Economic, Social and Cultural Advance of Slovakia").

This plan explicitly called for the industrialization of Slovakia, improvements in living standards of the Slovak population, and the "reinforcement, through economic, political and administrative measures, of the Republic's unity."[133]

A policy of economic equalization has, since the Party's ascent to power, been the prime regional objective and its policy can be readily evaluated by the following statistical information in Tables 8 and 9.

Pre-socialist statistics, in Table 8, indicate clearly the disparity between Slovakia and the Czech lands which, for a period of roughly 30 years (1918-1945), was allowed to completely polarize the Czech economy between the extreme agrarian Slovakia and the highly industrialized Czech sector.

Socialist statistics show that a dramatic equalization process, which has taken place in various instances, constitutes a reversal of the old regional pattern.[134] For example, the rate of increase in Slovakian industrial production overtook the Czech production rate as early as 1961 while industrial earnings rose faster than both the national and Czech rates of increase. Although per capita incomes are still very unequal, they were only 28% less

TABLE 8

SOME INDICES OF CZECHOSLOVAKIAN REGIONAL DIFFERENTIATION: PRE-SOCIALIST PICTURE

Regions	1936					1926-1930	1934	1929
	Gross Agricultural Production as a % of Total	% of Labor Force in Agriculture	% of Total Agricultural Land	Agricultural Production per Hectare	Volume of Output per Agricultural Worker	Per Capita Agricultural Income National-100	Per Capita Income, all Sectors	Regional Share of Industrial Production
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Slovakia	23.3	32.3	35.4	100.0	100.0	71	100	8.0
Czech Lands	76.4	67.0	64.6	180.8	156.0	115	. .	92.0
Czechoslovakia	100.0	100.0	100.0	. .	. .	100	. .	100.0

Note: Columns (4), (5) and (7) take Slovakia as the basis. Czech lands consist of Bohemia and Moravia. In column (7) Czech per capita income is not known but it should be substantially higher than the national average of 155.

Source: Radoslav Selucky, "Slovakian Development," Eastern European Economics, IV, No. 1 (Fall 1965), 44-45.

TABLE 9

SOME INDICES OF CZECHOSLOVAKIAN REGIONAL DIFFERENTIATION: THE SOCIALIST PICTURE

Region	1961 Agricultural Production Per Hectare	1961 Volume of Output Per Agricultural Worker	1961 % of Regional Labor Force in Agriculture	1961 % of Regional Labor Force in Manufacturing	1961 Share of Industrial Production	1948-61 Rate of Increase in Industrial Production	1964 Industrial with CSSR - 100	1964 Earnings Trends with 1948 = 100	1958 Per Capita Income All Sectors
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Slovakia	100.0	100.0	22.3	19.2	18.8	600%	97.6	187.8	72
Czech Lands	135.6	131.7	16.1	35.7	71.2	380%	100.8	174.9	111
CSSR	. .	. .	17.9	30.7	100.0	400%	100.0	176.8	100

Note: Columns (1) and (2) take Slovakia as a basis.

Source: Column (7) is based on United Nations, Post-War Incomes in Europe (Geneva: 1966), pp. 37-38, chapter 8. The rest is based on calculations from Selucky's "Slovakian Development," pp. 54-59.

than the national level in 1958, while in 1934 they were less than half of the national base. The measures taken were unusually strong. Arbitrary transfer of factories (about 340 transfers between the period 1945-47), heavy state investments, rapid construction of port and transportation facilities, and shifts of Slovakian unemployed (agricultural mainly) labor into Czech industries were employed with varying intensity.

The Czechoslovakian success, in at least bringing incomes into relative parity, can be attributed to the strong and persistent measures taken by the State, the political parity between these two regions, and perhaps the fact that regional development had to take into account only one slow-growing region instead of several that would normally complicate the entire process. The last two reasons need additional amplification. First, Slovakia's equal representation in the ruling body of the country's Communist Party should account for the consistency in pursuing equalization and second, decisions were relatively easier to make since Slovakia was the only region that needed assistance.

Perhaps, there is no other case where decentralization was more successful than in Czechoslovakia and with no apparent effects on its overall development. The economic integration of these two rather culturally and socially heterogeneous regions has been largely complete.

The Hungarian view of regional development is also

structured on the basic socialist belief of regional equality. It differs from the Soviet approach in that it is an integral part of the country's overall economic planning and from the Czechoslovak approach in that a) it takes place over an unusually large time horizon (about 20 years), and b) it specifically deals with urban agglomeration, that of Budapest.

The regional aspect of Hungarian economic development is designed to develop the most advantageous production specialization of the different regions while securing the "liquidation of significant disproportions among the various districts in material and cultural supply and living standards."[135] The means available to the State for the implementation of this objective are as powerful, but not necessarily as effective, as in any other socialist state. Yet, unlike Czechoslovakia that has no large city, Hungary is especially concerned with the size of Budapest which makes it difficult to develop "rational regional economic proportions in the country" while huge investments are made to improve housing, urban traffic, communal (public) services, and living conditions that excessive urban and industrial agglomeration have created the need for.[136]

Fragmentary statistical evidence reveals a heavy concentration of urban and industrial activity in Budapest. For example, in 1962, Budapest accounted for 20 percent of the country's total population (some 20 million), 42.2 percent of its total industrial employment and 45 percent of

its total large-scale industry.[137]

The causes of this concentration have been high levels of earnings in Budapest, that have stimulated a steady flow of migration into the city,[138] and its locational advantages to industry. Perhaps, the most interesting aspect of Hungarian regional development is the way planners view Budapest's size and its economic implications. It consists of two parts; first, the creation of excess capacity in Budapest that came by way of rebuilding the city's war-torn economy, in the form of replacing its infrastructure, productive facilities, and the modernization of its industrial plants, which forced the State to channel large portions of new industrial activity into the city so that the full benefits of location and scale economies could be utilized; and second, the recognition that Budapest's size exceeded an optimum size to the point where no further economies could be realized while further concentration would both upset the country's "regional proportions" and give rise to social (unproductive investments) costs. For example, it was estimated that the creation of every new job in Budapest would cost the State about $12,750-$17,000 in public services, education, housing and transportation.[139] Per capita investments in housing and transportation alone would be about $11,000. This would mean that if a plant were to locate in Budapest with a labor force of 2,700 workers, state direct investment required would be about $38.2 million while an

additional $39.9 million would be required to provide social services.[140] Urban decentralization, without a corresponding spatial displacement of industrial jobs, would load transportation facilities necessary for commuting to the point where some moderate reductions in investment in urban services would be offset by more expenditures in the transport system. As a network of dormitory satellites develops around the central city time spent in intra-metropolitan travel should be measured along with losses of man-hours.

Hungarian planners, therefore, consider Budapest's size as an interference with the country's economic development since State investments in industry must be more than doubled to provide for the necessary services. Conceivably, whereas one dollar of industrial investment in Budapest requires about $1.10 in services, in another region the same dollar may require only 30 cents for the same services.

In market economies such calculations are extremely difficult because costs and benefits are shifted from the private to the public sector and, while the system as a whole may be balanced, social costs cannot be charged to private industry in order to remove the inequity. As it was pointed out earlier, market economies have to resort to costly schemes in order to induce industry to alter its location pattern. Until the offered inducement does match private gains, no such alteration takes place. Industrial

inducements at levels below, or even equal to, the location economies only add to the social burden.

A socialist state, with a negligible private sector, has a better chance to arrive at a desired urban and industrial spatial structure by allocating its resources in space in a way that at least minimizes urban costs.

Hungary is presently engaged in a number of decentralization policies whose success can be evaluated in terms of how Budapest's share of the total national economic activity changes with time.[141]

The policies are briefly the following:

1. The development of industry in Budapest at a rate below the national average.

2. The increase of capital/labor ratios to minimize the inflow of labor into the city. Labor saving devices, modernization of plant and equipment and a faster application of new technology to industrial processes in the city are expected to affect the capital/labor ratios.

3. The transfer of plants with a relatively higher dependence of raw materials in other regions. Plants that require much maintenance or depend heavily on municipal services, such as fire protection, or are said to be a "nuisance" to the population, are also removed or abolished.

4. "Footloose" activities, such as research, health, administration and education, that are not deemed to be essential to be in Budapest, are also decentralized. The 1961-1965 five-year plan, part of the 1960-1980 twenty-year

plan, is reportedly providing for the creation of "country-towns" to absorb industry and population that leave Budapest.[142]

5. The "freezing" of an area of 25 kilometers, outside the city's periphery, from all industrial activity. Exceptions are made only by obtaining permission of the Economic Committee, Hungary's highest agency of economic control.

6. The granting of direct subsidies to plants locating outside the city amounting to building-maintenance-transportation costs that these plants would not have to incur at a Budapest location.

7. The levy of more than 5 percent of fixed assets to be charged on every industrial enterprise that proposes to locate or is located in Budapest. Firms outside the city will have to pay only 5 percent.[143]

Poland

Poland's commitment to a policy of regional decentralization has been minimal and well below levels attained by other European socialist countries.[144] The main reasons for Poland's relatively low interest in regional decentralization are a lognormal city-size distribution, a high degree of population and cultural homogeneity, and a well-dispersed pattern of industrial activity.[145]

Polish regional planning philosophy does not differ from the socialist principle of regional equality but the

absence of critical regional problems has modified this philosophy by affording the country's planning apparatus time to operate free from pressures. As a result, regional planning decisions are preceded by much research and careful investigation of the country's regional conditions. The decisions themselves have not led to arbitrary shifts of people and industry for equalization purposes, but rather to sound devices like the transfer of decision-making power to regional and local authorities and the opening of hitherto unexploited local natural resources that attracted industrial plants without central coercion.

Yugoslavia

Yugoslavian regional development policy is consistent with the country's federal political structure and its modified socialist ideology. The former led to the decentralization of the State planning apparatus whereby (regional) planning decision-making authority was localized at the commune level,[146] while the latter, and especially after Yugoslavia's disengagement from Soviet influence, led to the discard of the socialist regional development principle of justice in favor of that of economy.[147] The process of Yugoslav planning decentralization can be summarized below in Table 10.

The basic aim of Yugoslav regional development policy has not changed, in spite of the successive structural reforms of its planning apparatus, and remains the

promotion of faster growth of the underdeveloped regions. Nor has the method changed since 1952. Industrialization of the lagging regions remains the basic policy instrument.

TABLE 10

STAGES OF YUGOSLAV PLANNING

Period	Description	Institutional Responsibility for: Economic Planning	Spatial Planning
1945-1950	Administrative Centralism	Federal (Direct)	Federal (Direct)
1950-1955	Development of Workers' Self-Management	Federal/Enterprise (Direct)	Federal/Republic (Direct)
1955-1965	Development of Communal System	Federal (Indirect) Commune/Enterprise	Commune
1965-	Economic Reform	Federal (Indirect)/ Enterprise	Commune

Source: R. Burton, J. Dyckman and J. Fisher, "Towards a System of Social Planning in Yugoslavia," Regional Science Association, XVIII (1966), p. 78.

What the reforms cited in Table 10 have sought to accomplish is the method of allocating federal funds to regional development.

Two funds were established by the federal government for this purpose: the Federal Investment Fund (central fund) and a Special Fund; both administered by the Yugoslav Investment Bank.

The Federal Investment Fund was established by the 1957-61 five-year plan and was designed to:

a. make investments for basic production,

b. help develop the under-developed regions,[148]

c. eliminate structural disproportions of national production.[149]

All bidders[150] to this fund have to satisfy the requirements of profitability, ability to participate in the repayment of at least a fraction of this loan back to the State, and payment of annuities. Although poorer regions receive a higher priority in their bids, the most severely depressed regions (Macedonia, Montenegro) are assisted by the Special Fund which caters primarily to their needs. The Special Fund has, of course, lower qualifications. Those regions qualifying for the assistance from the Special Fund must have less than $200 per capita income. Therefore, regional equalization is to some (varying) degree a function of profitability or a region's ability to develop projects that could be proved to be of social and economic significance.

The implicit assumption made by Yugoslav planners is that justice by itself cannot help the entire system and its pursuit interferes with general economic growth. Since Yugoslavia is not faced with problems concerning excessive industrial and urban agglomeration, it was relatively free to seek regional equalization within a framework of comparative efficiency. To this extent, Yugoslavia may be

unique because both socialist and non-socialist regional equalization processes are fundamentally based on criteria other than pure economic efficiency. The former on account of ideological obligation, combined with a mounting concern over excess concentration and its effect on their productive budgets, while the latter on account of a) concern over the conditions produced by excess concentration (primarily urban), and b) persistent regional growth disparities that seem to directly affect urban and industrial configurations.

It is unfortunately not possible to provide an answer to the crucial question of whether regional equalization can and does interfere with general growth rates if its basis is simply justice, or how much equalization is possible if such policy is based on profitability criteria. The study of France or the Soviet Union may not provide any clues. Possibly, the study of Yugoslavia, a country in political and ideological limbo, may reveal some much needed insights to this problem.

The European Economic Community

The regional problems of the European market economies, and especially those associated with the E.E.C., are of the following two types: those emanating from excessive urban and industrial concentration, and those emanating from unequal rates of growth among regions in a given country.

Two sets of policies have been subsequently devised, each independent from the other, to deal separately with these problems. The first policy aims at the equalization of per capita incomes in the different regions via the decentralization of production in space [151] and does not take into account productivity. The second policy is that of integration which aims primarily at the maximization of average per capita incomes throughout the planning area.[152] This latter policy takes into account the productivity of regional investments and it often brings about a reinforcement of the spatial concentration of production.

The first policy is initiated and implemented at the national level, while the second is pursued at the community level since the Treaty of Rome (Article 48) has made regional integration mandatory.

Both types of regional problems owe their origin to the distribution of industry which can be historically explained in terms of the location of raw materials and power resources.[153] European industrialization has closely followed the spatial distribution of resources, and its effect on the settlement pattern has been favorable to the formation of large cities whose rapid growth has frequently come about at the expense of the countryside. In too many cases towns have grown and groups of towns have coalesced to form the great metropolitan agglomerations, like the Clyde Valley in Scotland, London, Paris, the Italian North, the Ruhr, and the ring of cities in the west Netherlands

known as "Conurbation Holland."[154]

On the whole, in the E.E.C. there were 123 cities with more than 100,000 population and about 21 cities past the half-million mark, as of 1961. With the addition of England the number of cities increases to 183 and those with more than 500,000 population goes to 26. The axis of London-Paris-Ruhr accounts for the majority of these cities while a larger magnification of this axis from the Rhine/ Rhone to Northern Italy, produces about 60% of the E.E.C.'s gross product,[155] not including England.

The regional distribution of per capita incomes in the E.E.C. countries is also extremely unequal and the concern over it by the architects of the Treaty of Rome has been instrumental to the formation of Article 48. In 1958, for example, Hamburg, one of the more favored regions, had a per capita income of 7 times more than that of Calabria (Italy), one of the least favored regions. Moreover, out of 55 social and economic regions in the E.E.C. only 20 exceeded the E.E.C. average level of per capita income, while of the remaining 35, at least 15 had income levels between 50 and 70 percent below the average.

National differences in regional incomes are equally wide. In Italy, the region of Valle d'Aosta has an income of 3.5 times greater than that of Basilicata in the impoverished south. In Belgium, Brabant's income is 1.8 times greater than that of Luxemburg, while in France, Paris has a per capita income that is about 2.3 times greater than

that of Bretagne.[156]

Equalization policies are the strongest in France, where they are aimed at the Paris agglomeration, and in the Netherlands, aimed at the agglomerations of Amsterdam and Rotterdam. The rest of the E.E.C. countries are only mildly interested in purely equalization policies while their main regional objectives remain in the area of integration.

The policy instruments for developing backward regions, which is what integration really aims at, do not vary significantly within the Common Market. At the country level these instruments are the following:

1. Instruments connected with migration and labor mobility;
2. Public investment in economic and social infrastructure;
3. Instruments for increasing agricultural productivity;
4. Measures for promoting industrialization, including
   a. direct public controls and assistance
   b. final and credit policy, and other indirect investments.

At the Community level there are two agencies pursuing various regional integration policies. These are:

1. The Social Fund, which is primarily concerned with structural unemployment and deals mostly in the promotion of geographical and occupational mobility of workers, and
2. The European Investment Bank, which finances projects for developing less favored regions.

The Social Fund is an integral agency of the E.E.C. Commission while the Investment Bank is an independent agency governed by the finance ministers of the member states.

The policy instruments for equalization purposes are about the same as those for "orthodox" regional development. The criteria built into them, however, are of an entirely different nature. While, for example, the cost of a regional integration policy is weighed against anticipated increases in productivity, regional incomes, or regional employment, the cost of a decentralization policy is primarily weighed against anticipated savings in social expenditures and costs. In addition to these savings, a change in a given industrial location pattern may generate more jobs outside a congested area than those eliminated in the congested area and to that extent there is no clear demarkation between equalization and integration policies. If one job is transferred from a congested area and one job is created in a developing area, actual and theoretical growth are the same,and the only saving is the difference between the reduction in social cost from the transfer and the additional investment needed for the decentralized job. If the elimination, however, of a centralized job creates two decentralized jobs, the difference between social costs and extra investments notwithstanding, the process of equalization becomes a part of regional integration.

The acceptance of this criterion as a valid means

of distinguishing between these two types of policy makes it impossible to classify Common Market regional policy because of the creation of numerous measurement problems. For any given country with an established decentralization policy the difference between employment growth, with and without decentralization, must be measured in order to determine the amount of actual and theoretical growth. If the two are the same, the policy in question can be said to be one of purely decentralization. Any positive deviation, regardless if it is planned or not, cannot be legitimately called decentralization.[157]

The Netherlands

The regional problem of the Netherlands consists largely of the enormous urban and industrial concentration in West Holland, or the area better known as Conurbation Holland. This area comprises three of the country's eleven regions, namely, North Holland, South Holland, and Utrecht. All of the Dutch major cities and about 50 percent of the country's population are located in this area. As a result, Dutch regional policy is predominantly of the equalization type and its basic aim is to affect the orderly deconges-tion of the West, and to develop a framework by which excess growth can be rationally distributed among the re-maining regions.

Regional integration is not a significant policy issue as it is, for example, in Italy or Belgium. Table 11

TABLE 11

REGIONAL PER CAPITA INCOME DISTRIBUTION BY SECTORS IN THE NETHERLANDS

Region	Total Income (1963)	Agricultural (1960)	Mfg. (1960)	Services (1960)
North Braband	104.9	88.8	99.0	105.7
Utrecht	102.9	94.4	95.2	100.9
Gelderland	102.4	93.0	97.1	105.6
Drenthe	100.4	91.6	126.6	111.4
Limburg	100.4	100.0	96.1	103.8
South-Holland	100.4	108.3	99.0	98.1
North-Holland	100.0	98.1	111.1	96.1
Overijssel	96.0	115.2	95.2	105.6
Groningen	95.5	101.3	106.6	102.8
Friesland	93.5	98.6	117.1	109.5
Zeeland	93.0	98.6	105.6	117.1
NETHERLANDS	100.0	100.0	100.0	100.0
Equalization %	1.03%			

Source: Calculations based on Maandschrift von het Centraal Bureau voor de Statistiek, August 1965 and September 1964.

shows the regional distribution of 1960 per capita incomes in the Netherlands which is one of the more equalized among European countries.

It is evident from Table 11 that incomes, the main index of regional inequality, are nearly equal and no integration policy can be justified.[158] On the other hand, the concentration of activity and people in the West has taken critical dimensions because, a) high population growth rates, b) industry prefers it because of its existing infrastructure, and c) wages which could have diverted some industries in the rest of the country are not lower outside the West.

As a direct result, Dutch regional policy is based on the premise that increasing concentration in the West would lead to intolerable economic and social consequences. The objections to concentration are both economic and noneconomic in character.

The economic objections are a) large agglomerations are expensive,[159] b) the conversion of valuable agricultural land to urban uses is characterized by low returns, c) building costs are higher in the West because of poor soil conditions, and d) the rapid development of all industries in the West will, because of the shortage of industrial sites, prevent the future growth of industries that can develop only in the West.[160]

The noneconomic objections to centralization are sociological, health, and defense reasons that are more or less standard arguments against urban concentrations.

Dutch decentralization policy has deliberately sought to promote the exit of population and industry from the West rather than discourage its further growth.[161] Accordingly, the measures adopted in 1959 consisted of improving the infrastructure in the development areas, improving housing, cultural and medical facilities, subsidizing the costs of migration outside the West, and subsidizing industry for locating outside the problem area.

The effectiveness of Dutch decentralization policy has been estimated to be unusually high,[162] although a substantial industrial employment dispersion took place

before this policy became effective.[163]

France

Unlike the Netherlands, where regional policy evolved from integration to decentralization, France is seriously committed to the simultaneous pursuit of both regional integration and decentralization. The first is necessary because of the wide economic disparities among French regions while the second is necessary because of the preponderance of the Paris region vis-a-vis the rest of the country.

The magnitude of the French regional problem is somewhat apparent in Table 12. Although per capita incomes are very unequally distributed, wage levels are higher than the national average only in the Paris region. Migration into the Paris region is also critical. More than a million people have migrated into Paris between 1954 and 1962. This has resulted in the gradual depopulation of more than half of all French regions.[164] The relative positions of some individual departments (subunits of regions) are even worse, especially those in the problem areas of Massif Central, Brittany, Aquitaine, and Corsica. Paris itself includes one-sixth of the entire French population, 25 percent of the industrial population, and 35 percent of the administrative and commercial services. Only the Greater Athens region of Greece can claim a similar level of concentration among the other European nations.

TABLE 12

SELECTED REGIONAL INDICES IN FRANCE FOR VARIOUS YEARS

Region	Per Capita Income, 1958 Average = 100	Population, 1962 (000's)	Interregional Migration as a % of Region's Population 1958-1962	Population Growth for 1954-1962 1954 = 100	Relative Wage Level[a] for Industry and Commerce in 1961 France = 100	No. of Unemployed Workers per 10,000 of Active Industrial Population, 1962
Paris	159.6	8,403	+3.9%	106.4	132	284
Haute Normandie	102.8	1,385	-0.7	100.9	92	216
Nord	102.6	3,622	-1.2	99.1	89	126
Rhone-Alps	101.5	3,998	+1.2	101.8	47	718
Lorraine	101.0	2,198	-0.3	103.7	93	111
Alsace	99.8	1,308	+0.4	99.1	89	94
Champagne	93.8	1,199	-2.2	98.1	84	260
France-Comte	91.4	925	-0.1	100.0	88	111
Provence-Cote d'Azur-Corse	90.1	3,098	+2.5	107.4	97	1,803
Picardie	89.6	1,475	-1.3	98.1	87	261
Auvergue	82.8	1,269	-1.2	94.4	82	597
Centre	81.9	1,847	+0.2	97.2	78	643
Bourgogne	81.8	1,428	-0.4	96.3	84	398
Languedoc	79.6	1,546	-0.4	99.1	81	2,754
Basse Normandie	77.3	1,198	-4.4	95.4	78	452
Aquitaine	75.9	3,308	-0.3	96.3	82	1,105
Pay de la Loire	75.4	1,242	-4.2	97.2	79	1,242
Midi-Pyrenees	74.4	2,047	-1.5	96.3	82	1,582
Limousin	72.6	731	-2.8	91.6	74	421
Poitou-Charentes	69.9	1,442	-2.6	95.4	76	745
Bretagne	68.7	2,375	-4.0	94.4	76	1,312
FRANCE	100.0	46,242	±1.9	100.0	100.0	132

[a]From P. Bouchet, "Regional Development Policies in Area Redevelopment Policies in Britain and the Countries of the Common Market, ed. by F. Meyers, pp. 158-164.

Source: Calculations based on Annuaire Statistique de la France, 1965.

The French regional structure is such that it presents a unique opportunity for the planning authorities to decentralize Paris while promoting the regional development of the country's underdeveloped regions. However, because of the relative size of Paris the inducements for industrial relocation must be high enough to overcome its "magnetic field" which requires substantial resources. Whereas Dutch decentralization policy aimed at promoting the locational advantages of the areas outside the West, French policy aims primarily at making the Parisian location uneconomical. For example, building activity within a 60-80 km. radius of Paris is controlled directly by the Ministry of Housing and Reconstruction via its authority to issue building permits. The Ministry of Construction also retains control over the locational decisions of firms employing more than 50 workers and occupying a floor area of more than 500 m^2.[165] Another measure is an industrial agglomeration tax levied against industrial firms which becomes a tax grant if a firm either closes down or decides to relocate.

These prohibitions, coupled with high land prices, high wages, and even higher service costs, have gradually produced some decentralization. On the other hand, the simultaneous improvements in the infrastructure of the less developed regions, direct subsidies to industries, tax credits, and favorable transportation rates, have all contributed towards the creation of decentralized jobs, or jobs that would have gone to Paris without these improvements.

From 1950 to 1961 some 205,980 jobs have been directly decentralized to underdeveloped regions.[166] However, the equalization aspect of French regional policy cannot be easily assessed on the basis of this accomplishment. The spatial distribution of the generated decentralized jobs suggests that the main beneficiaries are the regions adjacent to Paris which are not necessarily the least developed ones. Those regions with per capita incomes of less than 80 percent of the national average (see Table 12) received roughly 25 percent of the decentralized jobs whereas the regions of Bourgogne with 81.8 percent, Centre with 81.9 percent, Picardie with 89.6 percent, Champagne with 93.8 percent, and Haute-Normandie with 102.8 percent of the national per capita income received about 55 percent of the decentralized jobs. These regions form a complete ring around the Paris region extending to a radius of about 300 miles.

The reluctance of industry to locate or relocate well outside the Paris region implies that the positive measures, as opposed to prohibitions that can be called negative measures, are not high enough to overcome the centrifugal forces (agglomeration/location economies) operating in the Paris region. This reduces the overall effectiveness of French regional development, or that part of it that seeks to shift the level and distribution of centralized activity from Paris to the rest of the country.

A more intensive use of negative measures, without

a corresponding increase in the use of positive measures, offers no guarantee that the displaced economic activity will move in those regions that are in greater need of development. On the contrary, such an approach may postpone the development of the problem areas, especially the Massif Central, by forcing industries to recede from Paris in some direct proportion to losses per kilometer. Other factors may have a greater bearing on decentralization than deliberate policy instruments. These may be the exhaustion of the locally defined economies because of lack of building space, manpower shortages, and the overloading of infrastructural facilities. Paris is increasingly displaying these characteristics which, by stimulating some of the current decentralization, diminish the need for purely legislative measures.[167]

Germany-Belgium-Italy

Decentralization is not among the major features of Germany (federal) regional policy although there exists a substantial amount of urban and industrial concentration in various regions.[168] There are nine areas designated as congestion areas (Ballungsgebiete), of which the Ruhr district is the largest, where 43 percent of the country's population and 52 percent of the industrial labor are concentrated.[169] Yet, other than for some initial reshuffling of about 10 million refugees, that somehow settled in the labor-excess regions of Lower Saxony, Bavaria, and Schleswig-

Holstein, there has been no other conscious effort at decentralization since the end of World War II.[170]

The main reason for the relative lack of interest in equalization policies is that, with the attainment of full employment in Germany, migration towards the industrial centers decreased to the point where the "congestion" areas failed to assume critical sizes and industry itself began moving into rural areas where presumably some labor reserves were still in existence.[171]

Finally, neither Belgium nor Italy are engaged in an explicit policy of decentralization, in spite of the presence of sizeable urban agglomerations and unequal regional incomes. The industrialization of their poorer regions, in the Italian South and in Belgium's Wallonia, is primarily part of a policy of regional integration.

The European Free Trade Association

The regional problems of the European Free Trade Association countries are relatively more severe than those of the Common Market countries for two reasons:

First, the E.F.T.A. countries are located in the periphery of Europe and are remote from the continent's industrial complexes, markets, and population centers. In Norway, Sweden, and Finland, the additional factor of climate also contributes to the further polarization of these countries' regional structure. Hence, the southern parts of the Scandinavian countries are more developed

because of both their proximity to industrial Europe and milder climatic conditions.

Second, the E.F.T.A. countries are relatively less homogeneous than the E.E.C. countries in their respective levels of economic development. The greatest differences exist between England and Portugal. Differences in per capita regional incomes are between 2 and 2.5 times greater between poor and developed regions within the E.F.T.A., not including Portugal for which there are no income data available. In absolute terms, per capita incomes are more unequal in the E.F.T.A. than in the E.E.C., with Swedish incomes about six times greater than Portuguese incomes.[172]

E.F.T.A. regional policy is also of the integration and equalization type although interest in regional equalization is confined to English policy, and to some extent Swedish and Norwegian policies.

Unlike the E.E.C. countries, the E.F.T.A. countries contain relatively more regions that are either not developed or in need of adaptation,[173] but they also contain fewer regions where concentrated growth is causing congestion and resource misallocation. The former regions are to be found in almost all member countries while the latter type regions can be found only in England and to a lesser degree in Sweden. Yet, there are no legal provisions establishing a common regional policy at the community level, similar to the E.E.C.'s Social Fund and Investment Bank. Any interaction at the community level with respect to

common problems is in the area of information exchange only.[174]

It is conceivable that the lack of a unified approach to regional problems at the Association level may be indicative of the rather remote prospect of eventual (political/economic) unification contemplated at this point by the E.F.T.A. countries.

In summary, this discussion of socialistic and market-type economies has shown their awareness of the problems of urban-industrial agglomerations. There is also considerable agreement in a) assuming that such concentrations impose heavy burdens on investment budgets and b) that optimum size is determined at the point where extra growth, in the form of either population or industrial jobs, cost more in a congested area than outside of it. In socialistic countries these costs assume the form of direct and indirect investments in social services while in market economies the more nebulous form of social costs. The basic difference between the two types of systems is in justifying decentralization. Socialist states find decentralization necessary on account of their subscribing to a well-defined concept of social justice from which the criterion of maximizing social labor productivity is obtained while market economies, lacking an equally strong ideological motive, pursue equalization on more technical grounds.

Socialist states have been relatively more successful with equalization, or they have the capacity to be more

successful, because of a) the absence of a large private sector that would have to be "bribed" in order to behave optimally, and b) the arbitrariness (inherent in such systems) by which these systems can alter undesirable situations.

FOOTNOTES

[1]Lloyd Rodwin estimates that about 50 to 70 percent of the total investment budget is absorbed by social overhead which means that infrastructural investments diminish, in some direct fashion, the size of the investment budget. Lloyd Rodwin, "Choosing Regions for Development," in Public Policy, ed. by Carl J. Friedrich and Seymour R. Harris (New York: 1963), p. 148.

[2]This refers to the competitive or "cumulative advantage of regions which supply the inputs that support "an extensive stream of nationally-wanted production." See Harvey Perloff and Lowdon Wingo, "Natural Resource Endowment and Regional Economic Growth," in Regional Development and Planning, ed. by J. Friedman and W. Alonso (Cambridge: M.I.T. Press, 1964), pp. 224-225.

[3]Hollis Chenery, "Competitive Advantage and Development Policy," American Economic Review, LI (March, 1961), 18-51. See also, Ragnar Nurkse, Problems of Capital Formation in Underdeveloped Countries (New York: Oxford University Press, 1953), and W. Rostow, The Stages of Economic Growth (Cambridge and New York: Cambridge University Press, 1960).

[4]A. O. Hirschman, "Interregional and International Transmission of Economic Growth," in Regional Development and Planning, ed. by J. Friedmann and W. Alonso (Cambridge: M.I.T. Press, 1964), p. 624.

[5]Gunnar Myrdal has expressed a view that implicitly accepts the inevitability of unbalanced growth; its efficacy is, of course, another matter. See Gunnar Myrdal, Economic Theory and Underdeveloped Regions (London: Gerald Duckworth & Co., Ltd., 1957).

[6]Opinions about regions, as real and functional entities, vary from Isard's acceptance of their significance to Vining's outright dismissal of any such significance. See Walter Isard, Some Emerging Concepts and Techniques for Regional Analysis, Proceedings of the Western Exploratory Group of the Social Science Research Council on Regional Economic Analysis, Berkeley, 1952; and R. Vining, "The Study of the Spatial Structure of an Economic System" (paper presented at the Meeting of the American Economic Association, December, 1951).

[7]Some examples of this attitude are found in the following:

J. Friedmann, "Regional Planning: A Problem in Spatial Integration," Regional Science Association, V (1959), 175, and

A. O. Hirschman, The Strategy of Economic Development (New Haven, Conn.: Yale University Press, 1958).

[8]This view is expressed in J. Friedmann and W. Alonso, "Introductory Note," in Regional Development and Planning, ed. by J. Friedmann and W. Alonso (Cambridge: M.I.T. Press, 1964).

[9]None of the United Nations surveys undertaken for various European countries allotted any space for regional planning considerations. In the case of Greece, the Report of the FAO Mission did not recommend any policy of regional significance in spite of the fact that the war had more devastating effects on the rural regions of the country. See Food and Agriculture Organization of the United Nations, Report of the FAO Mission for Greece (Washington, D.C.: 1947).

[10]In the United States, the National Resources Planning Board's National Resources Development Report for 1942, contained a number of regional policies. See especially, Part III, Policy Considerations in Industrial Location. In Great Britain, the first policy statement that explicitly recommended the decentralization and dispersal of both industry and population from congested cities was the Barlow Report on the "Distribution of the Industrial Population." Regional unemployment was attacked by the Ministry of Labour's "industrial transference scheme" of 1928; see S. R. Dennison, Location of Industry and the Depressed Areas, 1939. Another relevant document is J. H. Jones' A Memorandum on the Location of Industry, app. II of the "Report of the Royal Commission on the Distribution of the Industrial Population" (Barlow Report), 1940. Even before industrial location and "overspill" became national issues, because of the war and mainly the Depression, the entire Garden City Movement can be said to be the logical antecedent of British regional policy.

[11]The rehabilitation of the Appalachia region has not really been an integral part of an announced regional policy. Moreover, the activities of various Government agencies (Forest Service, for one) have usually disguised their strong local economic development motives under various pretenses that are not related to a specific national (regional) policy.

[12]K. Dziewonski, "Theoretical Problems in the Development of Economic Regions with Special Emphasis on Poland," Regional Science Association, VIII (1961), 45. While in the West the criteria used for the delineation of regions are nodality, homogeneity, and policy-effectiveness (or what Boudeville calls policy-orientation), in socialist regional planning one single criterion has been adopted. This criterion seeks an areal combination of resources by which the productivity of labor is maximized. See J. G. Saushkin, "Large Areal Complexes of Productive Forces in the Soviet Union," Regional Science Association, VIII (1961), 95-104.

[13]There is evidence in the Soviet regional literature pointing out to the increasing responsiveness of people to the better living conditions in the Soviet East which has somewhat reversed preferred migratory patterns. This, in turn, has forced Soviet planners to employ various inducements, similar to those used in market economies, to restore the desired colonization patterns, based on the East to West migration flow. Part of the contemplated measures includes the formation of Soviet new towns. See V. V. Pokhishevskiy, et al., "On Basic Migration Patterns," Soviet Geography, V (December, 1964).

[14]The evolution of location theory, after Weber, can be stated as follows: (1) Weber): emphasis on the transport factor, as locational determinant, with labour and agglomeration factors in subsidiary roles. (2) (Palander, Sombard, Englander): introduction of consumer-demand markets as an additional locational factor. Emphasis shifts from the minimization of costs to the maximization of profits. (3) (Lösch, Ritschl, Predohl): Predohl used the principle of the substitution of factors of production which, through inter-industry cooperation, leads to the consideration of external and internal economies as factors of spatial industrial concentration. Losch develops a general theory of location of production on a macro-economic level, but at such level of abstraction that limits its empirical potential. (4) (Neo-Weberian stage): revisions of Weber by Isard, Hoover, et al., complex analysis of the firm or sector level still not capable of dealing with problems of regional development.

[15]Implicit to this argument is the question of how fast, if at all, resources react to earning differentials.

[16]F. Perroux states that "the policy of the so-called integration does not assert itself to the benefit of an abstract Europe, but very concretely, to the benefit of the Ruhr and of those industries which are most directly animated by it." See F. Perroux, Pôles de developpement ou nations? (Paris: Presses Universitaires de France,

1958), p. 261. Historically, European peripheral countries (Greece, Spain, Portugal, etc.) have experienced severe labor losses via migration to Europe's more industrialized areas. For a stronger emphasis of this argument, see Maurice Bye, "Freer Trade and Social Welfare: Comments on Mr. Heilperin's Article," International Labor Review (January, 1958), 46-47.

[17]B. Balassa, The Theory of Economic Integration (Homewood, Ill.: Irwin, 1961).

[18]The available data are admittedly incomplete to allow for strong conclusions in this matter. However, they are sufficient for our limited objectives.

[19]See Perloff and Wingo, Natural Resource Endowment.

[20]See Myrdal, Economic Theory.

[21]F. Perroux, Theories et Politique de l'Expansion Regionale (Brussels: 1961).

[22]G. H. Borts, "The Equalization of Returns and Regional Economic Growth," American Economic Review (June, 1960). See also, R. E. Baldwin, "Patterns of Development in Newly Settled Retions," Manchester School of Economics and Social Studies, XXIV (May, 1956). Baldwin developed the point that the technological nature of the production function of the export commodity will greatly affect the growth of the non-export sectors in newly settled regions.

[23]This argument is implicit in the discussion on the development of "growth poles." See Hirschman, The Strategy.

[24]Ibid., pp. 630-635.

[25]Perloff and Wingo, Natural Resource Endowment, p. 10.

[26]Ibid., pp. 11-12. A similar view is expressed in M. Thomas, "Resources and Regional Development: Some Comments," Regional Science Association, XIII (1964), p. 204.

[27]D. North, "Location Theory and Regional Economic Growth," Journal of Political Economy (June, 1955) makes a convincing case in pointing out that the stages of regional development, as described in (Löschian) locational-regional economic growth theory, have little or no resemblance to how actually regions have developed; especially, in North America. Historical patterns of regional development are said to have followed patterns of resource movements, as they reflected initial resource endowments, and

not the stages of: (1) self-sufficient subsistence economy; (2) trade, local specialization, transport improvements; (3) extensive to intensive land-use; (4) industrialization; (5) specialization in tertiary activity, export. North furthermore suggests that even the definition of a region should be restructured around a "common export base" concept.

[28]Myrdal's "backwash" and "spread" effects are similar to Hirschman's "polarization" and "trickling down" effects.

[29]F. Perroux's "poles de croissance" are also similar to Hirschman's polarization effects. Perroux's formulation requires that "the increase in the output of a propulsive industry may induce the creation of other activities not yet localized in the region." This in location (neo-Weberian) theory is an example of an agglomeration external economy.

[30]Hirschman's version of this process differs from Myrdal's in that he treats the "spread" (polarization) effects as desirable in the eventual integration of the economy. Myrdal, on the other hand, finds that polarization "accumulates" to the point where the resulting duality interferes with further growth.

[31]A partial testing of this hypothesis will be attempted in a later section of this chapter.

[32]Friedman and Alonso, Introductory Note, p. 6.

[33]F. Meyers, "Introduction," in Area Redevelopment Policies in Britain and the Countries of the Common Market, ed. by F. Meyers (Washington, D.C.: U.S. Government Printing Office, 1965), p. 9.

[34]This view is disputed by R. L. Meier, "Relations of Technology to the Design of Very Large Cities," in India's Urban Future, ed. by Roy Turner (Berkeley, Calif.: University of California Press, 1962).

[35]In the case of Greece, industrial subsidies were arbitrarily determined with no reference to possible firm response levels.

[36]Whether firms can "monetize" their anticipated economies or not is not the point as long as they respond to specific cash subsidies.

[37]Professor Meier finds that in Puerto Rico's decentralization scheme there were no "clear economic and social advantages" either with centralization or decentralization. For example, it costs $500 to remove a slum

dwelling housing five people and this amount is a capital loss to the industrial development fund ($500 would create a decentralized industrial job), but this loss was offset by $500 capital saving in the program for improving health and welfare in overcrowded cities. See R. L. Meier, Developmental Planning (New York: McGraw-Hill, 1965), p. 245. In Sweeden, the cost of creating one decentralized industrial job is about $20,000, not including public investments in housing and community services. See Organization for Economic Cooperation and Development, Working Party No. 6 of the Industry Committee, Policies for Regional Development. Addendum to Part IV, Sweeden (Paris: 1967), p. 77. In France, the cost is estimated at $1,440 per industrial job, of which 25 percent is an outright state subsidy. (Author's calculations.) These costs represent the basis upon which a meaningful subsidy mechanism can be constructed.

[38]See H. Maddick, Democracy, Decentralization and Development (Bombay: Asia Publishing House, 1963), chaps. 2 and 3. See also, United Nations Technical Assistance Program, Decentralization for National and Local Development (New York: 1962) for a number of case studies.

[39]This is aptly called "administrative socialism," as it applied to Yugoslavia in 1947-1951; see R. Bicanic, "Economic Growth Under Centralized and Decentralized Planning," Economic Development and Cultural Change (October, 1957), 64.

[40]The literature is not particularly rich on this point; the closest work to this problem is J. Timbergen, Centralization and Decentralization in Economic Policy (Amsterdam: North-Holland Publishing Company, 1954). However, Timbergen's main concern is the case of national economic planning with more than once decision-maker and outside a specific spatial context.

[41]These studies were prepared for the Office of Civil Defense by the Planning Research Corporation under the titles, Civil Defense Implication of Current and Future Urban Configurations (PRCR - 409, Contract No. OCD-OS-62-278), The Economic Feasibility of Decentralized Metropolitan Regions (PRCD-796, Contract No. OCD-OS-62-278), Implementation of an Ordered Sprawl Type of Urban Configuration (PRCD-1219, same contract no.) and, Urban Form as a Passive Defense Variable (PRCD-1341, Contract No. OCD-PS-64-201.

[42]The Appalachian case is a limited one; other local cases of economic depression were largely rehabilitated through local developmental efforts, for example, see Committee for Economic Development, Economic Development Efforts: Five Case Studies, Supplementary paper No. 18 (New York: Committee for Economic Development, 1964).

[43]Defense expenditures "are prohibited by law from paying a price differential to relieve economic dislocations, including unemployment conditions." This does not prevent, however, for reserve funds to be spent in labor surplus areas. Office of the Assistant Secretary of Defense, Supply and Logistics, Defense Procurement in Labor Surplus Areas (Washington, D.C.: U.S. Government Printing Office, 1958).

[44]M. L. Weidenbaum, "Shifting the Composition of Government Spending: Implications for a Regional Distribution of Income," Regional Science Association (1966). See also J. Maxwell, "The Equalizing Effect of Federal Grants," Journal of Finance, IX (May, 1954).

[45]See United States Department of Commerce, Report of the Independent Study Board on the Regional Effects of Government Procurement and Related Policies (1967), pp. ix-xii.

[46]C. J. Friedrich, Alfred Weber's Theory of Location of Industries (Chicago: University of Chicago Press, 1929).

[47]For a fuller description see W. Isard, Location and Space Economy (Cambridge: M.I.T. Press, 1956), pp. 172-188. Note that this classification is not intended to be exhaustive, but to include the minimum terms useful for present purposes. Other writers include transfer economies in this group, for example, H. Nourse, Regional Economics (New York: McGraw-Hill, 1968).

[48]C. Bauer, "The Case for Regional Planning and Urban Dispersal," in Housing and Economic Development, ed. by B. Kelly (Cambridge: M.I.T. Press, 1955), p. 47. On the other hand, Rodwin suggests that concentrated centralization may be desirable since limited resources available for development require some principle of selection and they are not sufficient for a systematic policy of scatter. See L. Rodwin, "Metropolitan Policy for Developing Areas," in Regional Economic Planning, ed. by W. Isard and J. Cumberland (Paris: Organization for Economic Cooperation and Development, 1961), p. 223.

[49]Several countries, including the U.S.S.R., Poland and Hungary, are or have been engaged in urban decentralization. A more notable case is the British experiment with new towns.

[50]L. Rodwin, "Planned Decentralization and Regional Development with Special Reference to the British New Towns," Regional Science Association (1958), even suggests that this accounts for the British New Towns planners' emphasis on balance within rather than between towns.

[51]Charles M. Tiebout, "A Pure Theory of Local Expenditures," Journal of Political Economy, 64 (October, 1956), 419.

[52]L. H. Klaassen, "Regional Policy in the Benelux Countries," in Area Redevelopment Policies in Britain and the Countries of the Common Market, ed. by F. Meyers (Washington, D.C.: U.S. Government Printing Office, 1965).

[53]Ibid., p. 29.

[54]Klaassen, Benelux Countries, p. 29.

[55]W. Isard, Methods of Regional Analysis (Cambridge: M.I.T. Press, 1960).

[56]Isard, Location and Space-Economy, p. 187.

[57]E. J. Mishan, The Costs of Economic Growth (London: Staples Press, 1967), p. 74.

[58]Ibid., p. 75.

[59]Meier, Developmental Planning, p. 245.

[60]Rodwin, Planned Decentralization.

[61]This aspect of decentralization is examined at greater length in the next few pages.

[62]This means that decreases in total agglomeration economies, though not a factor in further industrial location, are accompanied by disproportionate increases in total social cost. For example, $1 of gain for firm X covers about at a $1.50 loss to society, while at R these amounts are equal. If net economies are passed on to the consumer an agglomeration can assume size 0 ; if not, the slope of TS can be adjusted to reflect the incidence of agglomerations economies, and decentralization decisions may be made anywhere between V + 1 and - 1. In this respect OV is an optimum.

[63]A rank-size type is one to which the distribution of cities by population size class is truncated lognormal.

[64]A primate type is one where a stratum of small towns and cities is dominated by one or more very large cities with few or no cities of intermediate sizes.

[65]J. B. Berry, "City Size Distributions and Economic Development," in Regional Development and Planning, ed. by

J. Friedmann and W. Alonso (Cambridge: M.I.T. Press, 1964), p. 152. However, Nourse suggests that "changes in size, spacing, and number of cities, caused by technological change in transportation may cause individual cities to change their rank in the hierarchy of cities." See Nourse, Regional Economics, p. 224.

[66]See, for example, N. V. Sovani, "The Analysis of Over-Urbanization," Economic Development and Cultural Change, XII (January, 1954), and (anonymous) "The Price of Unwise Urbanization: A Proposal for Urban Growth," Quarterly Economic Report, Nos. 50 and 51 (no date). Also, C. Bauer-Wurster, "Urban Living Conditions, Overhead Costs, and the Development Pattern," and B. Harris, "Urban Centralization and Planned Development," both in India's Urban Future, ed. by Roy Turner (Berkeley, Calif.: University of California Press, 1962).

[67]Miss C. Bauer-Wurster quotes figures that are 25 percent higher across the board; Bauer-Wurster, Urban Living Conditions, p. 283.

[68]Harris, Urban Decentralization, p. 288.

[69]G. M. Neutze, Economic Policy and the Size of Cities (Canberra: The Australian National University Press, 1965).

[70]Ibid., p. 58.

[71]Ibid., p. 75.

[72]A size of 125-150,000 is, for example, favored for at that range, among other components, administrative cost as a percentage of total expenditures is at a minimum. Ibid., p. 69. As a comparison, in Russian literature the figure of 30,000 to 80,000 population is mentioned for satellite cities.

[73]The two leading writers of this group are R. L. Meier for the Technologists and C. A. Doxiadis, for the Ekisticians.

[74]Urban decentralization, as an issue, has not stirred any controversies in the literature of regional planning because of this field's heterogeneity. One can fairly conclude that there are no controversies in this field of any consequence, not that there is consensus as we are showing here, but because the high degree of this field's fragmentization requires specialized channels of communication that would bridge its various sub-areas. Such channels do not exist.

[75]R. L. Meier, Resource-Conserving Urbanism for South Asia, Regional Development Studies VII (Ann Arbor, Mich.: Department of Resource Planning and Conservation, School of Natural Resources, The University of Michigan, 1968), p. 7.

[76]"The City of the Future," Ekistics, 1965, XX, 116; see especially the section on Ecumenopolis.

[77]Meier, Relations of Technology, p. 299.

[78]Meier, Resource-Conserving Urbanism, p. 7.

[79]Edward Mason, "Is Megalopolis Inevitable in the Less Developed World?", Ekistics, XXIV (December, 1967), 493.

[80]Some writers argue that urban problems in highly developed societies, such as rising costs and/or deteriorating quality of urban life with greater scale, is due to the demonstrated failure of urban policy and management to apply the best technology and arrange the best combination of factors; see W. Thompson, "Internal and External Factors in the Development of Urban Economies" (unpublished paper, Wayne State University, 1968), p. 21.

[81]It is perhaps erroneous to lump the technologists and ekisticians together in the same group and cast them the role of decentralization critics. Their relevance to this discussion is their "escape" from optimum city-size formulas and line of approach that stresses the feasibility of large-scale aggregation. Their scope, however, is not confined to this problem and extends, especially of the ekisticians, over the entire spectrum of human organization, both spatial and social.

[82]Various other countries are presently considering similar policies, but none is more immiment than that of the Soviet Union.

[83]David Steele, More Powers to the Regions (London: The Fabian Society, 1964), p. 12.

[84]Rodwin, Planned Decentralization.

[85]A. Young, "Industrial Location Policy in Great Britain," in Methods of Industrial Development, ed. by A. Winsemius and J. Pincus (Paris: Organization for Economic Cooperation and Development, 1961), pp. 181-183.

[86]Ministry of Housing and Local Government, The South-East Study.

[87]Rodwin, Choosing Regions for Development.

[88]Recent American efforts in developing new towns (Columbia, Reston etc.) are pure exercises in architectural design and hardly anything more. The Ekisticians' new town schemes are also largely imbedded in deep architectural convictions where the shape of the shell and its symmetry determines social order and functionality.

[89]United Nations, Report of the United Nations Symposium on the Planning of New Towns (Moscow, U.S.S.R., August 24-September 7, 1964).

[90]Ibid., p. 34.

[91]Ibid., p. 31.

[92]V. G. Davidovich, "Satellite Cities and Towns in the U.S.S.R.," Soviet Geography, III (March, 1963), 33.

[93]Pokshishevskiy, et al., On Basic Migration Patterns.

[94]These figures are from the 1959 Census; see V. G. Davidovich, "Urban Agglomerations in the U.S.S.R.," Soviet Geography, V (November, 1964), 42.

[95]Satellite places" include existing orbital cities and proposed new towns.

[96]Mr. Rahman finds that it would pay, under certain conditions, to concentrate investment in less developed regions, that have a higher rate of saving than other regions. He states that "in the presence of differential regional rates of saving, the rate of growth of total national income is not necessarily maximized by concentrating investment in the more productive region throughout the planning period." He subsequently shows in a two-region model when to shift investments from one region to another. See, M. A. Rahman, "Regional Allocation of Investment," in Regional Development and Planning, ed. by J. Friedman and W. Alonso (Cambridge: M.I.T. Press, 1964), p. 655. Note that in the above context, the allocation of (productive) investment may have an equalizing effect on the economy which is largely incidental.

[97]In those countries where urbanization rates exceed growth rates, the large urban agglomerations absorb most of the funds earmarked for the provision of infrastructure, thus reducing the planning authority's capacity to embark upon an effective policy of regional equalization. This by itself has become a powerful argument for urban decentralization.

[98]This may entail conflicts between social goals and maximizing economic growth. The purely economic criterion for allocating development resources would call for priority to be given to alternatives on the basis of greatest marginal contribution to be increased output per unit of input. See S. Robock, "Strategies for Regional Economic Development," Regional Science Association, VII (1965), 132. This does not help at all, however, in solving the problem. A further refinement of the above index is Professor Stolper's profitability criterion which, although more applicable to productive investment, I suspect has equal validity in considering social investments. See W. F. Stolper, Planning Without Facts: Lessons in Resource Allocation from Nigeria's Development (Cambridge: Harvard University Press, 1966), pp. 55-56 and 138-139.

[99]B. V. Cholanovitch, "Discussion Paper of P. N. Rosenstein-Rodan's How to Industrialize an Underdeveloped Area," in Regional Economic Planning, ed. by W. Isard and J. Cumberland (Paris: Organization for Economic Cooperation and Development, 1961), finds that the type, at least of infrastructure must depend on the type of expected (induced) industrialization, pp. 213-216.

[100]For a discussion of a similar concept see, J. Tinbergen, "Research on the Geographical Decentralization of Industry in the Netherlands," in Guest Lectures in Economics, ed. by E. Henderson and L. Spaventa (Milano: Instituto di Economica e Finanza, D. A. Ciuffo, 1962), pp. 234-236.

[101]S. Kuznets, Underdeveloped Countries and the Pre-industrial Phase in the Advanced Countries: An Attempt at Comparison (Rome: Proceedings of the World Population Conference, 1954).

[102]It is less difficult in the case of centrally planned economies.

[103]For example, the regional development of the Italian South received attention as early as 1947 (Law No. 1598), the Cassa per il Mezzogiorno was set up in 1950, and in 1954, the Vanoni Plan for the South's development went into effect. French preoccupation with the size of the Paris agglomeration dates back to 1955 while the origins of the Dutch industrial deconcentration policy can be traced to 1956.

[104]In the partial testing of this hypothesis, see Table 6, two indices are used.

[105]For an excellent treatment of the subject see, E. M. Hoover, The Location of Economic Activity (New York: McGraw-Hill, 1948), pp. 215-226 and pp. 255-256.

[106]Berry, City Size Distributions, p. 152.

[107]It is recognized that differences in defining urbanization may account for this problem, since Berry took as urban percentage of population in cities of 20,000 and more, while we are using in this analysis cities of 5,000 and more.

[108]Immediately following the formation of the Soviet New Economic Policy (NEP), Soviet economic regionalization became an important issue. In 1921, I. Aleksandrov suggested the formation of economic regions and details were worked out by the Kalinin Commission (the Administrative Commission of the All-Union Central Executive Committee) of 1921-22, and by the Gosplan's regionalization commission (State Planning Commission). The GOELRO electrification plan is perhaps the earliest policy effort at regional development.

[109]For a description of Soviet population and industrial agglomeration patterns see Pokhishevskiy, et al., On Basic Migration Patterns; also V. G. Davidovich, Urban Agglomerations in the U.S.S.R.; and Ye N. Slastenko, "The Distribution of Productive Forces and the Efficiency of Differences Between Town and Countryside," Soviet Geography, V (February, 1964).

There is little information about agglomeration patterns and problems in the Eastern European countries. The Hungarian experience is documented in The European Economic Commission, "The Excessive Agglomeration of Industry and Population in Budapest: A Problem of Regional Economic Planning," Geneva, 1964. (Mimeographed.)

[110]For a good account of what may be called a Soviet New Town Policy, see Davidovich, Satellite Cities; and G. Ye Mishchenko, "Satellite Cities and Towns of Moscow," Soviet Geography, III (March, 1963).

[111]K. Mihailovic, "The Regional Aspect of Economic Development," Eastern European Economics, II (Fall-Winter, 1963-1964), p. 32.

[112]Pokhishevskiy, et al., On Basic Migration, p. 3.

[113]Social costs and social profitability are easier to understand in a socialist context since there are no conflicts between these valuations with private cost and profitability valuations. Soviet writers, as a result, are highly critical of what they conceive to be a contradiction

in "bourgeois" economic reasoning that allows for social cost considerations to play an important role in regional decentralization decisions.

[114]J. G. Saushkin, "Large Areal Complexes of Productive Forces of the Soviet Union," Regional Science Association, VIII (1961), 93.

[115]The West comprises 12 regions; namely, Northwest, Northeast, West, Moscow (Central-Industrial), Central-Black Earth, Vyatka-Vetluga, Mid-Volga, Urals, Southwest, Southern Mining, Southeast and Caucasia.

[116]The East, programmed in 1921-22, comprises 9 regions; namely, West Siberia, Kuznetsk-Altai, Yenisei, Lena-Angora, Yakutia, West Kazakhstan, East Kazakhstan, Central Asia, and Far East. There have been several regional boundary reshufflings and the tendency is towards the creation of more regions.

[117]The subjective (see, multivariate) criteria used by western geographic thought to delineate regions are viewed by almost all Soviet writers as expedient tools for the researcher's convenience and "totally irrelevant." See, P. M. Alampiyev, "The Objective Basis of Economic Regionalization and Its Long-Range Prospects," Soviet Geography, II (October, 1961), 47. Alampiyev reports that the Gosplan's regionalization work of 1921-22 rejected all "statistical definitions of regions as meaningless summations of statistical data based on a single criterion," p. 67. More recent "errors" have been reported in Soviet literature and committed by writers who have accepted "bourgeois" regional definitions. Some examples are N. N. Kolosovskiy's, Principles of Economic Regionalization (Moscow: 1958), who apparently related a region's definition to the location of production; also, I. I. Belousov's, "On the Role of Transportation in Economic Regionalization," in Problems in the Economics of the Food Industry (Moscow: Moscow Technological Institute of the Food Industry, 1957), who have attributed economic regionalization to socio-historical processes. Even Alampiyev's interpretation of regional objectivism (see above reference) as being multivariate, and therefore western, has come under attack by J. G. Saushkin, "On the Objective and Subjective Character of Economic Regionalization," Economic Geography, II (October, 1961). Saushkin's regional definition is very lucid. He states that "a single-objective system of regions exists . . . this system is not based on a region's internal economic relations (many variants integrated into one another) but on a law-governed combination (complex) of productive forces. Hence, the development of the regional territorial complex of productive forces is the basis of the objective

process of growth and increasing complexity of the structure of the economic region, the development of the region's national specialization, and its internal and external economic relations," p. 76. Additional references on the problem of Soviet regionalization can be found in the following articles, all from Soviet Geography. These are:

A. M. Moshkin, "What is a Territorial Complex?", Soviet Geography, III (November, 1962).

A. F. Kurzakin, "Economic Administrative Regions: Their Specialization and Their Integrated Development," Soviet Geography, III (November, 1962).

I. V. Komar, "The Major Economic-Geographic Regions of the U.S.S.R.," Soviet Geography, I (April, 1960).

P. M. Alampiyev, "Problems of General Economic Regionalization at the Present Stage," Soviet Geography, I (October, 1960).

O. A. Konstantinov, "The Present Status of Economic-Geographic Studies of the Economic Regionalization in the U.S.S.R.," Soviet Geography, I (September, 1960).

P. M. Alampiyev, "Tendencies in the Development of Major Economic-Geographic Regions," Economic Geography, I (April, 1960).

V. V. Pokhishevskiy, "The Role of Population Geography in Problems of Economic Regionalization of the U.S.S.R.," Soviet Geography, I (September, 1960).

Ya G. Feygin, "Problems of Improving the Regionalization of Production and Consumption of Industrial Output," Soviet Geography, V (December, 1964).

Ya G. Saushkin and T. M. Kalashnikova, "Current Problems in the Economic Regionalization of the U.S.S.R.," Soviet Geography, I (June, 1960).

For a quick review of the total picture the reader is referred to V. M. Gokhman and Yu G. Lipets, "Some Trends of Soviet Regional Studies," Regional Science Association, XVIII (1966).

[118] J. G. Saushkin, "The Construction of Economic Models of Regional and Local Territorial-Production Complexes," Soviet Geography, II (April, 1961). Saushkin has presumably quoted from Lenin's Draft of a Plan for a Scientific and Technical Work.

[119] The "heretic" Belousov, found earlier to espouse "bourgeois" regional definitions, is again dissenting in "Transportation and the Formation of Economic Regions," Soviet Geography, V (November, 1964), pp. 19-23, by advocating that a combined minimum of transport and production costs should determine Soviet location patterns. He is joined by another writer, N. N. Nekrasov, who makes a similar plea for the importance of transport costs. See, N. N. Nekrasov, "Scientific Principles for a General Long-Range Scheme of Location of the Productive Forces in the U.S.S.R.,

Soviet Geography, V (November, 1964). Both Belousov and Nekrasov were, as of 1964, members of the U.S.S.R. Gosplan (Author).

[120]See, A. Ye Probst, "Calculation of the Economic Effect of Regional Productive Specialization," Soviet Geography, V (February, 1964), 34. More can be expected to develop in the area of transport costs and it is conceivable that Soviet location theory will ultimately adopt both transportation cost and external economies, in some modified form, in order to explain the spatial distribution of economic activity in the Soviet Union.

[121]P. M. Alampiyev, "New Aspects of the Location of Production in the Period of the Full-Fledged Construction of Communism," Soviet Geography, III (January, 1962), 50.

[122]All of the statistical information used in the next few paragraphs is from Slastenko, The Distribution of Productive Forces, pp. 24-32.

[123]Each region has several Oblasts; some Oblasts consist entirely of a city, as in the case of Leningrad. These figures are for 1961.

[124]Slastenko, The Distribution of Productive Forces, pp. 26-27.

[125]Slastenko cites as the main reason the pressure exerted by leaders of Oblasts, krays, and republics on the State Planning Committee (Gosplan), U.S.S.R., to locate new industrial plants within their jurisdiction. This, in turn, increases their prestige within the bureaucratic hierarchy and improves their chances for advancement. Central cities seem to be heavily favored.

[126]The Symposium on Planning and Development of New Towns, held in Moscow, U.S.S.R., in 1964, and sponsored by the U.N., International Labor Organization, U.N.E.S.C.O., the United National Educational, Scientific and Cultural Organization, and the World Health Organization, produced a number of policy recommendations for new towns to which, both socialist and capitalist planners, fully subscribed. See the Report, pp. 34-38.

[127]Davidovich, Satellite Cities, pp. 33-34.

[128]Ibid., p. 34.

[129]There are no data, at least in Davidovich, to enable us to make this analysis. Davidovich does mention, however, that the economic functions of central cities and their satellites are complimentary. See, Davidovich, Satellite Cities, pp. 8-9.

[130]Pokshishevskiy, The Role of Population, p. 3.

[131]For a good account of the reasons for this change see, R. Selucky, "Slovakian Development," Eastern European Economics, IV (Fall, 1965), 42-50.

[132]The earliest concern with Slovakia's stagnant condition is recorded in I. Karvas, The Unifying of Conditions of Production in the Czech Lands and Slovakia. Karvas called for the reduction of railway tariffs in Slovakia, more credits to Slovak businessmen, and the abolition of tax concessions for Czech branches in Slovakia.

[133]Ibid., p. 46.

[134]One of the major objectives, and perhaps the one to which the Communist Party had a deed ideological commitment, of the first five-year plan, 1949-1953, was the industrialization of Slovakia. See, Z. Vergner, "Economic Planning in Czechoslovakia," in Planning for Economic Development (New York: The United Nations, 1965), p. 2.

[135]"The Main Features of National Economic Planning in Hungary," Paper submitted by Hungary in U.N., Planning for Economic Development (New York: 1965), p. 69. Characteristically, any differences between planned and actual results in "liquidating" regional disparities are blamed on Hungary's capitalist past. See above, p. 48.

[136]"The Excessive Agglomeration of Industry and Population in Budapest: A Problem of Regional Economic Planning" (Unpublished paper submitted by Hungary to the Third Meeting of Senior Economic Advisors to Economic Commission for Europe Governments, Geneva, November, 1964), pp. 7-8.

[137]Ibid., p. 1.

[138]Earning differentials have been somewhat equalized with a recently instituted differentiated payroll tax paid by enterprises. Its effect on the in-flow of labor, however, has been rather dubious since Budapest's population continues to increase at a rate of 12 percent per year.

[139]Between 1949 and 1958, about 40 percent of the country's increase of industrial employment occurred in Budapest.

[140]Hungary, The Excessive Agglomeration, p. 9.

[141]While, as pointed out earlier, in 1961 Budapest accounted for 42.2 percent of total industrial employment, in 1949 the same figure was 50 percent and in 1958 it was 44.8 percent.

[142]Hungary, The Excessive Agglomeration, p. 18.

[143]Ibid., pp. 18-22; the resistance to these measures, other than the national resistance of skilled personnel to leave the city, is considerable within the bureaucracy whose various elements argue that although decentralization is cheaper in the short-run, in the long-run it is much more expensive because it takes more time to develop industrial sites outside the city's readily available facilities. This resistance is best expressed by the fact that new industries interpret the meaning of "outside Budapest" as being beyond the 25 km. zone and no real decentralization into other regions takes place as these firms agglomerate in Budapest's urban fringe.

[144]Some interesting measurements of regional differentiation in Poland show a fairly well balanced pattern of economic activity and a gradual reduction of existing disparities. See, Antoni R. Kuklinski, "Criteria of the Comparative Assessment of Economic Levels of Different Regions" (paper submitted to the Third Meeting of Senior Advisers to the ECE Governments, Geneva: 1964).

[145]The Upper Silesian Industrial District is the only district with signs of congestion and some decentralization has occurred in it.

[146]Decentralization proceeded in four legislative phases: (1) the creation of workers' self-management of 1950 by which workers' councils superseded the role of the Federal Planning Commission in planning at the individual firm level; (2) the legislation of 1955 by which local units assumed total control of individual enterprises; (3) the 1963 Constitutional provision which specified the commune as the basic economic and political force in Yugoslavia; and (4) the Economic Reform of 1965 by which the allocation of (Federal) investment was "decentralized" and placed at the disposal directly of economic enterprises. For a detailed description see, R. Burton, et al., "Toward A System of Social Planning in Yugoslavia," Regional Science Association, XVIII (1966). 76-79.

[147]The transfer of funds from prosperous to undeveloped regions, via the disposition of the federal investment fund, was decided to be based on the dual criterion of needs versus possibilities of a region rather than its relative backwardness. See B. Cholanovitz, "Methods of Industrializing Underdeveloped Regions in Yugoslavia," in Methods of Industrial Development, ed. by A. Winsemius and J. Pincus (Paris: Organization for Economic Cooperation and Development, 1962), p. 158.

[148]In Yugoslavia's case, by region it is meant one of the six autonomous republics and of the two self-governed territories.

[149]Cholanovitz, Methods, p. 163.

[150]Bidders are economic firms, territorial units, communal councils and the republics.

[151]Urban decentralization can be incidental to the attainment of this objective or it could be the primary objective itself, with industrial dispersal as the secondary objective.

[152]A major aspect of regional integration policy is area redevelopment. For an excellent treatment of the fundamentals of this type of policy see, L. H. Klaassen, Area Economic and Social Redevelopment (Paris: Organization for Economic Coordination and Development, 1965).

[153]Political and Economic Planning, Regional Development in the European Economic Community (London: Allen and Unwin, 1962), p. 14.

[154]L. B. Ginsburg, "Regional Planning in Europe," in Regional Planning (New York: United Nations, Housing, Building and Planning, 1959), p. 134.

[155]D. L. McLachlan and D. Swann, Competition Policy in the European Community: The Rules in Theory and Practice (London: Oxford University Press, 1967), p. 397.

[156]These estimates are based on 1961 data.

[157]There is no apparent reason why one should insist on this differentiation between decentralization and integration other than to suggest that often "orthodox" regional development requires that production be centralized (spatially) for greater efficiency. In this respect, these two policies may be incompatible considering the nature of decentralization. Among the E.E.C. countries, France has a regional structure that justifies the simultaneous pursuance of both policies at a level at which contradiction of a spatial nature can be easily avoided.

[158]The Dutch case is a rare one since there is evidence to suggest that the agglomeration level in North and South Holland pulls per capita incomes down as compared to less congested regions. See, L. H. Klaassen, et al., "Regional Income Differences in Holland," Regional Science Association, X (1962), 80.

[159] In 1956, on the basis of municipal expenditures, it was calculated that the average difference in expenditures of a town with 20,000 compared with a town of 250,000 inhabitants was $10 per capita per year. See, Klaassen, Benelux Countries, p. 40.

[160] Ibid., p. 40.

[161] From 1951 to 1958 Dutch regional policy was exactly the reverse in that it sought to develop the West by using the same incentives for centralization purposes.

[162] The difficult questions in considering a decentralization scheme are (1) which areas tend to receive the displaced activity and (2) whether decentralization creates additional employment or it merely redistributes the same. Of course, the basic question is whether decentralization takes place at all, and if yes, it is very important to test the effect of stronger measures on the resulting locational pattern. Various costs per policy could be also tested until a particular scheme is found that has the greater impact on the locational pattern per dollar of expenditure.

[163] Between 1950 and 1959, 85 percent of the increase in total industrial employment took place outside the West. See, Netherlands, Industrialization as a Means, p. 15.

[164] The appropriate figures for interregional migration are not very representative table since, not knowing total migration for the years 1954-1962, the five-year total (between 1958 and 1962) is applied to the 1962 base.

[165] International Information Centre for Local Credit, Government Measures, p. 62.

[166] Bouchet, Regional Development in France, p. 136.

[167] Ibid., p. 138.

[168] In 1961, the Expert Committee for Spatial Planning, in its report, "Principles for Spatial Policy Measures of the Federal Government and Their Coordination," recommended the "avoidance of further geographical concentration of both population and economic activity." See, D. Storbeck, "Area Redevelopment in the Federal Republic of Germany," in Area Redevelopment Policies in Britain and the Countries of the Common Market, ed. by F. Meyers, p. 191.

[169]Germany, "Regional Economic Policy in the Federal Republic of Germany" (paper submitted to the Third Meeting of Senior Economic Adviser to ECE Governments, Geneva, 1964), p. 3.

[170]Even this aspect of German regional policy was not systematically pursued because the cost of relocating the refugees from the poorer regions to the industrialized areas was considered to be too high. See, United Nations, "Problems of Regional Development and Industrial Location in Europe; 1954," in Regional Planning and Development, ed. by J. Friedmann and W. Alonso (Cambridge: M.I.T. Press, 1964), pp. 416-17.

[171]Germany will probably score the greatest gains with the removal of the trade barriers by the Common Market since the Market's labor-abundant regions, e.g., Southern Italy, will export labor that is critical for Germany's further growth. Whether this additional activity will be spread evenly among German regions or it will be polarized in the "congestion" areas is a matter of considerable speculation. See, for example, E. Olsey, "Regional Income Differences Within a Common Market," Regional Science Association, XIV (1964); and R. Funk, "Some Aspects of an Optimum Pattern of Industry Location in the European Economic Community," Regional Science Association, XIV (1964), for some fo the leading arguments as to what may happen when (a) the removal of trade barriers adds to factor mobility resulting to factor price equalization (the Heckscher Ohlin theorem), and (b) whether or not integration at the E.E.C. level is likely to accentuate or diminish regional incomes.

[172]By comparison, in Germany per capita incomes are about two times greater than those of France.

[173]Adaptation is synonymous, in the above context, to redevelopment.

[174]European Free Trade Association, Regional Development Policies in EFTA, pp. 5-16.

CHAPTER III

GREEK REGIONAL DEVELOPMENT

> . . . but that our aim in founding the State was not the disproportionate happiness of any one class, but the greatest happiness of the whole . . .
>
> --Plato, Republic

Overview

This chapter consists of three parts: a description of the Greek regional structure, an evaluation of existing policies, and analysis of regional data. The descriptive and analytic parts are necessary for assessing the success or failure of existing policy objectives and policy instruments.

There are two main objectives to this chapter. The first is to show how consistent Greek regional policy has been with the given regional structure. This involves the descriptive part. The second objective is to measure the impact of the decentralization policy on the locational pattern of the country's industry as a means of both determining the policy's efficiency and its relevance to the problem.

There are many limitations in an analysis of this kind of which the most serious are the lack of relevant

regional data and of an operational framework that can lend itself to the making of pertinent decisions. Both limitations are evident by the inability of many planning efforts to define the problem and interrelate the costs and benefits that each type of policy involves. Based on available data, a good definition of the problem does not necessarily provide a clue as to the desired course of action. Rather, the design of policy depends on the capacity of the decision-making authority to formulate a set of objectives that are administratively feasible and consistent with specific needs. Moreover, feasibility becomes a function of the planning agency's implementing capacity as well as its ability to choose among various implementation strategies according to available resources. Consistency of needs and objectives, on the other hand, is external to the agency's implementing efficiency and a function of the decision-making authority's propensity to conceive the problem in its entirety. When both functions, decision-making and implementation, are discharged within the same institutional setup, as with the Greek Ministry of Coordination, the selection of the proper policy objective is usually influenced by the agency's ability to implement it.

Since Greece has no institutional or political provisions for the existence of effective local government, the choice of pursuing a regional equalization policy can be largely explained in these terms.[1] "Orthodox" regional

development would have a limited amount of success without overhauling the Greek political and public administration structures.

With reference to the first objective, it should be noted that Greece's unequal distribution of economic activity among regions is not a necessary nor a sufficient condition for the pursuit of regional decentralization. On the contrary, if this inequality is consistent with generally accepted criteria of location theory, as has been suggested,[2] any attempt to change the locational pattern of industry in favor of less developed regions would have to be very costly in order to overcome the locational advantages of the Athens region. This cost, if it is not offset by at least equal savings in social costs that a reduction in the size of Athens will supposedly produce, must be borne at the expense of the general developmental effort.

One way of selecting between a policy of equalization and one of integration is perhaps to prove that one or the other is not practical. In the Greek case, the relative efficiency of the decentralization measures, as it is reflected in the relationship between the cost of these measures and their impact on the industrial location pattern over a period of time, can demonstrate the validity of one of two possible hypotheses: First, the system of subsidies employed was inadequate, in which case other methods can be examined, or second, subsidies were too low

to have an appreciable effect on locational decisions, in which case a quantitative adjustment could be relied on to do the job. The latter case invites a method to be used by which alternative subsidy levels can be tested, in an incremental fashion, against willingness to locate or relocate outside the area of concentration and against potential reductions in agglomeration diseconomies. If expected savings are estimated to be less than expected program costs there is no need for decentralization.

Other incentives for decentralization can be tested in a similar fashion and if it is determined that none produces a net gain of benefits from reducing social costs over their cost the usefulness of the decentralization approach must be ruled out.[3] However, in order to find out how much decentralization the State purchased and its cost, aggregate shifts of industrial employment for the period of 1958-1963 will be related to the costs incurred by the State in offering incentives. These shifts may not have been caused by these incentives exclusively. Simultaneously, shifts in industrial earnings will be measured in order to correlate their changes with changes in the Greek locational structure, as described partly by the so-called localization coefficients.

If changes in the locational structure are found to be more responsive to earnings differentials (among industries, not regions) these can be considered as additional deterrents to decentralization. In other words,

given the higher wage rate prevailing in the area of concentration, which is in itself an index of the preference that firms have in retaining their location as well as an indication of the level of locational economies, any counteracting measures can be assumed to be inadequate if they do not at least match locational economies.

In addition to measuring changes in the industrial location pattern, the shifts in regional specialization must also be measured in order to determine whether or not regions increase their share of total economic activity. Again, if the area of concentration retains or even increases its relative share it will have to be interpreted as an additional index of the effectiveness or lack of it, of decentralization.[4]

The rejection or adoption of decentralization on this specific ground cannot be said to have universal applications. However, other countries with similar concentration patterns to Greece may find this course of action attractive. The method of determining its attractiveness should be valid regardless of the degree of regional concentration.

The disadvantage of this approach is that it is not empirically adjusted to the pertinent social costs involved with reciprocal changes in the agglomeration size. With the necessary data this adjustment could be relatively trivial. However, such data are not available for this study.

Some Indices of Greek Regional Inequality

A casual examination of the composition of the Greek gross national income, Table 13, will reveal that the Greek economy is essentially agricultural in nature with a relatively small industrial sector. With the exception of the years between 1948 -1955, that marked the rehabilitation and subsequent stabilization of the war-torn Greek economy, the relative shares of the agricultural, industrial and service sectors from the gross national income have remained for the most part unchanged and in spite of high growth rates that the economy experienced during the 1948-1964 period.

For example, the agricultural share decreased from 34 percent in 1948 to about 25 percent in 1955 and remained at this percentage. Conversely, the manufacturing share increased from 13 percent in 1948 to 17 percent in 1955 and has been stabilized at 16 percent since 1955. The share of services from gross national income, however, has been rather stable with a small tendency to decrease, i.e., from 47 percent in 1948 to 46 percent in 1964.

The stability of the various components of the economy indicates that there are no massive movements either towards industrialization or towards a more intensive use of the country's agricultural resources. For the former there is a lack of the necessary resources, such as iron ore, coal, etc., to sustain it. For the latter there are several factors, such as low incomes, migration

TABLE 13

INDUSTRIAL ORIGIN OF GROSS NATIONAL INCOME AT FACTOR COST
(In Millions of Dollars at Current Prices)

	1948	1955	1961	1964
Agriculture, forestry & fishing	206.9	658.2	958.4	1,155.2
Mining and quarrying	2.9	19.5	37.0	44.0
Manufacturing	82.2	338.8	562.2	731.6
Electricity, gas & water works	4.6	21.6	52.5	77.5
Construction	20.7	98.6	229.9	328.3
Services	278.0	1,081.6	1,652.0	2,184.3
Gross domestic product at factor cost	595.3	2,218.3	3,492.0	4,520.9
Net income payments to factors of production due from the rest of the world	3.4	31.2	79.4	111.6
Gross National Income at factor cost	598.7	2,249.5	3,571.4	4,632.5

Source: Calculation based on Ministry of Coordination, National Accounts of Greece, No. 16 (Athens: 1967), 49-50.

to the Athens region, and others, that seem to pre-empt any prospects for development in this direction.

The distribution of productive and other activities, among the various regions, the most important manifestation of the Greek regional problem, is neither equal nor stable.[5] There exist great disparities between the Greater Athens Region (GAR) and the rest of the country with respect to incomes, standards of living, and infrastructural capital.

The intensity of the Greek regional problem is clearly reflected in the relative population increase of the Greater Athens Region vis-a-vis the rest of the country. During the decade of 1951-1961, total population increased from 7,630,000 to 8,380,000, i.e., by 9.9 percent, while GAR's population increased from 1,378,000 to 1,852,000, i.e., by 34.4 percent, more than 70 percent of the GAR's net population increase consisted of migration from the other nine regions of the country. Moreover, the GAR accounted for 68 percent of Greece's total urban population increase during the above period, with Salonika, the second largest city, accounting for only 12 percent.

It is important at this point to examine regional population changes in some depth since they provide an adequate picture of the pull that the GAR exercises on the rest of the country. Interregional migration and foreign emigration are of a scale that often absorb natural population growth rates. Three types of migration will be examined presently.[6]

1. Internal, interregional migration,
2. Foreign emigration and immigration, and
3. Urbanization, or migration from the rural to urban sectors.

Table 14 summarizes both domestic (internal) and foreign migration for the period 1956-1961. This is the only period for which reliable statistical data are available.

It is evident from Table 14 that only the Greater Athens Region gained population as a result of migration; essentially, migration seems to have been moving in one direction only. The Aegean Islands suffered the most severe loss in relation to their initial population, followed by the Ionian Islands, the Peloponnesos, and then Thrace, Epirus and Crete with rather moderate losses.

It is noteworthy that, for the same period, interregional migration exceeded foreign migration, except in Macedonia and Thrace.

During the period of 1960-1965, Athens continued to absorb migrants from the other regions on an even larger scale. GAR's net gain is, however, less than that of 1956-1961 since more persons emigrated from it abroad.

Table 15 summarizes the relevant data for this period. In addition, natural population increases have been estimated and compared to net migration losses. Several regions are found to have experienced a negative population growth. The Ionian Islands lead among these with

TABLE 14

NET MIGRATION WITHIN GREECE, AND NET MIGRATION WITH FOREIGN COUNTRIES BY REGION, JAN., 1956 - MARCH, 1961, AND AS A PROPORTION OF REGIONAL POPULATION AT JAN. 1, 1956

Region	Population as of Jan. 1, 1956	Net Domestic Migration			Net Foreign Migration			Total Net Migration		
		Number	Percentage of Population	Percentage Per Annum	Number	Percentage of Population	Percentage Per Annum	Number	Percentage of Population	Percentage Per Annum
Greater Athens	1,602,791	+177,600	+11.08	+2.12	-7,924	-0.49	-0.10	+169,676	+10.59	+2.03
Rest of Central Greece	937,448	-20,200	-2.15	-0.43	-8,531	-0.91	-0.18	-28,731	-3.06	-0.62
Peloponnesos	1,118,776	-59,100	-5.28	-1.08	-31,009	-2.77	-0.56	-90,109	-8.05	-1.66
Ionian Islands	221,650	-14,000	-6.32	-1.30	-6,274	-2.83	-0.57	-28,274	-9.15	-1.90
Epirus	342,614	-19,800	-5.78	-1.18	-821	-0.24	-0.06	-20,621	-6.02	-1.23
Thessaly	661,017	-14,300	-2.16	-0.43	-5,502	-0.83	-0.17	-19,802	-2.99	-0.58
Macedonia	1,793,874	-4,900	-0.27	-0.05	-19,889	-1.11	-0.22	-24,789	-1.38	-0.28
Thrace	349,102	-600	-0.17	-0.03	-20,845	-5.97	-1.22	-21,445	-6.14	-1.26
Aegean Islands	509,269	-27,000	-5.30	-1.07	-26,209	-5.15	-1.05	-53,209	-10.45	-2.18
Crete	473,053	-17,700	-3.74	-0.76	-2,111	-0.45	-0.09	-19,811	-4.19	-0.85
Total Greece	8,009,594	0	. .	. .	-129,115	-1.61	-0.32	-129,115	-1.61	-0.23

Source: Ministry of Coordination, "Regional Trends and Targets in Supply of and Demand for Manpower," Athens, 1968.

TABLE 15

NET MIGRATION, FOREIGN AND DOMESTIC, BY REGION, ESTIMATED FOR 1960-65, AS A PROPORTION OF THE JUNE 6, 1960 REGIONAL POPULATIONS AS COMPARED TO NATURAL POPULATION INCREASE FOR THE SAME PERIOD

Region	Population in 1960	Domestic Migration (In Percentage)	Foreign Migration (In Percentage)	Total Net Migration (In Percentage)	Total Net Migration Per Annum	Natural Population Increase Per Annum	Difference Between Total Net Migration and Natural Population Increase	Growth
Greater Athens Region	1,843,900	+9.96	-1.36	+8.62	+1.72	+0.79	+0.93	positive
Rest of Central Greece	965,800	-2.20	-1.18	-3.34	-0.66	+1.05	+0.39	positive
Peloponnesos	1,091,000	-5.60	-3.55	-9.16	-1.83	+0.92	-0.91	negative
Ionian Islands	212,000	-6.85	-4.02	-10.86	-2.17	+0.65	-1.52	negative
Epirus	350,000	-5.80	-2.40	-8.25	-1.65	+1.35	-0.30	negative
Thessaly	692,000	-2.10	-1.46	-3.60	-0.72	+1.20	+0.48	positive
Macedonia	1,881,500	-0.27	-2.55	-2.82	-0.56	+1.15	+0.59	positive
Thrace	354,000	-0.17	-10.01	-10.18	-2.01	+1.55	-0.46	negative
Aegean Islands	475,000	-5.40	-6.11	-12.00	-2.40	+0.64	-1.16	negative
Crete	480,000	-3.80	-1.12	-4.94	-0.99	+0.91	-0.08	negative
Total Greece	8,347,500	0	-2.64	-2.64	-0.53	+1.01	+0.48	positive

Source: Ministry of Coordination, Central Service for Regional Development, "Regional Trends and Targets in Supply of and Demand for Manpower," Athens, 1968. (Typewritten.)

an annual loss of 1.52 percent followed by the Aegean Islands, Peloponnesos, Thrace, Epirus and Crete. Total population growth was a meager 0.48 per annum for the same period.

It is interesting to note that a) Thrace, the farthest region from Athens, exhibited the least amount of domestic migration, suggesting perhaps that distance may have been a factor in affecting migration; b) Macedonia, the second most urbanized region after Athens, also exhibited the least amount of domestic migration, relatively to its population size, suggesting that the city of Salonika acts as a major collector of Macedonian migrants: For example, of the 222,900 persons who migrated between January 1956 and March 1961, the GAR took 79.7 percent, 14 percent drifted to Salonika, and only 0.6 percent were collected by Patras, the third largest city; c) with respect to the relationship between urbanization[7] and regional migration, net domestic migration since 1951 equalled about the amount by which urban population increased at the expense of the rural sector. This suggests that a small amount of intra-regional migration, of the village-to-town type, is taking place in Greece. The direction is mostly village to Athens.

The attraction of the Greater Athens Region is exerted not only on the people of the rural areas who may be unemployed or underemployed, but also on the entrepreneurs and intellectuals, trade and capital from almost

all the other regions. The process of "siphoning off" of people, goods and capital from the various regions to Athens, has been going on for several decades, resulting in the over-concentration of all sorts of activities, higher levels of development and standards of living in Athens and, quite naturally, socio-economic stagnation in most of the regions.

The amount of industrial concentration is also another striking indication of the existing and widening disparity in the distribution of productive activities between Athens and the rest of the country. In 1958, for example, Athens accounted for about 45.7 percent of the total number of industrial firms, 53.2 percent of total industrial employment, and 55.7 percent of total industrial output. In 1963, the same figures were 50.4 percent, 54.8 percent, and 51.0 percent. Moreover, it is important to note that of the 14 percent national increase in manufacturing employment between 1958 and 1963, Athens absorbed 85 percent with six regions showing absolute losses and eight regions showing relative losses (i.e., grew at a slower rate).

The disproportionate share by Athens is very extensive in all aspects of the Greek economy. In 1962, Athens accounted for roughly 41 percent of the national domestic product while its share in other activities was the following:[10]

Public Utilities	73.9%
Transport-Communications . .	47.2
Trade	58.2
Credit-Insurance, etc. . . .	77.3

Public Administration . . .	51.0%
Health	52.9
Other Services	51.0[11]

The regional distribution of per capita incomes and per capita gross product, the most important indices of regional inequality, also indicates the preponderance of the Athens region over the rest of the country. Table 16 shows regional incomes for the years 1954 and 1962.

It is evident from Table 16 that the Athens region has maintained its vast superiority over the other regions, and has even increased it. In spite of the decentralization efforts that took place primarily in the period 1958-1963, the income distribution pattern does not show any indication that these efforts have had any bearing on it. The island regions and Epirus were, and still are, the most backward. It is also noteworthy that the regions which lost the highest numbers of population through migration, such as Peloponnesos, Crete, the Aegean and Ionian Islands, also had the lowest per capita income increases. This suggests that the simple transfer of population, without any vigorous structural changes in the regions, cannot be expected to reduce regional income disparities.[12]

The distribution of the regional gross product shows a similar degree of inequality (see Table 17). This index is probably more representative of the productive capacities of the regions since income differences are not adjusted for variations in the regional price structures. For example, a comparison of incomes between, say, Athens

TABLE 16

REGIONAL PER CAPITA INCOMES IN GREECE: 1954 AND 1962

Region	Per Capita Incomes (In U.S. Dollars) 1954[a]	1962[b]	Percentage of National Average for 1962	Percentage of Regional Growth 1954 - 1962
Greater Athens Region	333[d]	812	223	33[c]
Rest of Central Greece		273	74	
Macedonia	212	271	73	28
Peloponnesos	194	217	59	18
Thrace	144	236	64	62
Thessaly	184	234	63	27
Aegean Islands	179	216	59	21
Crete	168	217	59	28
Epirus	134	145	39	8
Ionian Islands	141	141	38	0
Total Greece	230	367	100	59

[a]St. Geronymakis, "I Perifereiaki Katanomi tou Ethnikou Eisodimatos" ("The Regional Distribution of the National Income"), Oikonomiki Poreia, No. 12 (Dec. 1961).

[b]Ministry of Coordination, Regional Development Service.

[c]It is fair to assume that the Greater Athens Region itself probably scored 100% increase.

[d]Unfortunately the information includes both of these two regions.

TABLE 17

PER CAPITA GROSS REGIONAL PRODUCT: 1962, 1965
(In U.S. Dollars)

Region	1962[a]	Greece = 100	1965[b]	Greece = 100
Greater Athens Region	627	153.6	902	152.6
Macedonia	371	92.6	514	86.9
Peloponnesos	355	80.6	525	88.9
Rest of Central Greece	307	76.6	578	97.7
Thessaly	297	74.1	431	73.0
Thrace	287	71.5	385	65.1
Aegean Islands	274	68.4	470	79.6
Crete	265	66.0	445	75.3
Ionian Islands	231	57.7	433	73.3
Epirus	227	56.9	364	61.7
Total Greece	400	100.0	590	100.0

[a]Center of Planning and Economic Research, Draft of the Five Year Economic Development Plan for Greece: 1966-1970, (Athens: 1965), p. 146.

[b]Ministry of Coordination, Central Committee of Economic Development Planning, Economic Development Plan of Greece: 1968-1972 (in Greek) (Athens: 1968), p. 42.

and Thessaly, should yield somewhat smaller differences than shown in Table 16 if the higher prices prevailing in Athens could be allowed to enter the comparison. Unfortunately, no such data are available.

Table 17 characteristically shows that all of the Greek regions except Athens are below the national average in per capita gross regional product, and as with per capita incomes, the island regions, Crete and Epirus exhibit the lowest percentages. However, between 1962 and 1965, a period during which the Greek economy experienced a high growth rate, all regions gained in absolute terms but their relative positions towards Athens remained largely unchanged. If this information were available for a larger period of time, and preferably for ten years, regional trends would have been more identifiable.

At this point it is important to examine the economic structure of all regions with regard to a) their employment structure, b) the composition of their gross product, and c) their reliance on agriculture whose low productivity is primarily responsible for both low incomes and low per capita gross products. Also, some measure of the regional infrastructural distribution will be given showing the distribution of health and educational facilities and power.

Table 18 shows the regional employment structure by economic sector, for 1961. It is evident that, outside the GAR, agriculture occupies the largest part of all the

TABLE 18

EMPLOYMENT COMPOSITION BY ECONOMIC SECTOR AND REGION, 1961
(In Percentage of Regional Total)

Region	Total	Agriculture	Manufacturing	Services
Greater Athens Region	100	5.6	40.8	53.6
Rest of Central Greece	100	71.1	13.4	15.5
Peloponnesos	100	70.0	12.7	17.3
Ionian Islands	100	70.0	11.9	18.1
Epirus	100	71.9	12.9	15.2
Thessaly	100	67.8	15.5	16.7
Macedonia	100	66.3	16.7	17.0
Thrace	100	80.8	8.7	10.5
Aegean Islands	100	55.7	19.1	25.2
Crete	100	72.0	11.6	16.4
Total Greece	100	55.8	19.8	24.4

Source: Ministry of Coordination, Center of Planning and Economic Research, Regional Agricultural Development (in Greek) (Athens: 1967), p. 38.

regions' labor force so that the contribution of the manufacturing and services sectors is relatively small. This is consistent with the absence of any massive resource concentration in Greece that would allow some regions to specialize in non-agricultural activities. Given this, the excessive concentration of industrial and other activities in the Athens region is easily explained in terms of a) the size of the Athens market, both for consumer goods and productive inputs, notably skilled labor; b) the over-concentration of administrative services; c) the presence of social amenities compounded by the amount of the urban infrastructure;[13] d) the external economies resulting from the above factors, for the individual firms in the Athens region; and e) the high tariff protection and lack of sufficient competition, which permit the survival in this area (Athens) of uneconomically located industries.

Table 19 shows the allocation of gross product by region and economic sector. It also indicates agriculture's large share in the regional economies. This necessitates a closer look at the Greek agriculture.

Table 20 summarizes information available about regional agricultural activity. Although the Rest of Central Greece Region, that includes the GAR, has the second lowest, after Crete, amount of available land for agriculture, it has the highest productivity index and value added per agricultural worker. The comparative inefficiency of this activity in the Ionian Islands, Epirus,

TABLE 19

DISTRIBUTION AND ORIGIN OF GROSS PRODUCT BY ECONOMIC SECTOR AND REGION, 1962
(In Percentage)

Region	Total	Agriculture	Manufacturing	Services
Greater Athens Region	100	3.0	36.6	60.4
Rest of Central Greece	100	49.0	19.7	31.1
Peloponnesos	100	49.1	20.0	30.9
Ionian Islands	100	32.0	21.6	46.4
Epirus	100	38.9	22.0	39.1
Thessaly	100	48.5	19.1	32.4
Macedonia	100	42.7	23.1	34.2
Thrace	100	59.6	12.8	27.6
Aegean Islands	100	31.4	23.1	45.5
Crete	100	41.4	18.4	40.2
Total Greece	100	28.2	27.1	44.7

Source: Computed on the basis of data from the Ministry of Coordination.

TABLE 20

COMPARATIVE AGRICULTURAL DATA FOR THE GREEK REGIONS
(In Percentage)

Region[a]	Distribution of Agricultural Land	Agricultural Land Under Irrigation 1963	Agricultural Land in Flat Land	Stremmata[b] per Agricultural Activity, 1961	Stremmata[b] per Agricultural Worker, 1961	Lots per Agricultural Activity, 1961	Value Added per Agricultural Worker, 1965	Economically Active Population Engaged in Agriculture, 1961	Productivity in All Sectors of The Economy, 1962 Greece = 100	Distribution of Gross Agricult. Product, 1963/64	Productivity Index in Agriculture, 1963/64	Av. Agric. Labor Surplus, 1963
	1	2	3	4	5	6	7	8	9	10	11	12
Rest of Central Greece	16.4	19.1	42.4	33.7	21.7	6.9	113	71.1	72.9	17.4	118	5.5
Peloponnesos	19.1	13.8	43.3	34.5	20.9	6.7	112	70.0	88.3	18.4	113	10.0
Ionian Islands	2.1	4.2	56.3	18.9	11.8	6.1	87	70.0	53.8	2.7	84	46.4
Epirus	3.5	25.0	29.5	20.4	12.2	5.5	85	71.9	57.2	4.2	81	15.2
Thessaly	12.7	13.0	68.6	42.7	23.9	6.9	103	67.8	75.4	10.7	105	10.0
Macedonia	25.3	17.5	67.6	32.0	16.4	6.7	100	66.3	86.2	28.5	98	6.7
Thrace	6.7	2.3	81.8	36.9	16.9	7.6	73	80.8	58.9	5.5	72	20.6
Aegean Islands	5.6	9.3	47.9	21.9	20.0	7.3	102	55.7	73.2	5.2	104	13.9
Crete	8.6	8.8	37.3	29.7	19.5	10.5	89	71.8	55.9	7.4	91	18.7
(GAR)	. .	. .	. .	. .	. .	. .	. .	. .	190.2	. .	. .	. .
Total Greece	100.0	14.3	54.7	31.8	18.8	7.1	100	55.8	100.0	100.0	100	11.9

[a]GAR is included in the Rest of Central Greece Region except in column 9.

[b]One stremma equals 0.1 of a hectare.

Source: Ministry of Coordination, Center of Planning and Economic Research, Regional Agricultural Development (Athens: 1967), pp. 103, 154.

and Thrace is also evident.[14] Moreover, it is interesting to note the substantial numbers of surplus agricultural labor in all island regions, plus Epirus and Thrace. This implies large migratory movements and a high percentage of underemployment. Differences in total productivity are even more extreme. Again no region approaches the national average, except for GAR which has nearly twice the average. Those regions with the lowest total productivity index are characteristically the same ones with the lowest agricultural productivity index.

Assuming that productivities provide a fair indication of per capita incomes, it should be noted that differences between regions are much greater in the other economic sectors than in agriculture, suggesting that perhaps agriculture plays a stabilizing role in the country's total economic activity.

The distribution of regional infrastructural capital in Greece is equallylopsided. Although it is extremely difficult to inventory social capital, an effort has been made to categorize parts of it, not including, however, roads, communication facilities, transportation and administrative facilities, buildings, and others that are usually considered important elements of social capital. Table 21 provides a crude, but probably indicative, picture of how selected infrastructure is distributed among regions. Health facilities, including physicians, are overwhelmingly distributed in favor of the GAR, with no other region

TABLE 21

SOME SELECTED INDICES OF THE REGIONAL DISTRIBUTION OF INFRASTRUCTURE IN GREECE, 1961

Region	Health (Per 10,000 Pop.)			Primary Educ. Facil.			Electricity	
	Hospitals	Beds	Physicians	Average Number of Teachers per School	Average Number of Classrooms per School	Primary School Students per 10,000 Population	Installed Electric Energy Capacity per 10,000 Pop.[a] (In kilowats)	Consumption of Electricity for Domestic Purposes (In kilowats)
Greater Athens Region	1.45	138.7	29.1	5.3	3.8	789	850	2,900
Rest of Central Greece	1.07	14.6	4.9	2.0	1.9	1,164	9,500	216
Thessaly	1.6	27.9	6.8	2.4	2.3	1,230	8,000	254
Peloponnesos	1.4	30.0	1.3	1.8	1.8	1,236	7,100	280
Macedonia	1.0	46.7	9.2	2.7	2.7	1,131	4,200	388
Epirus	0.8	25.6	5.9	1.6	1.6	1,473	2,300	155
Thrace	1.1	18.2	4.0	2.4	2.4	1,221	1,200	93
Ionian Islands	0.9	51.6	6.7	1.7	1.7	1,184	2,600	219
Aegean Islands	1.2	51.8	9.5	2.7	2.7	1,183	4,000	269
Crete	1.7	46.1	7.9	1.8	1.8	1,168	3,100	232
Total Greece	1.29	58.1	12.4	2.3	. .	1,106	7,530	848

Source: Computations based on the Statistical Yearbooks of Greece of 1961 through 1967.

even approaching the national average.[15] Educational facilities exhibit a similar pattern. Although four regions surpass the national average of primary school teachers,[16] the GAR has an extremely high share.

Considering that the GAR has, in addition, larger schools and the lowest pupil population index of the country, it is evident that its educational facilities are less subject to overcrowding conditions and misutilization. Interestingly enough, the GAR had about 15 percent of the country's total pupil population, in 1961, while for the same year it contained about 33 percent of the country's total high school students. An entirely plausible explanation is the fact that migrants receive their primary education in their villages before going to Athens so that the "domestic" demand for primary education is relatively small. More than half of the total private elementary schools and private hospital beds are located in Athens. More specifically, in 1961, 51 percent of all private elementary schools were located in Athens, comprising 46 percent of its total. About 55 percent of all private hospital beds were in Athens, comprising 39 percent of its total beds. By comparison, only 8 percent of all Greek elementary schools are private and about 38 percent of the total number of beds are also private. This level of private activity makes it possible for the State to allocate large segments of its aducational and health resources to the less privileged regions where private investment is

likely to go.

Vocational training facilities are also heavily concentrated in Athens. In 1961, about 50 percent of all vocational schools and 53 percent of all vocational students were located in Athens. The installment and consumption of electric power are two additional indices of considerable importance. In 1961, the GAR consumed 65 percent of the country's total power and 62 percent of its total industrial power. Domestic consumption was, at the same time, 2,900 kilowats per 10,000 population, or 3.7 times the national average with, again, no other region approaching the national average.

A final comparison is the regional distribution of public works expenditures as a percentage of the government's total expenditure in a given region. Table 22 summarizes the relevant information.

The relative magnitude of State funds from total public works expenditures is higher in all regions except Athens where a form of local government exists that is allowed to finance its public works programs from purely internal sources. Concurrently, local sources of funds and transfers from the State to the nomoi are rather insignificant reflecting the regions' lack of local administrative structures that would at least serve the function of pointing out local or regional needs. In this sense, the central government, via its own bureaucratic apparatus, performs the dual function of planning and implementing all

TABLE 22

REGIONAL DISTRIBUTION OF PUBLIC WORKS EXPENDITURES BY SOURCE OF FUNDS AND IN RELATION TO TOTAL GOVERNMENT EXPENDITURE, 1961
(In Millions of U.S. Dollars)

Region	Public Works Expenditures[a]				Total Public Works Expenditures as a Percentage of Total Expenditure	Government Receipts from Regions[b]	Per Capita Receipts	Government Expenditures in Regions[b]	Per Capita Expenditures
	State Funds	Local Funds	Transfers from State to Nomoi	Total Amount					
Greater Athens Region	0.656	0.803	0.145	1.604	40.55	414.75	230	287.50	148
Rest of Central Greece	7.753	0.466	1.946	10.165	55.00	13.62	14	18.50	19
Peloponnesos	6.748	0.620	1.663	9.031	30.00	30.60	27	29.72	27
Ionian Islands	1.659	0.149	0.337	2.145	36.30	2.56	13	5.90	28
Epirus	7.285	0.037	0.458	7.780	69.00	2.87	8	11.19	32
Thessaly	3.004	0.351	1.065	4.420	22.50	18.81	27	18.72	27
Macedonia	23.965	1.235	2.840	28.040	44.50	64.48	34	63.07	34
Thrace	4.379	0.056	0.940	5.375	96.00	3.88	11	5.83	17
Aegean Islands	3.937	0.058	0.555	4.550	38.00	9.20	19	12.04	25
Crete	3.369	0.321	0.560	4.250	29.00	8.66	18	14.53	30
Total Greece	62.549	4.129	10.439	77.117	16.00	569.23	68	467.00	56

[a]These amounts exclude large State projects as well as all projects that benefit GAR since they are usually outside the nomos of Attica.

[b]Government receipts are about 10-15% higher since there are revenues of a non-regional nature. Expenditures are not actually less than revenues since there are expenditures also of a non-regional nature.

Source: Calculations based on Statistical Yearbook of Greece, 1962 and 1965.

regional projects. The more recent experiment of transferring funds to the nomoi (geographic departments) is noteworthy in expressing a desire on the part of the central government to expand the largely ceremonial roles of the local authorities.

Another interesting finding is the size of the public works expenditures portion from the total government regional allocations. While in the GAR it is less than 1 percent, in Thrace it is an astonishing 96 percent, and about 69 percent in Epirus. Moreover, with the exceptions of Peloponnesos, Thessaly, and Macedonia, per capita expenditures are higher than per capita revenues. Almost half of the revenues collected from Athens is allocated outside of it which constitutes a massive effort of transferring resources from Athens into the rest of the country.

It is very difficult to conclude on the basis of the information presented whether the Greek regional economic structure warrants either a policy of equalization or integration. Income inequalities and other indices of inequalities among regions are not sufficient in themselves to produce a satisfactory answer to this question. The typical objective of regional economic policy of equalizing incomes, or even the distribution of economic activity in space, can be attained by either redistributing existing levels of activity or encouraging new activity in the disadvantaged regions. The former is possible by directing resources from Athens to the rest of the country, which

would imply that resources are being misused in Athens, while the latter is possible by shifting the emphasis on the development of the backward regions, which would have to imply that the Athens agglomeration is not necessarily bad.

The real issue is whether there existed investment opportunities outside Athens for the 162.5 million that the government spent between 1959 and 1966 (the total amount for 1954-1967 is not known) for decentralization subsidies and what effect this large allocation would have in narrowing interregional economic differences. More important is perhaps the question of what these subsidies have accomplished in terms of decentralization as compared to what they could accomplish if used for general development.

There are two especially disturbing phenomena that seem to pre-empt the usefulness of either type of regional policy. First, equalization has limited chances of overall success since, and in the absence of any appreciable resource concentration, the locational distribution of Greek manufacturing is market oriented.[17] The services sector is distributed along with population centers and it is meaningless to even consider its decentralization. This being the case, the Athens region constitutes the only rational setting of industrial location if industries are to be consistent with the operating economic forces. To this extent, "the concentration of manufacturing

firms in the greater Athens area is nothing but the natural outcome of past conditions and expectations which have led the individual firms to search for the (optimum) location of their plants."[18] Supporting evidence indicates that a) Athens alone accounted, in 1958, for 61.4 percent of the total expenditures for industrial products by urban households, b) the heavy dependence of Greek industry on imported raw materials has rendered the Athens location, and subsequent access to the port facilities of Piraeus, most attractive, c) the low cost of energy and fuel as well as the levels of localization and urbanization economies found in Athens are far greater advantages than the repelling (locational) effects of such diseconomies (as the higher cost of living, higher money, wages, etc.) which stem from excessive urbanization, and d) managerial and entrepreneurial immobility are additional factors in making Athens the "only" business environment of the country.[19]

All these factors strengthen the notion that an equalization policy must inevitably come to grips with the reality of effectively reducing Athens' locational appeal. The channeling of private economic activity from Athens to the other regions will require enormous resources and is tantamount to the identification of the proper means to render industry less efficient, with the State bearing the necessary cost.

Second, the policy objective of integration is equally dubious since the State cannot expect to influence

the private sector to cooperate in a regional development effort. The regional skill-mix, regional capital market, and the entire socio-economic structure of the regions are such that they offer little or no opportunities for private investment. The State has the option, of course, of developing the regional infrastructural capital and possibly control out-migration with an effective public works program.

In short, the decision to decentralize industry is rather unfortunate and not justified by the available information.

The tentative conclusion to be made at this point is that the information available about the Greek regional economic structure cannot justify the decentralization policy option adopted by the State. Moreover, there is no evidence that the Athens region has attained a size that generates more social costs than social benefits. If this condition is necessary for the consideration of decentralization,[20] it does not seem to be real at this point in time. The other alternative of "orthodox" regional development may also encounter difficulties given the rigidities of the Greek economy.

A closer look at the issue of whether Athens' size has exceeded its critical mass is useful at this point while a full description of the specific decentralization policies should reveal how the Greek Government has conceived and defined the GAR's size.

The Policy Aspect of Greek Regional Development

Greek regional policy has been traditionally formulated on the premise that the Greater Athens Region is too big, relative to the rest of the country, and therefore its primary objective has been to design inducements for diverting some of the GAR's growth into the provinces. This attitude has retarded government action in "orthodox" regional development. Recently some efforts are being made to both re-examine the performance of the equalization policy and suggest some new directions.[21]

The statistical evidence supporting the argument that the GAR is large is ample, however, there is no indication that its size in generating excessive social costs. On the contrary, the structure of public investments, for the period of 1954-1965, suggests that although total investments for all regions, per capita allocations for infrastructural expenditures (a rough measure of social costs) with respect to the total regional budget, are among the lowest. Table 23 shows the percentage distribution of regional investments, by category, as a percentage of the total state allocation for a given category, and Table 24 shows the same as a percentage of each region's total investment budget. The GAR's allotment of the State's investment

TABLE 23

PERCENTAGE DISTRIBUTION[a] OF REGIONAL INVESTMENTS AS A PERCENTAGE OF TOTAL STATE INVESTMENT, BY CATEGORY, 1954-1965

Region	Total	Agric.	Mfg.	Public Utilities	Transp.	Tourism.	Educat.	Health and Welfare	Public Admin.	Housing	Misc.
Rest of Central Greece[b]	25.7	21.1	8.5	25.7	35.6	40.4	36.1	42.8	63.2	36.8	17.6
Peloponnesos	12.9	12.0	2.5	7.8	17.0	14.6	7.5	7.5	2.2	20.8	16.9
Ionian Islands	1.7	0.4	0.0	3.4	1.6	5.1	1.0	3.2	3.0	0.7	4.1
Epirus	6.0	6.8	0.2	3.0	7.6	6.0	1.9	2.5	3.8	5.0	8.1
Thessaly	9.8	6.1	17.1	3.6	12.8	5.8	2.8	10.2	4.9	3.3	7.2
Macedonia	31.2	40.1	70.8	28.5	14.6	12.4	44.1	24.7	16.9	22.6	20.0
Thrace	5.1	12.1	0.1	5.7	3.7	1.5	1.4	2.4	2.4	2.1	3.5
Aegean Islands	3.5	0.7	0.2	5.7	3.1	9.1	1.1	2.2	2.2	3.5	10.6
Crete	4.1	0.7	0.6	16.6	4.0	5.1	6.6	1.4	1.4	5.2	12.0
Total Greece	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Only 70 per cent of the total State Investment Budget can be regionally classified.

[b]This region includes the Greater Athens Region.

Source: Ministry of Coordination, "The Regional Distribution of Investments in the Past," (in Greek) (unpublished paper, Athens, 1968).

TABLE 24

PERCENTAGE DISTRIBUTION OF INVESTMENTS[a] AS A PERCENTAGE OF EACH REGION'S TOTAL INVESTMENT BUDGET, BY CATEGORY, 1954-1965

Region	Total	Agric.	Mfg.	Public Utilities	Transp.	Tourism.	Educat.	Health and Welfare	Public Admin.	Housing	Misc.
Rest of Central Greece[b]	100.0	21.7	4.7	0.6	41.7	7.7	3.3	2.7	3.3	3.0	11.3
Peloponnesos	100.0	24.4	2.8	0.4	39.5	5.6	1.3	0.9	0.2	3.4	21.5
Ionian Islands	100.0	5.0	. .	1.3	30.0	15.1	1.3	3.1	2.4	0.9	40.9
Epirus	100.0	30.1	0.5	0.3	38.1	5.0	0.7	0.7	0.8	1.7	22.1
Thessaly	100.0	16.5	24.9	0.2	39.6	2.9	0.7	1.7	0.7	0.7	12.1
Macedonia	100.0	33.9	32.1	0.6	14.1	2.0	3.3	1.3	0.7	1.5	10.5
Thrace	100.0	62.1	0.1	0.7	21.9	1.4	0.7	0.4	0.6	0.9	11.2
Aegean Islands	100.0	5.0	0.6	1.0	26.4	12.8	1.5	0.5	0.8	2.1	49.3
Crete	100.0	4.5	2.2	2.6	29.5	6.1	1.6	2.6	0.5	2.7	47.7
Total Greece	100.0	26.3	14.6	0.5	30.9	5.7	4.2	1.2	1.5	2.0	13.1

[a]The State investment budget for the 1954-65 period was about 1.33 billion dollars.

[b]This Region includes the Greater Athens Region.

Source: Ministry of Coordination, "The Regional Distribution of Investments in the Past," (in Greek) (unpublished paper, Athens, 1968).

budget, although combined with that of the RCG region, is the second largest and not much larger from those of Peloponnesos and the RCG region. The "non-productive" uses, such as health and welfare, public administration, housing and education, seem to be large only in relation to the total investments in these areas, but are essentially small with respect to this region's total budget. This is because the other regions' budgets are mostly absorbed by agricultural manufacturing and transport activities so that relatively little is left for social overhead. Therefore, the percentages of the GAR's budget devoted to infrastructure are not higher than those in the other regions and, if adjustments are made to take into account different population sizes, it may be clear that the GAR has roughly the third or fourth highest per capita investment for infrastructure purposes.

This suggests two possibilities: either the State is not responding to the GAR's infrastructural needs, or the GAR is not congested to the point where huge social costs are produced. The second possibility is more realistic which casts a few doubts as to the validity of the argument that Athens' size justifies decentralization.[22]

The Greek government's measures for the spatial dispersal of industry have been fully described in a series of legislative acts that began in 1952 and apparently ended in 1967.[23] The salient characteristics of this program are the following:

1. The industrial dispersal program starting in 1954 consisted entirely of a system of indirect subsidization in the form of tax credits, depreciation allowances, tariff reductions, and reductions that employers make to various social, pension, and workers funds.

2. The program did not specify where decentralization should be oriented to other than specify Athens as the area to be decentralized. Legislative Act No. 147/1967, however, introduced specific geographic criteria to be employed with respect to depreciation practices. While, for example, previous legislation specified that provincial industries could depreciate their capital equipment twice as fast as industries in the GAR, Act No. 147 withdrew this favorable depreciation treatment from a number of provincial industrial centers with no adequate explanation.[24]

3. The program did not specify which industries should be decentralized whereby tax benefits were granted indiscriminately to any firms willing to relocate. Since these benefits bear little or no relation to the cost structure of the firms concerned[25] the failure to differentiate among industries in awarding the benefits defeated the purpose of relocation.

4. Perhaps the most significant feature of the entire program was the definition of the term "provincial industry." Act 3213/1955 specified that a provincial industry is one located outside the nomos of Attica[26] (the very boundary of the GAR). As a result several firms

located at the GAR's fringe receiving the full benefits of the law without being "decentralized." Similar developments have occurred in Holland, France and Hungary, where weak "spatial" definitions of decentralization existed.

The tax credits of the decentralization program can be divided into two categories: those designed to reduce the cost of production, and those designed to improve profits. Both types are intended to operate in a given spatial context. The first type of tax credits seeks to lower production costs of industries to the point where a "provincial" location can be at least as attractive as a location within the GAR. The second type of tax incentives seeks to encourage the re-investment of the tax savings in an attempt to increase total investment outside the central location.

There are five specific tax inducements in the first category;[27] these are:

a) reduction in the sales tax,

b) complete tariff exoneration for capital goods,

c) exoneration from local taxation,

d) reductions in the contributions of employers to social security, which the State assumed to replenish, and

e) complete write-off of the existing flat rate of 6% tax on wages and salaries.

These tax inducements can be placed in following spatial context:

a) Sales Tax

Legislative Decree 2176/1952 provided for a 20% reduction in sales taxes to all industries located or willing to locate outside the nomos of Attica. The reduction increases to 30% for all industries moving an additional 30 miles. Finally, the reduction reaches a maximum of 40% for all island locations, that is, outside the Greek mainland.

b) Tariff Exoneration for Imported Capital Goods

Legislative Decrees 2176/1952, 3213/1955, and 3765/1957 provided a 50% tariff reduction to all firms willing to locate outside Attica as of August, 1952. Total tariff exoneration was offered to all industries in a 30-mile radius outside Attica's limits.

c) Exoneration from Local Taxation

Local taxes were completely abolished for all firms outside Attica for an indefinite period.

d) Contributions to Social Security

Legislative Decree 3213/1955 reduced contributions by 20% for all firms outside Attica.

e) The 6% Tax on Wages and Salaries

This was also abolished for all "provincial" industries.

In the second tax credit category there are three specific schemes; these are:

a) accelerated depreciation,

b) the development of tax-free cash reserves to meet future losses, and

c) tax reductions on net profits intended for re-investment.

The spatial context of these schemes is the following:

a) Accelerated Depreciation

Legislative Decrees 2176/1952, 3213/1952, and 4002/1959 provided that the depreciation of the capital equipment of "provincial" industries be twice as fast as that of industries located in Attica. Law 147/1967 exempted from this favorable treatment the industrial centers of Corinth (Peloponnesos), Thebes (Rest of Central Greece), Halkis (Euboia--part of RCG). Thessaloniki (Macedonia), and Lavrion (Attica). With the exception of the Thessaloniki industrial center, the other centers are still in an embryonic stage of development and not large enough to even be considered as "growth poles."

b) The Development of Tax-Free Reserves

This credit is applied to net profits, resulting after the first $2,000 and is better scaled in a spatial sense. For example, in 1949 all "provincial" industries received a 15% tax credit on their net profits. In 1952 the rate increased to 25% with all of Attica excluded from the benefits. In 1955, the rate increased further to 40% for all locations beyond a 30 to 40 mile radius from Attica.[28]

c) Tax Reduction on Net Profits Intended for Re-investment

This is the most generous and perhaps more controversial of the tax credits. Decree 3213/1955 provided that all provincial industries would receive a 40% reduction in the tax paid on their net profits if the tax benefit were used to purchase new capital equipment or improve old. For all island locations this percentage was increased to 80%, with another law passed in 1957. However, Decree 4002/1959 superseded previous legislature and established that all industries located inside Attica could also enjoy a 50% reduction in their net profit tax, provided that the tax benefit would be used for capitalization purposes. The rate increased to 60% for a 30-mile radius from Attica, and to 90% for all island locations. Decree 4002 was in clear contradiction to the decentralization philosophy for it wiped out the tax benefits previously limited to provincial industries. The net benefit for locating in the 30-mile radius was only 10%, down from 40%, and that for all island locations only 40 percent, down from 80%.

With the passage of Law 147/1967, that re-adjusted depreciation practices, the entire decentralization program assumed a highly regressive form that rendered a "provincial" location even less attractive. The modification of the decentralization program cannot be associated with a reversal of policy objectives since a quick succession of 5-year plans, starting in 1960, maintained decentralization as the framework of the State's regional policy.

In retrospect, the main weakness of the decentralization program appears to be its failure to place the tax credits on a spatially graduated basis. In most cases, the full advantages of the tax credits were available in the fringe of the nomos of Attica and in some cases at a distance of 10 to 20 miles from it. This means that "provincial" location could theoretically be placed 20 to 25 miles from the central city of Athens and accordingly many firms were "decentralized" in this fashion. It is inevitable that,with the constant expansion of the GAR's size and its possible spilling into the adjacent nomos of Boiotia, a substantial portion of the occurred decentralization will be absorbed back into the GAR.[29]

Of greater importance is the effect of the program on changes in "provincial investment," considering the program's weak geographic orientation. This relationship is very difficult to be measured because total private investment levels, in those industries directly related to the tax incentives, show both a high degree of instability and a long-run tendency to decrease.

It has been suggested that "the development of private investments in industry in the last fifteen years does not indicate any positive response to the tax incentives."[30] A satisfactory way to measure the program's overall effectiveness in this area, is to identify the relationship between investment induced by the tax credits and autonomous investment. This can be formalized as:

$$\frac{\Delta \text{Government Tax Losses}}{\Delta \text{ Total Investment}} \leq \frac{\text{Induced Investment}}{\text{Autonomous Investment}}$$

The program's effectiveness is maximized if for every positive change in total investment the value of the right side of the above equation is greater than that of the left side. An important qualification of the above equation is that since the program should be designed in such a way as to assure that a given loss in government tax revenue brings forth a positive change in total investment, the left side of the equation must be less than unity at all times reflecting the fact that total investment is a composite of induced and autonomous investment. Conversely, in order to satisfy the condition that the cost of the program is at least equal to the benefits emanating from it, induced investment should be at least equal to autonomous investment, requiring the right side of the equation to equal unity at the most. Therefore, the values that the right side of the equation can assume range from 0 to 1.

Some estimates made by the Center of Planning and Economic Research indicate that although total loss of government revenue was between 0.3 and 0.4 of total investments, the relationship of induced to autonomous investment was at least 0.6.[31] Hence, the difference between the two sides of the above equation was estimated to be at a maximum.[32] However, the alleged success of the program in

stimulating investment does not in any way imply that the program met its principal objectives. The objectives of a) the decentralization of Athens, and b) the national distribution of investments in space [33] were not fulfilled. The reasons of failing to decongest Athens are intrinsic to both programmatic inadequacies and the nature of the Greek regional structure. However, the failure to disperse investments in the national space is directly the result of the program's poor design.

For example, it will be recalled that Legislative Decree 4002/1959 granted a 50% reduction on profit taxes to firms located inside Attica, thus, an unspecified but substantial portion of "induced" investment, reported to be 0.6 of autonomous investment, was definitionally induced but it was highly centralized and perhaps not eligible to be computed in the efficiency calculations undertaken by the Center. Moreover, whatever the amount of the definitionally decentralized investment, it cannot be said that it took place more than 35-40 miles from the central city.

Considering that the cost of the programs for the years 1959-1966, in terms of revenue losses, was 162.5 million dollars,[34] it may have been an exorbitant price to pay to channel resources in an activity that is characterized by low returns to investment. More importantly, these funds could have had a greater impact on Greek regional development had they been invested directly by the State

into projects of a broader regional significance.[35]

In conclusion, the program could have been successful in a geographic sense had it produced savings in the government investment budget in the form of reduced social costs. This is probably a better criterion in formulating policy decisions with respect to decentralization, for all cases where subsidy costs are less than the reciprocal savings in the budget. In the absence of evidence that an urban agglomeration is generating social costs, its decentralization cannot serve economic objectives. Essentially, the Greek decentralization program should be judged on the dubious basis of creating a dollar of investment outside Athens' city limits for every dollar lost by the government.

The Greek Industrial Location Pattern: 1958-1963

This section will deal primarily with a general statistical description and measurement of the Greek industrial location pattern, with the purpose of identifying any locational shifts that may have occurred during the period of 1958-1963.[36] This analysis will provide some useful information about the degree of decentralization that has taken place in the Greek economy although it would be purely speculative to attribute it to any specific decentralization measures by the government.[37]

Some standard, but not too often used, techniques have been employed for the measurement of the country's

geographical distribution of industrial activity. These are the coefficients of localization, the location quotient, and the specialization coefficients.[38]

Greece is divided into ten geographic regions (see Figure 7) whose individual uniqueness is hard to establish without Athens as a point of reference. With the aid of two structural indices, a coefficient of urbanization and a coefficient of industrialization, some useful comparisons can be made (see Table 25). It will be readily noted that all regions except the GAR, and possibly Macedonia, are very similar. Both coefficients have low values and all nine regions are less than unity for both indices.[39] This implies that Greece consists essentially of two regions: the Greater Athens Region and the Rest of Greece.[40]

The GAR itself is an agglomeration of some fifty municipalities (demoi) (see Figure 8), which occupies the greater part of the nomos of Attika.[41] This region is totally urbanized and its rapid population growth makes it the only region whose boundaries are not fixed.

It will be useful at this point to regress the coefficients of industrialization on a number of structural variables in order to determine which variable, or a combination of variables, came closer to explaining the variations in the level of regional industrialization. Table 26 lists all the information used in this analysis. Two regressions were attempted: one with all ten regions, and one without Athens, since the GAR was suspected to

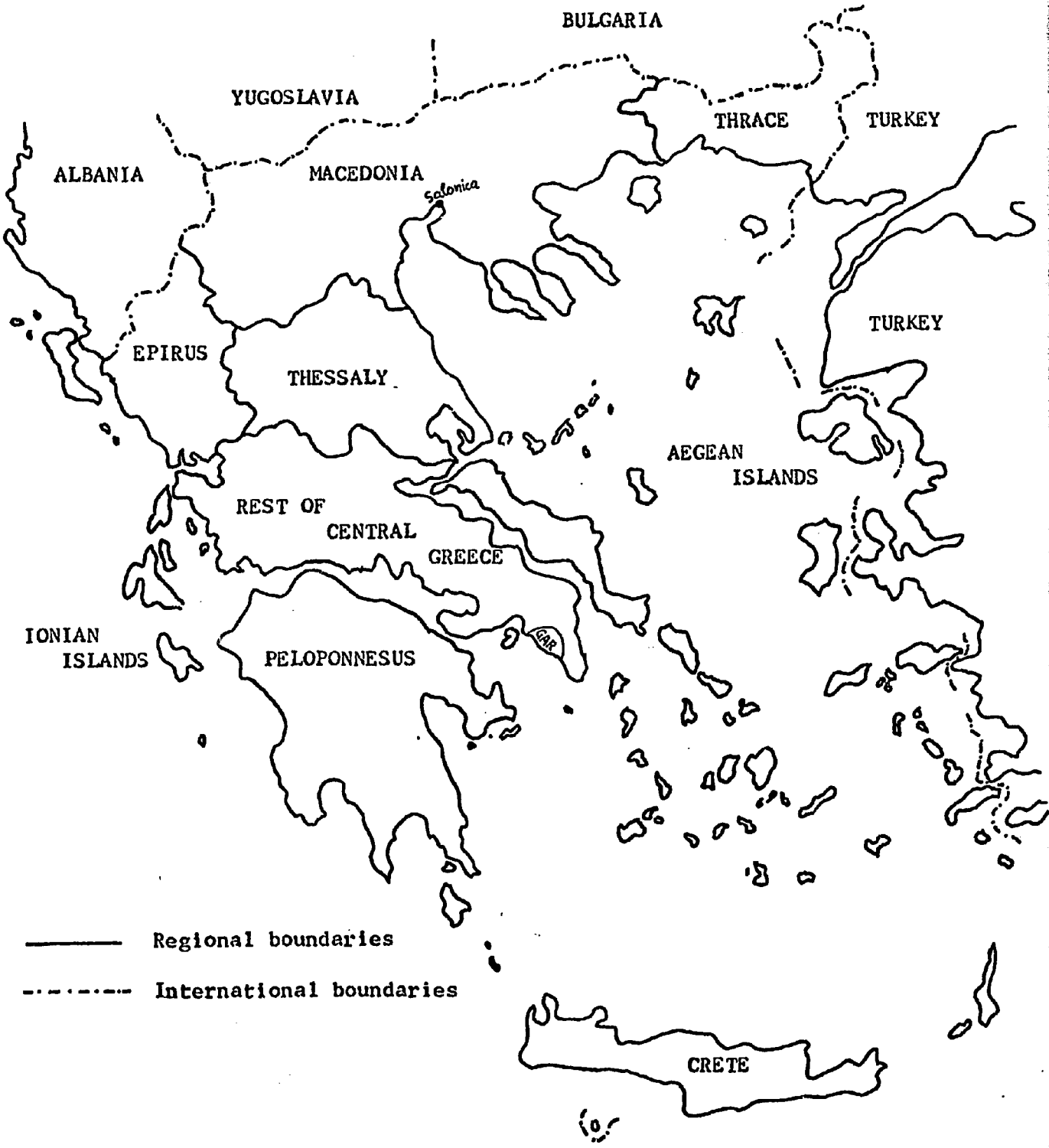


Fig. 7.--Map of Greece

TABLE 25

URBANIZATION[a] AND INDUSTRIALIZATION[b] COEFFICIENTS FOR GREEK REGIONS

Region	Urbanization Coefficients[c]	Industrialization Coefficients[d]
Greater Athens Region	2.457	2.208
Macedonia	0.839	0.819
Thessaly	0.621	0.626
Crete	0.621	0.635
Thrace	0.614	0.410
Pelopponesos	0.559	0.724
Aegean Islands	0.554	0.692
Rest of Central Greece	0.477	0.675
Epirus	0.431	0.351
Ionian Islands	0.325	0.544

[a] 1961.

[b] 1963.

[c] $$\text{Urbanization Coefficient} = \frac{\frac{\text{Region A's urban population}}{\text{Region A's total population}}}{\frac{\text{The Nation's urban population}}{\text{The Nation's total population}}}$$

[d] $$\text{Industrialization Coefficient} = \frac{\frac{\text{Region A's industrial employment}}{\text{Region A's total employment}}}{\frac{\text{The Nation's industrial employment}}{\text{The Nation's total employment}}}$$

Source: Computations based on the 1961 Population Census and the 1963 Annual Industrial Survey.

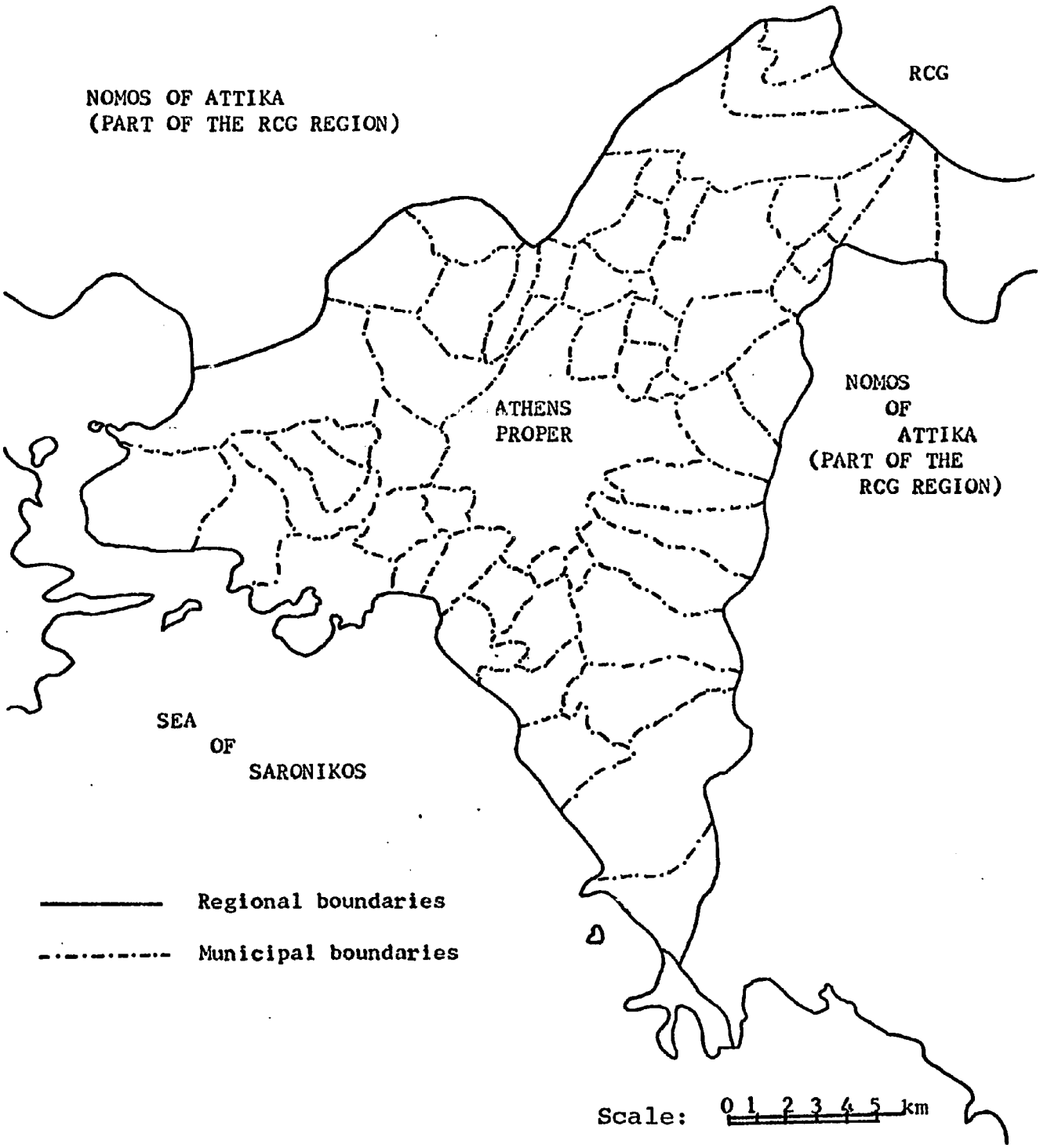


Fig. 8.--Map of Greater Athens Region

TABLE 26

DATA FOR A REGRESSION OF INDUSTRIALIZATION COEFFICIENTS OF THE GREEK REGIONS WITH SELECTED VARIABLES, 1961

Region	Population	Industrial Employment	Coefficient of Industrialization	Urbanization Coefficient	Per Capita Income (U.S. Dollars)	Per Capita Regional Gross Product	Permanent Emigration	Interregional Migration to Athens	Incidence of Illiteracy Among Persons of 10 years + (In Percentage)
	X_1	X_2	Y_c	X_3	X_4	X_5	X_6	X_7	X_8
Greater Athens	1,852,709	225,870	2.208	2.314	812	627	13,088	+54,550	9.8
Rest of Cent. Greece	970,949	37,711	0.675	0.477	273	307	2,343	-10,327	21.9
Thessaly	689,927	24,843	0.626	0.621	234	297	3,754	-3,864	21.4
Peloponnesos	1,096,390	45,675	0.724	0.559	217	355	8,306	-16,540	19.5
Macedonia	1,896,112	89,377	0.819	0.839	271	371	31,332	-4,364	16.9
Epirus	352,604	7,110	0.351	0.431	145	227	6,122	-3,819	22.4
Thrace	356,555	8,402	0.410	0.614	236	287	3,326	-486	29.6
Ionian Islands	212,573	6,655	0.544	0.325	141	231	2,209	-3,855	24.9
Aegean Islands	477,476	19,013	0.692	0.554	216	274	5,140	-7,800	19.0
Crete	483,258	17,638	0.635	0.621	217	265	2,013	-4,670	18.8

have an unusually strong influence over the structures of the other regions.

With Athens in the regression, variations in per capita incomes explained an astonishing 95 percent of the variation in the coefficient of industrialization. With the addition of the variable, incidence of illiteracy, the coefficient of determination (the explained portion of the dependent variable's variation) increased to 98 percent. With the removal of the GAR regional product accounted for about 79 percent of the variations in the coefficient of industrialization.

Next, it was decided to regress regional per capita incomes on a similar set of variables for 1961, and again with and without Athens.[42] See Table 27.

With Athens the problem was processed as follows:

Variables in Equation	Coefficient of Determination Percent of Variance in Regional Per Capita Incomes Accounted for by Variables in Equation
X_1 Urbanization coefficient	97.06%
X_2 Per capita gross product	98.72
X_5 Interregional migration	99.00
X_4 % of Government receipts over expenditures	99.10
X_3 Incidence of illiteracy	99.11
X_7 Total net migration as a % of labor force	99.14
X_6 % of Mfg. gross product to total product	99.18

The urbanization coefficient alone explains 97 percent of the variance in the dependent variable so that the

TABLE 27

DATA FOR A REGRESSION OF REGIONAL PER CAPITA INCOME ON SELECTED VARIABLES IN THE GREEK REGIONS, 1961

Region	Per Capita Income	Urbanization Coefficient	Per Capita Gross Product	Incidence of Illiteracy per 1000 Population	Percentage of Gov't. Receipts Over Expenditures	Interregional Migration	Percentage of Mfg. Gross Product to Total Product	Total Net Migration as a Percentage of Labor Force
	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7
Greater Athens Region	812	2,314	627	9.8	64.3	+54,550	36.6	+8.21
Rest of Central Greece	273	0.477	307	21.9	135.7	-10,327	19.7	-2.11
Thessaly	234	0.621	297	21.4	100.0	-3,864	19.1	-1.47
Peloponnesos	217	0.559	355	19.5	100.0	-16,540	20.0	-3.62
Macedonia	271	0.839	371	16.9	100.0	-4,364	23.1	-0.55
Epirus	145	0.431	227	22.4	400.0	-3,819	22.0	-2.92
Thrace	236	0.614	287	29.6	154.5	-486	12.8	-0.02
Ionian Islands	141	0.325	231	24.9	214.5	-3,855	21.6	-4.20
Aegean Islands	216	0.554	274	19.0	131.6	-7,800	23.1	-4.26
Crete	217	0.621	265	18.8	166.6	-4,650	18.4	-2.31

other six variables are not important.

When the GAR was removed, the following was obtained:

Variable in Equation	Coefficient of Determination Percent of Variance in Regional Per Capita Incomes Accounted for by Variables in Equation
X_2 Per capita gross product	60.54%
X_7 Total net migration as a % of L.F.	71.58
X_4 % of Government receipt over expenditures	80.74
X_5 Interregional migration	84.41
X_6 % of Mfg. gross product to total product	93.31
X_1 Urbanization coefficient	94.09
X_3 Incidence of illiteracy	97.09

The results of the regression that includes Athens, then, are of special significance for they suggest that regional income disparities are largely due to differences in urbanization levels. This, moreover, strengthens the duality of the Greek economy and the subsequent argument that only two regions exist in effect. With the removal of Athens, in the same regression, the urbanization coefficient was replaced by per capita gross product thus indicating that differences in urbanization above are sufficient for the dichotomy of Greece into two actual regions, the GAR and the rest of the country. The Greek industrial location pattern provides another basis upon which the uniformity, or lack of it, of the Greek regions can be shown.

The absolute regional shares of industrial employment are shown in Table 28. Only the GAR and Macedonia

TABLE 28

REGIONAL DISTRIBUTION OF MANUFACTURING EMPLOYMENT, 1958 AND 1963

Region	1958		1963	
	Workers	Percentage of Total	Workers	Percentage of Total
Greater Athens Region	186,544	41.4	225,870	46.8
Rest of Central Greece	36,451	8.1	37,711	7.8
Peloponnesos	51,950	11.5	45,675	9.5
Ionian Islands	9,468	2.1	6,655	1.4
Thessaly	24,489	5.5	24,843	5.2
Macedonia	79,536	17.6	89,377	18.5
Epirus	7,402	1.6	7,110	1.5
Crete	21,965	4.8	17,638	3.7
Aegean Islands	24,182	5.3	19,013	3.9
Thrace	8,788	1.9	8,402	1.7
Total Greece	450,375	100.0	482,443	100.0

Source: National Statistical Service of Greece, Statistical Yearbook of Greece, 1958 and 1963.

have increased their employment shares during 1958-1963 while total manufacturing employment registered only a 7.1 percent increase for the same period. This is consistent with the fact that manufacturing's share of the country's national income has not changed since 1955.

The inter-industry distribution of manufacturing employment (see Tables 29 and 30) among the regions reveal only minor changes in respective shares and industry ranking. Of the seventeen industries that showed absolute increases in employment between 1958 and 1963, the GAR's share increased in nine and decreased in eight. Of the four industries that showed absolute decreases for the same period the GAR's share increased in three of these and decreased along with the nation only in one (ISIC 34, basic metal industries). Of more interest is the fact that whenever the GAR lost employment in a given industry, Macedonia seemed to have absorbed this loss with the exception of paper and paper products (27), basic metal industries (34), and miscellaneous (39) that were added to the other regions' shares.[43]

Inter-industry ranking was only slightly modified. The food industry (20), footwear (24), textiles (23), and metal products (35), retained their 1958 ranking although their 1958 share of 54.4 percent of total manufacturing employment decreased to 51.4 percent in 1963. This means that at least 3 percent of the 1958 total plus the 1958-1963 growth in total industrial employment of 7.1 percent

TABLE 29

EMPLOYMENT BY INDUSTRY AND REGIONAL EMPLOYMENT RATIOS FOR GREEK MANUFACTURING INDUSTRIES, 1958

ISIC Code[a]	Total Employment in Greece	Employment Ratios in Percentage									
		Greater Athens	Central Greece Euboia	Peloponnesos	Ionian Islands	Thessaly	Macedonia	Epirus	Crete	Aegean Islands	Thrace
20	60,982	28.4	9.40	16.50	2.70	6.20	19.90	2.60	6.10	5.60	2.60
21	7,752	20.5	11.90	14.50	1.20	6.20	23.80	1.20	9.30	8.50	2.70
22	14,457	40.2	10.30	7.10	. .	10.30	28.90	0.00	. .	1.80	1.30
23	56,658	51.6	6.70	9.30	0.90	3.60	19.80	1.40	0.90	4.60	1.20
24	74,974	38.1	7.00	10.50	1.50	5.20	20.80	2.30	5.70	5.50	5.10
25	25,050	23.3	9.30	15.80	2.00	8.70	21.00	3.50	5.70	5.50	5.10
26	23,652	49.7	4.40	7.70	1.60	3.50	17.60	1.80	7.00	5.40	1.20
27	4,914	58.8	1.50	28.80	1.20	0.30	8.70	. .	0.40	0.20	0.00
28	10,133	74.4	1.10	4.20	0.90	3.30	9.30	1.10	2.50	2.40	0.80
29	6,473	36.4	2.50	3.90	0.70	2.90	30.10	0.50	5.00	17.10	0.90
30	4,151	74.2	1.30	1.60	0.20	1.40	19.70	0.40	0.30	0.30	0.50
31	42,008	25.0	11.30	24.80	9.00	2.00	3.00	1.40	13.70	9.20	0.50
32	959	47.3	51.40	. .	. .	0.60	0.60	. .	. .	. .	. .
33	21,821	39.0	12.90	7.60	1.70	9.70	17.60	0.40	3.00	5.20	2.90
34	2,922	57.5	41.70	. .	. .	. .	0.70	. .	. .	. .	. .
35	34,007	47.6	8.30	8.60	1.00	5.90	17.00	1.60	4.10	3.60	2.30
36	9,741	47.2	6.20	7.50	0.70	10.20	19.50	0.30	2.00	5.10	1.20
37	9,909	68.8	4.70	5.00	0.50	4.10	13.60	0.60	1.10	1.00	0.50
38	23,718	52.8	5.00	5.70	0.70	8.00	19.60	0.80	2.10	2.60	2.70
39	6,811	68.1	2.90	4.40	1.20	1.70	12.30	1.70	1.60	5.10	0.90
51	9,283	50.4	9.00	7.90	1.40	4.20	14.70	1.20	2.90	6.40	1.70
All Mfg.	450,375	41.4	8.10	11.50	2.10	5.30	17.70	1.60	4.90	5.40	1.90

[a]International Standard Industrial Code.

Source: Calculated from data in Ministry of Coordination, Census of Industry, 1958.

TABLE 30

EMPLOYMENT BY INDUSTRY AND REGIONAL EMPLOYMENT RATIOS FOR GREEK MANUFACTURING INDUSTRIES, 1963

ISIC Code[a]	Total Employment in Greece	Employment Ratios in Percentage									
		Greater Athens	Central Greece Euboia	Peloponnesos	Ionian Islands	Thessaly	Macedonia	Epirus	Crete	Aegean Islands	Thrace
20	76,443	24.8	9.6	19.2	3.3	6.1	19.1	2.7	7.3	5.8	2.3
21	8,556	27.2	9.5	13.5	1.4	6.7	18.4	1.3	10.3	8.8	2.8
22	16,959	31.9	2.0	4.0	. .	9.2	47.3	0.1	. .	1.8	3.8
23	55,916	56.2	7.1	8.8	1.2	3.9	17.4	0.6	0.9	3.3	0.5
24	71,358	45.9	6.8	9.4	1.4	4.9	18.5	1.9	4.6	4.8	1.8
25	28,495	29.3	10.0	12.6	1.8	8.0	70.8	3.4	4.5	4.9	4.6
26	21,685	53.6	4.3	6.4	1.7	4.4	18.8	1.4	4.6	4.0	0.9
27	6,135	58.1	1.6	29.4	0.6	0.4	9.3	0.08	0.06	0.3	0.2
28	19,227	75.8	1.5	4.7	0.8	3.1	9.1	1.0	2.1	1.3	0.7
29	9,945	33.6	1.9	2.7	0.3	1.3	47.0	0.2	2.4	10.0	0.5
30	7,939	77.9	1.3	5.0	0.01	1.2	13.2	0.2	0.6	0.1	0.3
31	12,584	76.8	11.4	2.2	0.5	0.6	4.7	0.3	1.9	1.4	0.1
32	1,378	40.4	41.6	0.7	. .	0.5	15.7	. .	. .	. .	0.7
33	28,082	39.2	14.8	7.1	1.2	7.6	9.0	1.4	2.8	3.6	2.5
34	2,288	25.1	74.9	. .	. .	. .	. .	. .	. .	. .	. .
35	38,658	53.0	7.8	7.4	0.9	5.7	16.2	1.5	3.2	2.7	1.7
36	15,558	53.3	6.5	6.1	0.7	7.1	20.3	1.0	1.8	1.8	1.3
37	13,589	80.2	3.0	2.9	0.2	2.4	8.7	0.2	1.2	0.6	0.5
38	34,581	57.5	7.5	5.1	0.6	5.5	15.0	0.9	3.7	2.3	1.8
39	8,185	65.7	2.7	4.6	1.5	3.0	12.1	1.7	2.0	6.5	1.1
51	10,730	48.4	8.3	7.7	1.5	4.4	15.7	1.5	3.6	7.2	1.7
All Mfg.	482,292	46.8	7.8	9.5	1.4	5.2	18.5	1.5	3.7	3.9	1.7

[a]International Standard Industrial Code.

Source: Calculated from data in Ministry of Coordination, Census of Industry, 1963.

was redistributed in favor of the smaller industries. It is with this percentage change, and its geographic distribution, that any net shifts in industrial location must be concerned.

Table 31 characterizes the basic economic characteristics of each industry so that spatial shifts in employment can be associated with each industry's structure. The relationship between industry employment and labor remuneration is especially significant. Industries 20, 24, and 26, that lost substantially between 1958 and 1963, have a lower labor remuneration percentage than their employment percentage, suggesting that lower wages may have caused their sharp employment losses. This point will be amplified after the complete location pattern has been examined.

A comparison between employment and value added for the same industries reveals a similar situation so that low wages prevailing in 20, 24, and 26 can be directly linked to low productivities. Note that industries 24, 25, 26 are responsible for relatively low gross production values while they require very little investment.

Tables 32 and 33 describe broadly the GAR's rate of participation in the total industrial activity. It can be inferred from Table 33 that wages are much higher in the GAR except in industries 27, 29, and 32 where it has been already noted that the GAR's employment share in these industries has declined in absolute terms.

TABLE 31

PERCENTAGE DISTRIBUTION OF SEVERAL BASIC ECONOMIC CHARACTERISTICS, BY MANUFACTURING BRANCH, GREECE, 1963

ISIC[a] Code	Employment	Labor Remuneration	Investments	Cost of Raw Materials as a Percentage of GPV[b]	Gross Production Value (GPV)	Value Added
20	17.8	17.2	15.7	71.6	25.3	16.8
21	2.5	2.7	1.8	58.7	3.9	3.2
22	3.3	4.7	4.4	75.8	7.4	4.5
23	12.0	15.6	18.8	55.1	14.4	14.8
24	15.0	6.2	1.3	59.1	5.9	7.9
25	5.5	2.6	1.1	61.3	2.6	2.9
26	4.3	2.6	0.9	49.5	2.2	2.8
27	1.3	2.1	7.8	60.3	2.2	1.9
28	2.9	4.8	1.8	33.5	2.5	3.9
29	2.0	2.0	0.6	67.0	1.9	1.7
30	1.7	2.3	4.5	48.4	2.0	2.6
31	2.7	5.5	6.3	46.8	4.6	5.1
32	0.3	1.1	1.0	66.3	3.0	2.5
33	7.0	8.7	13.1	19.7	5.1	7.3
34	0.6	1.8	8.1	56.0	2.2	1.8
35	8.3	6.3	3.8	54.8	5.4	6.6
36	2.7	3.1	1.6	48.5	2.1	2.8
37	2.7	3.7	3.1	48.4	3.2	4.1
38	5.6	6.1	3.0	39.7	3.4	5.5
39	1.8	0.9	0.4	36.8	0.7	1.3
Total	100.0	100.0	100.0	57.76	100.0	100.0

[a]International Standard Industrial Code.

[b]This is applicable only to large-scale industry, i.e. plants of 10 or more workers.

Source: National Statistical Service of Greece, Annual Industrial Survey for the Year 1963 (Athens: 1967), pp. 21-31.

TABLE 32

PERCENTAGE PARTICIPATION OF THE GREATER ATHENS REGION IN TOTAL VALUE ADDED OF LARGE-SCALE INDUSTRY[a] IN 1958 AND 1963

ISIC[b] Code	Branch	1958	1963
20	Food	44.7	43.0
21	Beverages	32.6	29.0
22	Tobacco	17.1	27.8
23	Textiles	57.4	60.4
24	Footwear and other wearing apparel	78.2	79.0
25	Wood and Cork	58.8	59.1
26	Furniture and Fixtures	80.4	79.6
27	Paper and paper products	42.1	44.1
28	Printing and Publishing	89.5	89.9
29	Leather and Leather Products	52.5	37.3
30	Rubber	61.4	52.5
31	Chemicals	72.8	87.1
32	Products of Petroleum and Coal	100.0	8.8
33	Non-metalic mineral products	56.8	46.3
34	Basic metal industries	47.7	47.4
35	Metal products	80.4	80.5
36	Machinery	56.1	63.2
37	Electrical machinery	86.8	93.5
38	Transport equipment	69.8	83.8
39	Miscellaneous	86.0	76.0
	Total	55.7	59.5

[a]In Greek statistics, large-scale industry includes all plants employing 10 or more workers.

[b]International Standard Industrial Code.

Source: National Statistical Service of Greece, Annual Industrial Survey for the Year 1963 (Athens: 1967), p. 27.

TABLE 33

PERCENTAGE PARTICIPATION OF THE GREATER ATHENS REGION IN THE TOTAL INDUSTRIAL ACTIVITY, BY MANUFACTURING BRANCH, 1963

ISIC[a] Code	Employment	Labor Remuneration	Gross Production Value	Value Added
20	24.8	35.2	33.2	32.3
21	27.2	43.0	33.9	30.9
22	31.9	37.0	18.4	27.8
23	56.2	61.7	58.3	59.8
24	45.9	72.4	65.8	62.4
25	29.3	51.5	41.7	43.6
26	53.6	73.4	66.4	67.0
27	58.1	55.3	50.5	47.9
28	75.8	83.9	87.2	85.7
29	33.6	30.0	34.8	33.3
30	77.9	80.0	77.4	75.0
31	76.8	84.4	79.7	80.5
32	40.4	22.6	8.9	11.2
33	39.2	44.8	43.9	46.3
34	25.1	39.4	41.3	33.8
35	53.0	76.4	70.2	66.5
36	53.3	62.7	66.9	63.5
37	80.2	90.0	85.0	88.1
38	57.5	82.8	77.9	80.0
39	65.7	66.2	59.3	60.9
Total	100.0	100.0	100.0	100.0
Total GAR	46.8	59.0	49.5	54.6

[a]International Standard Industrial Code.

Source: Calculations based on National Statistical Service of Greece, Annual Industrial Survey for the Year 1963 (Athens: 1967), pp. 78-163.

The measurement of the regional dispersal of Greek industry has been undertaken with the objective of determining whether or not any decentralization of manufacturing employment has occurred during the 1958-1963 period. It is utterly impossible to conclude that any changes in the locational structure are directly linked to the various decentralization schemes without examining first, how much dispersal has taken place, second, which industries were affected, third, which regions were affected, and fourth, which other factors may have been responsible for the shifts, if any. In order to provide an adequate answer to the first three questions it was necessary to a) compute the localization coefficients of all industries on a regional basis, b) determine the location quotient of all industries of the GAR versus the rest of Greece, and c) compute the specialization coefficients of all regions; all three for both 1958 and 1963.

The computational procedure for deriving the localization coefficients is based on the following matrix:

Region / Industry	R_1	R_2	. . .	R_{10}	Total
20	$a_{20.1}$	$a_{20.2}$	. . .	$a_{20.10}$	$\sum_j a_{20j}$
21	$a_{21.1}$	$a_{21.2}$	. . .	$a_{21.10}$	$\sum_j a_{21j}$
.	.	.	. . .		.
.	.	.	. . .		.
39	$a_{39.1}$	$a_{39.2}$	. . .	$a_{39.10}$	$\sum_j a_{39j}$
Total	$\sum_i a_{i1}$	$\sum_i a_{i2}$	. . .	$\sum_i a_{i10}$	$\sum_i \sum_i a_{ij}$

Where: a_{ij} = employment in i^{th} industry in j^{th} region

$\sum_i a_{ij}$ = total employment in the jth region

$\sum_j a_{ij}$ = total employment in the i industry

$\sum_i \sum_j a_{ij}$ = total national employment

The value of the localization coefficient for a given industry is one-half the absolute value of the sum, of the differences between regional shares of total employment and regional shares of industry employment for the given industry.[44] The coefficient can assume any value between zero and unity. At zero it is meant that each region has the same proportion of employment devoted to the industry in question as is its total employment as a share of national employment. At unity the reverse is true; that is, the share of regional employment in the same industry is not distributed as the share of regional employment in total national employment.

Table 34 shows the localization coefficients of each industry which is the sum of the absolute values of the localization coefficients for each region. Industry 20, for example, increased from 0.1288 to 0.2206, denoting that from 1958 to 1963 industry 20 became more localized, or it approached unity. Of the twenty-one industries, a total of six, namely, food (20), tobacco (22), leather (29), non-metallic mineral products (33), basic-metal industries (34),

TABLE 34

COEFFICIENTS OF LOCALIZATION OF GREEK MANUFACTURING, BY INDUSTRY BRANCH, FOR 1958 AND 1963, AND LOCATION QUOTIENT FOR THE GREATER ATHENS REGION AND THE REST OF GREECE

ISIC[a] Code	Coefficients of Localization		Location Quotient			
			Greater Athens Region		Rest of Greece	
	1958	1963	1958	1963	1958	1963
20	.1288	.2206	0.686	0.501	1.198	1.414
21	.2213	.1986	0.495	0.058	1.333	1.368
22	.1843	.3483	0.971	0.579	1.000	1.058
23	.1238	.0938	1.246	1.201	1.570	0.487
24	.0613	.0223	0.918	0.978	1.036	1.016
25	.1913	.1747	0.056	0.634	1.284	1.328
26	.1140	.0826	1.202	1.146	0.841	0.872
27	.3472	.3118	1.420	1.241	0.690	0.788
28	.3305	.2547	1.798	1.619	0.428	0.455
29	.2485	.3457	0.879	0.718	0.547	1.267
30	.3491	.3109	1.792	1.664	0.433	0.415
31	.3622	.3109	0.604	1.645	1.256	0.435
32	.4926	.3378	1.146	0.873	0.886	1.110
33	.1006	.1135	0.941	0.838	1.021	1.142
34	.4959	.6705	1.381	0.537	0.717	1.408
35	.0725	.0676	1.150	1.132	0.877	0.836
36	.1249	.1014	1.140	1.138	0.538	0.878
37	.2836	.3333	1.638	1.745	0.522	0.375
38	.1627	.1112	1.275	1.229	0.790	0.425
39	.2682	.2077	1.645	1.369	0.534	0.667
51	.1075	.0548	1.203	1.035	0.817	0.970
		[b] T_1VA	1.346	1.169	0.737	0.851
		[b] T_2TP	1.194	1.062	0.847	0.944

[a] International Standard Industrial Code.

[b] Total employment (national) was substituted, in the location quotient ratio, for value added (VA) and total production (TP) in order to measure any shifts in the relative shares of both quantities by the Greater Athens Region and Rest of Greece.

and electrical machinery (37), were further concentrated while the rest were dispersed to a varying degree.

A careful comparison of Tables 35 and 36 will reveal that the GAR lost substantial portions of its 1958 shares in those industries that were "localized" while it gained heavily in chemicals (31), machinery (36), electrical machinery (37), and wood and cork (25), thus suggesting that the GAR continued to attract heavy manufacturing and specialize in this area (see Table 37).[45]

The GAR's loss of industry 20 was largely absorbed by Peloponnesos, Thrace, the Ionian Islands, and the Aegean Islands. Its loss of industry 22 was absorbed by Thessaly and so on. In conclusion, although the GAR increased its share of total industrial employment between 1958 and 1963, by an estimated 20 percent (see Table 28), Greek industry, in general, exhibited a reasonable amount of delocalization. The GAR "lost" in light industry and "gained" in heavy industry.

This conclusion is easily verified, with the calculations of the location quotient, in Table 34, and its changes for the same period. Using the same notation, the location quotient can be expressed as follows:

$$L.Q. = \frac{\text{employment in industry } i \text{ in region } j}{\text{total employment in region } j} \Big/ \frac{\text{total national employment in industry } i}{\text{total national employment}}$$

The properties of the location quotient are basically

TABLE 35

LOCALIZATION COEFFICIENTS FOR THE GREEK INDUSTRY, BY REGION AND MANUFACTURING BRANCH, 1958

ISIC Code[a]	Greater Athens Region	Rest of Central Greece	Pelo-ponnesos	Ionian Islands	Epirus	Thes-saly	Mace-donia	Thrace	Aegean Islands	Crete	Total Greece By Branch
20	-.128	+.013	+.050	+.006	+.009	+.008	+.022	+.006	+.002	+.012	.1288
21	-.209	+.038	+.030	-.009	-.004	+.008	+.061	+.007	+.031	+.044	.2213
22	-.012	+.022	-.044	-.021	-.016	+.049	+.113	-.006	-.036	+.049	.1843
23	+.102	-.014	-.022	-.012	-.002	-.018	+.021	-.008	-.008	-.040	.1238
24	+.033	-.011	-.010	-.006	+.006	-.002	+.031	+.003	+.010	+.008	.0613
25	-.181	+.012	+.043	+.001	+.019	+.033	+.033	+.031	+.001	+.008	.1913
26	+.083	-.037	-.038	-.005	+.002	-.020	-.001	-.007	+.001	+.021	.1140
27	+.174	-.066	+.173	-.009	-.016	-.051	-.090	-.019	-.052	-.045	.3472
28	+.330	-.070	-.073	-.012	-.005	-.021	-.084	-.011	-.030	-.024	.3305
29	-.050	-.056	-.076	-.014	-.011	-.025	+.124	-.011	+.117	+.001	.2435
30	+.328	-.068	-.099	-.019	-.012	-.040	+.020	-.014	-.051	-.046	.3491
31	-.164	+.032	+.133	+.069	-.002	-.034	-.147	-.015	+.038	+.088	.3622
32	+.059	+.433	-.115	-.021	-.016	-.049	-.170	-.019	-.054	-.049	.4926
33	-.024	+.048	-.039	-.004	-.012	+.043	-.001	+.009	-.002	-.019	.1006
34	+.157	+.336	-.115	-.021	-.016	-.054	-.170	-.019	-.054	-.049	.4959
35	+.062	+.002	-.029	-.011	-.001	+.005	-.007	+.003	-.018	-.008	.0725
36	+.058	-.019	-.040	-.014	-.013	+.048	+.019	-.007	-.003	-.029	.1249
37	+.284	-.034	-.074	-.015	-.010	-.013	-.040	-.014	-.044	-.038	.2836
38	+.114	-.031	-.059	-.014	-.008	+.026	+.019	+.007	-.028	-.028	.1627
39	+.267	-.052	-.071	-.009	+.001	-.037	-.053	-.011	-.003	-.033	.2682
51	+.090	+.009	-.036	-.007	-.004	-.012	-.023	-.002	+.010	-.020	.1075

[a]International Standard Industrial Code.

Source: Table 29.

TABLE 36

LOCALIZATION COEFFICIENTS FOR THE GREEK INDUSTRY, BY REGION AND MANUFACTURING BRANCH, 1963

ISIC Code[a]	Greater Athens Region	Rest of Central Greece	Pelo-ponnesos	Ionian Islands	Epirus	Thes-saly	Mace-donia	Thrace	Aegean Islands	Crete	Total Greece By Branch
20	-.221	+.020	+.097	+.019	+.009	+.005	+.012	+.036	+.018	+.006	.2206
21	-.196	+.017	+.041	+.000	+.015	-.002	-.001	+.066	+.048	+.011	.1986
22	-.149	-.059	-.055	-.014	+.040	+.288	-.014	-.037	-.021	+.020	.3483
23	-.094	-.007	-.006	-.002	-.012	-.012	-.009	-.027	-.006	-.012	.0938
24	-.009	-.010	-.001	-.000	-.002	.000	+.004	+.004	+.009	+.001	.0223
25	-.175	+.022	+.032	+.004	+.028	+.023	+.020	+.008	+.009	+.029	.1747
26	+.068	-.036	-.031	+.002	-.007	+.002	-.001	+.010	+.001	-.008	.0826
27	+.113	-.062	+.199	-.008	-.047	-.092	-.014	-.035	-.037	-.017	.3118
28	+.289	-.063	-.048	-.006	-.021	-.095	-.005	-.005	-.026	-.010	.2547
29	-.132	-.059	-.067	-.011	-.039	+.285	-.012	-.013	+.060	-.012	.3457
30	+.311	-.065	-.044	-.013	-.040	-.053	-.012	-.031	-.038	-.015	.3109
31	+.300	+.036	-.073	-.008	-.045	-.138	-.012	-.018	-.025	-.016	.3109
32	-.060	+.338	-.088	-.014	-.046	-.028	-.015	-.037	-.040	-.011	.3378
33	-.076	+.070	-.024	-.002	+.024	+.012	-.000	-.008	-.003	+.007	.1135
34	-.217	+.670	-.095	-.014	-.051	-.185	-.015	-.037	-.040	-.017	.6705
35	+.062	-.001	-.020	-.005	+.005	-.024	+.001	-.005	-.012	-.001	.0676
36	+.064	-.013	-.034	-.006	+.020	+.017	-.004	-.018	-.021	-.004	.1014
37	+.333	-.048	-.065	-.012	-.027	-.098	-.012	-.024	-.033	-.012	.3333
38	+.107	-.003	-.043	-.008	+.003	-.035	-.006	+.000	-.016	+.001	.1112
39	+.178	-.051	-.048	-.001	-.021	-.064	+.003	-.017	+.026	-.006	.2077
51	+.016	+.005	-.018	+.001	-.007	-.029	+.001	-.001	+.033	-.000	.0548

[a]International Standard Industrial Code.

Source: Table 30.

TABLE 37

COEFFICIENTS OF REGIONAL SPECIALIZATION OF GREEK MANUFACTURING, 1958 AND 1963

Region	Specialization Coefficients	
	1958	1963
Greater Athens Region	0.1688	0.2787
Rest of Central Greece	0.0550	0.1650
Peloponnesos	0.1700	0.2300
Ionian Islands	0.2550	0.2500
Thessaly	0.1850	0.1650
Macedonia	0.0900	0.1150
Epirus	0.2350	0.2550
Crete	0.2500	0.2800
Aegean Islands	0.1600	0.2100
Thrace	0.2700	0.2250

Source: Tables 35 and 36.

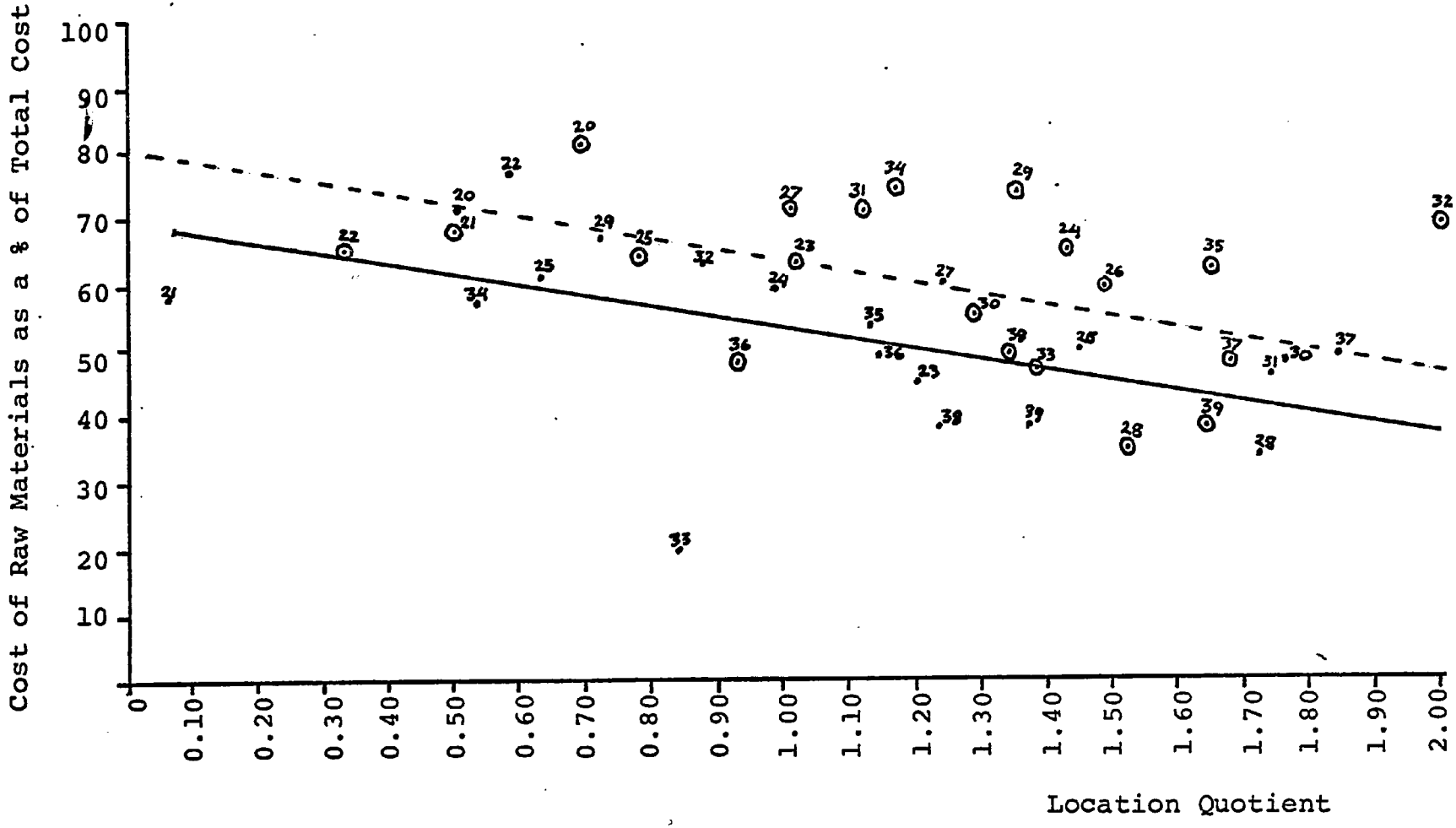
the same to those of the localization coefficient. The only difference is that the values of the quotient can range from zero, when a region has no employment in a given industry, to more than unity, when a region has a larger percentage of employment in a given industry than its percentage of total employment from the total nation percentage. A value of unity for a given industry and region means that the same proportion of the region's employment is occupied in the industry as is true for the country as a whole.

There is a considerable change in the location quotient of most industries in the GAR, with the exception of chemicals (31) and electrical machinery (37). The same is noted for value added and total production in spite of large absolute gains made by the GAR in both areas.

The analysis of Greece's industrial location pattern has revealed two major phenomena. First, that the GAR dominates by far the country's total industrial activity, and second, that during the period of 1958-1963 the GAR began to specialize in heavy manufacturing thus causing reciprocal changes in the entire locational structure.

Both phenomena can be largely explained on the basis of the absence of any resource concentration in Greece which renders market orientation, and hence, Athens' market, the major locationally attracting force. A correlation between the cost of raw materials and the degree of industrial concentration supports this point. Figure 9

Fig. 9.--Relationship between Cost of Raw Materials and Degree of Industrial Concentration in the Greater Athens Region: By Manufacturing Branch, 1958-1963.



reveals that raw material oriented industries are well dispersed and they do not tend to concentrate in Athens. The relationship for both 1958 and 1963 has changed so little that both regression equations are fitted in a parallel fashion.

The amount of inter-industry locational shift is rather difficult to be explained. A tentative explanation can be structured on the basis that wage rates increased much faster outside the GAR, in spite of their rather low bases, than in the GAR (see Table 38). Moreover, the shift itself is considered to be too small to have been caused by either a major structural change in the Greek economy or by a major policy decision (see Table 39).[46]

On the whole, there does not seem to have been any decentralization of manufacturing activity during the 1958-1963 period. On the contrary, other than some modest changes in the localization coefficients of a few light consumer-product industries, Athens has actually become more centralized. The inflow of new firms into Athens has continued unabated and total employment in the Athens region increased more than the total national industrial employment which means that Athens "pulled" directly about 7,000 workers from the other regions.

A more illustrative method of showing the GAR's substantial industrial employment gains along with the respective losses of the other regions is the shift-share method.

TABLE 38

PERCENTAGE CHANGES IN MANUFACTURING WAGES AND SALARIES BETWEEN 1958 AND 1963, BY MANUFACTURING BRANCH: GREATER ATHENS REGION VS. REST OF GREECE

ISIC[c] Code	Greater Athens			Rest of Greece			Percentage Changes Compared[a]
	1958	1963	Percentage Change	1958	1963	Percentage Change	
	Abs. Wage Level	Abs. Wage Level		Abs. Wage Level	Abs. Wage Level		
20	381	741	+94	169	390	+131	R of G 37
21	839	1,067	+27	276	380	+38	R of G 11
22	545	738	+35	133	661	+397	R of G 362
23	503	703	+40	292	543	+86	R of G 40
24	150	307	+104	80	101	+20	GAR 84
25	228	397	+74	52	155	+200	R of G 126
26	155	355	+155	25	166	+556	R of G 299
27	623	705	+13	477	829	+74	R of G 61
28	742	931	+25	308	484	+57	R of G 32
29	353	469	+33	291	471	+62	R of G 29
30	390	655	+67	342	634	+71	R of G 4
31	892	1,076	+21	293	645	+120	R of G 99
32	807	989	+23	2,838	2,030	-28	GAR 51
33	478	808	+69	393	491	+25	GAR 44
34	1,078	1,187	+10	1,000	1,575	+57	R of G 47
35	b	358	b	b	165	b	b
36	384	636	+66	220	402	+83	R of G 17
37	376	740	+97	76	322	+323	R of G 226
38	519	766	+48	90	313	+225	R of G 177
39	331	297	-10	123	186	+94	R of G 104
Aver.	411	653	+59	189	368	+95	R of G 36
% Share	59.0	63.6	+4.6	41.0	36.4	-4.6	GAR 9

[a]When the Greater Athens Region's percentage increase in wages, between 1958 and 1963, exceeds that of Rest of Greece the notation is GAR X%. When the reverse is true it is noted as R of G X%.

[b]Not available.

[c]International Standard Industrial Code.

Source: Calculations based on National Statistical Service of Greece, Annual Statistical Survey for the Years 1958 and 1963 (Athens: 1967).

TABLE 39

REGIONAL DISTRIBUTION OF INDUSTRIAL LICENSES, FOR NEW FIRMS AND EXPANSIONS, FOR THE PERIOD OF 1962-1966

Region	1962		1963		1964		1965		1966		Total New Licenses	Total Licenses for Expansion	Total Power Involved (In H.P.)
	New	Exp.	New	Exp.	New	Exp.	New	Exp.	New	Exp.			
Greather Athens Region	561	304	531	331	594	372	957	467	1077	433	3720	1907	144,848
Rest of Central Greece	123	23	111	33	109	40	123	52	190	42	556	190	99,289
Thessaly	63	16	88	16	99	29	170	39	247	60	667	160	41,268
Peloponnesos	165	73	185	60	175	44	166	46	220	62	911	285	40,314
Macedonia	181	19	199	24	262	36	263	26	377	27	1282	133	103,814
Epirus	49	3	44	6	65	7	45	9	52	11	255	36	3,925
Thrace	12	1	37	2	47	4	26	4	21	1	133	12	3,529
Ionian Islands	34	28	36	21	56	25	39	10	41	16	236	100	4,510
Aegean Islands	48	8	48	5	46	3	31	8	55	6	228	30	6,276
Crete	64	10	69	22	86	17	43	14	41	11	303	74	6,351
Total Greece	1300	485	1348	520	1539	577	1863	675	2321	669	8331	3027	454,134
GAR as a percentage of total	43%	62%	39%	63%	39%	65%	51%	69%	46%	64%	44%	63%	32%

Note: Exp. means expansions.

Source: Statistical Yearbooks of Greece of 1962, 1963, 1964, 1965, 1966, and 1967.

A Shift-Share Analysis of Industrial Employment Growth[47]

This technique is designed to separate and measure two major components of regional growth: the industrial-mix and the regional share component. The basic assumption is that the shifts in total employment observed among regions (see Tables 29 and 30), in relation to the national average are generated by the industrial-mix and regional share phenomena.

The basic relationships are:

(1) $\Delta_{ij} = NG_{ij} + IM_{ij} + RS_{ij}$

Where:

Δ_{ij} = Total change in regional employment
NG_{ij} = National growth effect
IM_{ij} = Industrial mix effect
RS_{ij} = Regional share effect

and:

(2) $IM_{ij} + RS_{ij}$ = Net relative change

Shifts in regional shares are produced because some regions are expanding in certain employment sectors more rapidly than other regions.[48] The reasons may be better access to productive inputs and markets, certain economies of scale, or any locational factors that simply make these regions and their industries more competitive. The technique itself does not specify why some regions exhibit net (upward) regional share shifts over time, other than to measure them.[49] The industrial mix effects arise out of the fact that nationwide, some of the employment sectors or

industries expand more rapidiy than others. Therefore, those regions that tend to specialize in the slow-growth factors (e.g., chemicals, textiles, footwear, etc., as in Greece) show negative industrial mix effects in total employment. Other regions that specialize in rapid-growth sectors will show positive effects. The computational procedure is relatively easy, although the bulk of the data to be processed requires the use of computers. Given the following:

aij = employment in the ith industry and j^{th} region in the base year
$\bar{a}ij$ = the same in the terminal year
Ai = national employment in the ith industry
aj = total regional employment (all sectors)
Atnn = total national employment in all sectors

Then, total actual shift in employment for a region is:

$$(3)\quad S_a = \bar{a}j - \left(\frac{\bar{A}tnn}{Atnn}\right) aj$$

The regional share effect for a region is:

$$(4)\quad Srs = \sum_i \left[\bar{a}ij - \left(\frac{\bar{A}i}{Ai}\right) \right] aij$$

To obtain the industrial mix effect we have:

$$S_t - S_{rs} = \left[\bar{a}j - \left(\frac{\bar{A}tnn}{Atnn}\right) aj \right] - \sum_i \left[\left(\bar{a}ij\right) - \frac{\bar{A}i}{Ai} aij \right]$$

$$= \sum_i \left(\frac{\bar{A}i}{Ai}\right) aij - \left(\frac{\bar{A}tnn}{Atnn}\right) \sum_i aij$$

which yields:

$$(5) = S_{im} = \sum_i \left[\left(\frac{\bar{A}i}{Ai}\right) - \left(\frac{\bar{A}tnn}{Atnn}\right) \right] aij$$

The purpose of this analysis is eminently clear; it is to sort out and measure the factors which relate to the differences in the rate of employment growth among Greek regions. The results will be consistent with the changes in the industrial location pattern, discussed earlier, but the implication of these changes will strengthen our understanding of the relative competitive position of each region.

The latter is deemed critical to both the efficacy and subsequent performance of the government's decentralization policies.

Table 40 shows that the net relative change in the GAR's employment exceeded national employment by 23,152 workers which indicates this number is in excess of what would have occurred at the overall rate of all industries combined. Since only the GAR exhibits a positive net change, the other nine regions exhibit equivalent losses totaling the GAR's net gain.[50] This constitutes a more representative index of both the locational pull exercised by the GAR on national economic activity and its comparative superiority over the rest of the country in terms of higher population growth, high wage rates and higher incomes. In addition, the GAR's 1958-1963 performance confirms an earlier observation that, although certain industries were somewhat decentralized, its absolute share of employment, value added, and total production increased for the same period. This should increase the GAR's coefficient

TABLE 40

COMPONENT OF EMPLOYMENT CHANGE FOR THE GREEK REGIONS, 1958-1963

Region	National Growth	Industrial Mix	Regional Share	Total Actual Change	Net Relative Change
Greater Athens Region	24,944	4,385	18,767	48,095	23,152
Rest of Central Greece	4,693	-802	377	4,268	-425
Peloponnesos	6,349	-1,242	-4,685	422	-5,927
Ionian Islands	951	-129	-946	-124	-1,075
Epirus	963	-119	-600	244	-719
Thessaly	3,435	-315	-2,756	364	-3,071
Macedonia	11,323	-1,725	962	8,684	-3,512
Thrace	1,277	35	-2,011	-699	-1,976
Aegean Islands	2,898	128	-4,671	-1,645	-4,543
Crete	2,466	-215	-1,688	564	-1,902
Total Greece	59,299	0	0	59,372	0

Source: Calculations based on Tables 29 and 30.

of specialization which is evident in Table 37.

A more detailed survey of inter-industry and inter-regional shares of industry-mix and regional shares will enable us to identify which region gained or lost in what industry.

Beginning with the industrial mix effect (see Table 41) several interesting developments can be noted:

First, all regions display unfavorable industrial mix shares for industries 20, 22, 23, 24, 26, and 31. This means that these industries failed to grow at, at least, the rate at which total (national) manufacturing employment grew during the 1958-1963 period, thus "lost" workers to other industries.[51]

Second, the industries displaying a negative industry mix are basically consumer industries suggesting that their slow growth may be due to the slow population growth and more limited markets.

Third, only the GAR exhibits a positive industry mix effect, of some consequence, while Thrace and the Aegean Islands, because of their comparative underdevelopment in the affected industries, were able to register small positive totals.

Although explanations of positive and negative industry mix effects are principally of a locational nature, that is, the advantages that a region offers for the development of a particular industry over other regions, the above industries have not undergone any major

TABLE 41

INDUSTRIAL MIX EFFECT BY REGION AND INDUSTRY, 1958-1963

ISIC Code	Region									
	Greater Athens Region[a]	Rest of Central Greece	Peloponnesos	Ionian Islands	Epirus	Thessaly	Macedonia	Thrace	Aegean Islands	Crete
20	-1,584	-524	-920	-151	-145	-346	-1,109	-145	-312	-340
21	85	94	60	5	5	26	99	11	35	39
22	-5,510	-1,412	-973	0	0	-1,412	-3,961	-178	-147	0
23	-2,536	-330	-457	-44	-69	-177	-973	-59	-226	-44
24	-2,035	-373	-561	-80	-123	-278	-1,111	-123	-342	-304
25	402	160	274	35	60	150	362	88	95	98
26	-1,384	-122	-214	-44	-50	-97	-490	-33	-150	-195
27	373	10	183	8	0	2	55	0	1	2
28	1,680	25	95	20	25	75	210	18	54	57
29	1,114	77	119	21	15	89	922	27	523	153
30	1,476	26	32	4	8	28	392	10	6	6
31	-266	-120	-264	-96	-15	-21	-32	-5	-98	-146
32	313	339	0	0	0	4	4	0	0	0
33	984	325	192	43	10	245	444	73	131	76
34	63	45	0	0	0	0	1	0	0	0
35	310	54	56	6	10	38	111	15	23	27
36	2,262	297	359	33	14	489	934	57	244	96
37	2,313	158	163	17	20	138	457	17	34	37
38	5,505	426	486	60	68	683	1,672	230	222	179
39	1,747	74	113	31	44	44	315	23	131	41
51	73	13	11	2	2	6	21	9	2	4
Total	4,385	-802	-1,242	-129	-119	-315	-1,725	35	128	-215

[a]International Standard Industrial Code.

Source: Calculations based on Tables 29 and 30.

locational change during the 1958-1963 period. Nor have wage rates changed in a manner suggesting that labor should have moved out of these industries (see Table 38). The lagging growth of these industries, with the exception of chemicals (31), is due to the multiplicity of small firms which are managed by "working proprietors with no entrepreneurial capabilities" thus preventing the formation of larger and more efficient firms.[52] Moreover, during 1958-1963, industries 20, 23, 24, and 26 continued the proliferation of small-sized firms, especially in the range of 0-5 workers, thus suggesting that any additional growth in these industries was absorbed by proprietor-run firms that often employ no workers.[53]

The dramatic decrease in employment in chemicals (31) is relatively easier to explain. Three factors seemed to have combined in reducing the importance of this industry: first, the lack of domestically produced raw materials necessary for the production of chemicals, second, the rising volume of imported chemicals that replace the usually low-quality Greek products,[54] and third, the lack of technological know-how, so necessary for the expansion of this industry.

Table 42 shows the regional share effect for all industries during the same period. This effect constitutes a better index of the dynamic elements of change among regions since growth in a given industry is employed as the base of measuring a region's comparative growth in the

TABLE 42

REGIONAL SHARE EFFECT BY REGION AND INDUSTRY, 1958-1963

ISIC[a] Code	Region									
	Greater Athens Region	Rest of Central Greece	Peloponnesos	Ionian Islands	Epirus	Thessaly	Macedonia	Thrace	Aegean Islands	Crete
20	-2,774	147	2,066	436	53	-82	-648	-257	147	913
21	575	-204	-82	16	12	39	-464	11	24	86
22	-1,405	-1,416	-530	0	16	-192	3,120	418	6	0
23	2,573	225	-260	173	-464	172	-1,370	-365	-703	19
24	5,589	-108	-813	-91	-316	-210	-1,622	-365	-1,119	-299
25	1,723	198	-902	-50	-16	-198	-53	-152	-170	-350
26	851	-30	-291	-7	-84	201	251	-57	-299	-513
27	-44	7	63	-38	5	8	38	4	3	-13
28	182	48	62	-18	-20	-28	-32	-8	-140	-51
29	-276	-57	-114	-44	-25	-161	1,693	-39	-705	-261
30	293	3	273	-10	-14	-18	-514	-20	-14	26
31	6,524	14	-2,850	-1,067	-142	-172	216	-47	-977	-1,487
32	-90	-135	9	0	0	-2	208	9	0	0
33	69	535	-136	-152	292	-591	593	-120	-445	-44
34	-740	759	0	0	0	0	-17	0	0	0
35	2,087	-212	-446	-45	-31	-85	-325	-248	-356	-356
36	946	49	-225	4	112	-476	119	19	-506	-26
37	1,542	-230	-279	-41	-54	-228	-664	-1	-53	17
38	1,633	873	-196	-40	39	-864	-1,581	-313	-94	543
39	-282	-16	19	23	2	108	-15	19	117	34
51	-210	-75	-26	7	35	23	103	-502	592	75
Total	18,767	377	-4,685	-946	-600	-2,756	-962	-2,011	-4,671	-1,688

[a]International Standard Industrial Code.

Source: Calculations based on Tables 29 and 30.

same industry, see equation (4). Regions can promote their share in rapid-growth industries, assuming they enjoy a comparative advantage in doing so over other regions, and share losses in slow-growing regions. Hence, the measurement of the regional shares of growth is more specific than measuring the industry mix in that it establishes which industries enjoy locational advantages among various regions. Therefore, a positive regional share in, say, industry i and region j, means that this industry grew faster than total industry i, in the nation, and consequently, the same industry grew at a lesser rate in other regions. No industry can have a positive or negative number for all regions (moving horizontally in Table 42) since one region's gain is another's loss and vice versa. It may be useful to point out, as a means of grasping the notion of this effect, that the contraction observed in the industry mix of chemicals (31), as per Table 41, affected adversely all regions except the GAR which by itself gained about as much as the other regions lost in this industry.[55] Conversely, the GAR's loss of the food industry (20) was fairly distributed among the other regions, except Macedonia.

This effect does not necessarily imply locational shifts since industry growth, or the lack of it, may be both spontaneous and localized. That is, a region's loss does not automatically become another region's gain by a simple process of transfer of workers although such shifts

may and do occur as, for example, transport costs change, wage differentials perpetuate themselves to the limits of workers' consciousness, new resources are discovered, or any other changes that affect a region's locational balance.

Persistent losses of regional shares, however, imply that any or all of the above are in operation and, in the long-run, such losses should be associated with reciprocal changes in the locational structure of these regions. The GAR's enormous gain, as it is accompanied by substantial negative shares by almost all the other regions, clearly denotes that the GAR constitutes the major locational force in Greece.

Finally, Table 43 shows the net relative change for all industries and regions, which is the summation of both the industry-mix and regional share effects. Again, the GAR is the only region with a positive sum.[56]

TABLE 43

NET RELATIVE CHANGE BY REGION AND INDUSTRY, 1958-1963

ISIC[a] Code	Region									
	Greater Athens Region	Rest of Central Greece	Peloponnesos	Ionian Islands	Epirus	Thessaly	Macedonia	Thrace	Aegean Islands	Crete
20	-1,191	-377	1,146	285	-92	-428	-1,757	-402	-165	573
21	660	-154	-22	21	17	65	-365	22	60	125
22	-6,916	-2,828	-1,503	0	16	-1,604	-842	240	-241	0
23	37	-105	-717	129	-533	-4	-2,343	-424	-929	-25
24	3,554	-481	-1,374	-172	-439	-488	-2,733	-487	-1,461	-604
25	2,123	359	-630	-16	45	-48	309	-64	-75	-252
26	-532	-172	-505	-51	-134	104	-239	-90	-450	-708
27	329	17	246	-30	5	10	93	4	5	-11
28	1,863	73	157	3	5	47	178	10	-85	5
29	839	20	5	-23	-10	-73	2,615	-12	-182	-107
30	1,769	29	304	-6	-6	10	-122	-10	-8	32
31	6,258	-106	-3,113	-1,163	-157	-193	184	-52	-1,075	-1,633
32	223	205	9	0	0	2	212	9	0	0
33	1,053	860	56	-110	302	-346	1,037	-47	-314	32
34	-677	804	0	0	0	0	-16	0	0	0
35	2,397	-158	-390	-39	-21	-47	-214	-233	-323	-330
36	3,208	346	135	38	126	13	1,054	76	-261	69
37	3,855	-72	-116	-25	-34	-90	-207	17	-20	54
38	7,138	1,300	290	20	107	-182	91	-83	128	723
39	1,465	58	131	54	46	152	300	42	348	75
51	-137	-62	-15	9	36	29	124	-493	595	79
Total	23,152	-425	-5,927	-1,075	-719	-3,071	-3,512	-1,976	-4,543	-1,902

[a]International Standard Industrial Code.

Source: Calculations based on Tables 29 and 30.

FOOTNOTES

[1]Only recently nomarchies (large geographic departments) were given some funds to be allocated at their discretion, and mostly for public works projects.

[2]George Coutsoumaris, The Morphology of Greek Industry (Athens: Center of Economic Research, 1963), chap. 4.

[3]Since there are absolutely no data suggesting the magnitude of social costs involved, this analysis will proceed without further reference to them.

[4]Note that regions are said to specialize while industries are said to localize.

[5]Greece has inherited from France an excessively centralized administration. Although the country is divided into 73 eparchies (provinces), 53 nomoi (the equivalent of the French arrondisement) and 10 regions, all authority is confined to Athens. The bulk of civil servants is also in Athens leaving minor officials that perform minor functions out of the GAR. Civil servants are employees of the Ministry of the Interior and elected officials of the municipalities serve literally at the pleasure of the State that has dismissal authority over them. Peace-keeping forces are also under central authority. Of the above civil subdivisions only nomoi maintain some form of bureaucratic structure. Eparchies are extinct entities while regions have statistical existence only. For a critical review of the Greek public administration system see G. Langrod, Reorganization of Public Administration in Greece (Paris: Organization for Economic Cooperation and Development, 1965).

[6]Most of the statistical information on Greek migration is drawn from Ministry of Coordination, Central Service for Regional Development, "Regional Trends and Targets in Supply of and Demand for Manpower," Athens, 1968. (Typewritten.)

[7]The Greek definition of an urban place requires a town of 10,000 inhabitants or more. By comparison, an urban place in the United States is one of 2,500 or more inhabitants.

[8]Coutsoumaris, The Morphology, p. 118

[9]This percentage stands for gross value of industrial product, since no data are available for industrial output in 1963.

[10]A complete breakdown of localization coefficients, by industry, will be given in the following unit of this chapter.

[11]Center of Planning and Economic Research, Draft of the Five-Year Economic Development Plan for Greece, 1966-1970 (Athens: 1965), p. 146. This plan, as well as the Center of Planning & Economic Research, were abolished. The former was superseded by the 1968-72 Plan while the former was incorporated into the Ministry of Coordination. Both by the present regime.

[12]On the contrary, regions that consistently lose population suffer reciprocal per capita income reductions. This is because in the case of Greece skilled and semi-skilled labor migrates. Transoceanic emigration involves largely skilled workers.

[13]Social amenities, a highly localized capital market, and entrepreneurial conservatism towards risk assuming, have been found to be some of the main reasons of why industry originates and remains in Athens. See, A. P. Alexander, Greek Industrialists (Athens: Center of Planning and Economic Research, 1964), chaps. IV, V, and VI.

[14]The main reason for both the low productivity indices and the interregional differences is found to be the basis in the country's olive products production suffered in 1962. In the following year, 1963/64, as per Table 20, the indices are "normalized."

[15]The hospitals in the GAR have a much larger capacity, as the number of beds per 10,000 population suggests, to compensate it for its limited number.

[16]Teachers are State employees (under the Ministry of Education & Religion) and as such they are continuously reassigned to various localities. The Ministry's authority could be, and is, used to maintain "desirable" pupil/teacher ratios among the regions.

[17]This entire area has been carefully researched and established by Coutsoumaris, The Morphology, chap. 4.

[18]Ibid., pp. 137-138.

[19]Ibid., pp. 133-136.

[20]This condition must be modified to take into account the cost (see subsidy) of averting further social losses.

[21]G. Hiotis, "The Policy of Regional Development" (in Greek), unpublished report, Ministry of Coordination, 1968. Also, Bernandwetgel, "The Motives for the Promotion and Development of Regional Industry" (in Greek), unpublished report, Ministry of Coordination, 1968. Both papers are said to be confidential and written explicitly for intra-Ministry use.

[22]There is no shortage of living space in the GAR that could conceivably give rise to environmental and social costs. In 1961, population densities in the Athens Basin alone were about 54 persons per hectare which are roughly one third of other truly congested cities. Doxiadis estimates that the nomos of Attica could accommodate about 15 million people at a density of 92 persons per hectare. See, "The Capital of Greece," Ekistics (July, 1966).

[23]A major influence on government policy has been a report published in 1940 by the Supreme Economic Council and titled The Problem of the Industrial Concentration in Greece (in Greek).

[24]Bernandwetget, The Motives, p. 8.

[25]A survey of entrepreneurial attitude toward the tax inducements revealed that the general feeling was that the gains were insufficient to compensate industrialists even for the administrative inconveniences for relocating from Athens. See B. Ward, Greek Regional Development (Athens: Center of Planning and Economic Research, 1963), p. 101.

[26]See, C. Himos, Greek Legislation for Manufacturing and Handicraft (Athens, 1962, in Greek), p. 163.

[27]Center of Planning and Economic Research, The Effectiveness of the Tax Incentives in Greece and Some Proposals for their Improvement (in Greek, Athens: 1967).

[28]The $2,000 limit was also abolished so that all profits became subject to the tax credit.

[29]The lack of a truly spatial graduation makes it extremely difficult to measure the effectiveness of the program. Some rough estimates indicate that about 10% of the GAR's industrial firms responded to Decree 4002/1959,

although the GAR's share of the country's industrial firms increased from 85% in 1961 to 86% in 1966. However, it is not certain how much of the 10% response located in the GAR's periphery.

[30]Center of Planning and Economic Research, The Effectiveness, pp. 37-38. This argument is based on the fact that other independent to the tax incentives, variables explain all of the fluctuations in private investment levels so that little, if anything, can be said to be the result of the incentives.

[31]Ibid., p. 40.

[32]About 30-35% of total investment in manufacturing and mining can be said to have been motivated by the tax incentives. However, total investment includes all activities of which manufacturing is the least important both in amount and profitability. Housing and commerce are the largest components.

[33]Greek planning authorities admit that, "the overall impact of the tax incentives on the spatial structure of investments does not appear to be of a decisive nature." Ibid., p. 48. Moreover, this is further verified that the creation of "decentralized" jobs in most industries was so low that "provincial" employment failed to keep up with national growth.

[34]Based on figures in Bernandwetgel, The Motives, and Center of Planning and Economic Research, The Effectiveness.

[35]This point is also raised by official planning sources; Ibid., p. 50.

[36]Unfortunately, the bulk of Greek statistics is not reliable for the period before 1958 while post-1963 data are not available yet.

[37]If some independent developments like the establishment of the ESSO-PAPAS industrial complex in Macedonia, the expansion of the oil refinery complex in Skaramagas, and other public ventures are excluded, very little remains, if any, to be attributed to the State's decentralization policies.

[38]In a subsequent section of this chapter, shifts in industrial employment will be decomposed into their growth, mix and regional share components.

[39]Unity denotes that the regional percentages of urban population and industrial employment are equal to the nation's.

[40]The homogeneity of the nine regions is more evident when other structural characteristics are measured.

[41]The GAR grows by decree that allows outlying municipalities to be incorporated into the GAR. This incorporation is made by extending the so-called "city-plan" to cover communities that have attained certain densities. Once more territory is added to the GAR, urban services are extended to it at very low cost that precipitates further growth and development. For example, the Government, by Obligatory Decree No. 473/1968, annexed two municipalities to the demos of Athens and consolidated five others within the GAR's boundaries.

[42]Autocorrelated variables were removed.

[43]Except in industry (34) for which the nation registered an absolute loss.

[44]This is known as the Florence localization coefficient formula, see P. S. Florence, et al., "Measures of Industrial Distribution," in Industrial Location and National Resources, United States National Resources Planning Board (Washington, D.C.: U.S. Government Printing Office, 1954), chap. 5.

[45]Table 37 substantiates this by showing that the Greater Athens Region became more specialized.

[46]The relative insignificance of the locational shifts is further evidenced by the fact that an increasing number of new plants locates in the GAR than in the other nine regions combined (see Table 39).

[47]See H. Perloff, et al., Regions, Resources and Economic Growth (Baltimore: Resources for the Future, Inc., The Johns Hopkins Press, 1960), chaps. 3 and 5.

[48]Regional share shifts are better known as differential shifts and industrial mix effects as proportionality shifts. Ibid., p. 71.

[49]Ideally, industrial complex analysis should be used to explain the shifts, provided the necessary information is available. Otherwise, shift-share analysis, by itself, does not explain cause-effect relationships.

[50]This is so because the sum of the net relative change in total regional employment must be equal to zero so that national growth equals total actual change, for all regions. In Table 40, because of considerable rounding, the latter exceeds the former by 373 workers, or a 0.6% error.

[51]A negative industry mix essentially denotes the amount of extra growth to bring a particular industry at par with growth in total manufacturing.

[52]G. Haniotis, The Industrial Sector of the Greek Economy, 1960-1970 (Athens: Ministry of Coordination, 1962), p. 29.

[53]Employment in firms of 20 workers and over decreased from 35.5% to 33.5% in industry 20. Industry 23, for the same size range, decreased 13.3% to 9%, and industry 26 from 32.8% to 14.8%. In all cases firm size 0-5 workers gained the employment losses occurring in the upper firm sizes.

[54]G. Haniotis states that for every dollar of domestic output in chemicals about $82.6 is imported. Ibid., p. 121.

[55]The horizontal sums should be equal to zero, taking into account rounding, etc.

[56]Less industrialized regions are in a position to "escape," in a sense, from interregional comparisons of this sort, since they are less subject to cyclical fluctuations.

CHAPTER IV

CONCLUSIONS

Several criteria have been proposed upon which decentralization could be assessed. A prerequisite for contemplating regional decentralization is the demonstrable inefficience of a particular pattern of regional concentration or its undesirability from a social, political or military standpoint. Purely economic considerations require that the amount of regional alteration be systematically compared against pertinent costs, both program and social costs, and benefits. Conversely, noneconomic motives for decentralization must be primarily concerned with the rate of regional alteration since rapid decentralization can lead to serious problems of dislocations, the destruction of old and subsequent creation of new political balances, and, more importantly, to strategically undesirable defense patterns.[1]

The complete model of regional decentralization contains the following set of criteria: First, criteria determining the efficacy of decentralization, second, the method, and third, the efficiency of the method employed.

It was suggested that the efficacy of decentralization depends on the dynamic relationship between the productive versus the nonproductive segments of the total

investment budget and the long-run impact of this relationship on national growth and development. Countries with Pareto-type of city size distributions are especially likely to find that continuous urbanization along one or more "growth poles" imposes unusual burdens on their investment budget. Whenever infrastructural investments begin to take place more rapidly than urbanization rates, and given that there are substantial investment opportunities, decentralization becomes an attractive policy alternative.

Subsidization is an effective method only when an increase in the scale of agglomeration produces more social losses than private losses (locational diseconomies--Possibility 1 on page 28). In all other cases subsidies must equal the sum of locational economies that new or already established firms would have to forego in altering their locational preferences. As long as this is the case, decentralization is premature and not socially desirable and the agglomeration has not attained its critical mass.

The efficiency of method depends on a) induced changes on the system's locational structure and b) induced investments as a proportion of subsidies or government revenue losses.

The formalization of this model along operational lines is necessary to evaluate decentralization policies. Difficulties arise when various countries resort to decentralization without establishing either its efficacy or its efficiency. Greece is the prime example.

The salient characteristics of the decentralization aspect of European regional policy are the following:

First, no European nation with an established decentralization policy has demonstrated the existence of social costs that can be directly attributed to urban-industrial size.

Second, there is no evidence, implicit or explicit, suggesting that urban-industrial agglomeration levels in Europe interfere with the developmental process.

Third, urban-industrial agglomeration levels in Europe do not correspond with degree of commitment to decentralization.

Fourth, socialist countries have demonstrated a higher degree of objective attainment of regional decentralization than have market economies in spite of the mobilization of fewer resources.

Fifth, the inconclusiveness of the decentralization policies in market economies can be attributed to the weak measures employed and the difficulty of countervailing market processes favoring agglomeration.

Sixth, whereas capitalistic involvement in decentralization is based largely on city-size considerations, this concept is given a broader interpretation by socialist countries in the form of social justice.

Seventh, industrial subsidies seem to be the only practical means of pursuing decentralization to the virtual exclusion of the use of taxes, zoning, and other prohibitive

legislation. Only in France is there a moderate use of punitive or prohibitive measures to prevent industrial concentration.

The examination of the Greek regional decentralization policies has yielded the following findings:

First, the most important manifestation of regional problems in Greece is the existing disparity in incomes, levels of living, social overhead, and employment levels between the Greater Athens Region and the rest of the country. These suggest that Greece should have been involved with regional integration rather than equalization policies.

Second, the degree of the GAR's concentration of economic activity is of a magnitude that it has restraining effect on the growth patterns of the other regions. Population movements are especially critical to Greek geographic balance since the GAR seems to be absorbing a continuous stream of migrants from the other regions thus causing several of them to remain in a constant state of depopulation. On the assumption that the most dynamic elements of the population migrate, regional capacities for eventual development are greatly diminished.

Third, the GAR is the only region where nonagricultural demand for labor has increased during the last decade thus attracting available skilled and semi-skilled labor from the rest of the country. All regions, in fact, exhibited negative employment shares in all industries.

Fourth, the rate of the GAR's expansion has produced

the conditions by which per capita incomes in the rest of the country will not catch up with the national average. Thus, the GAR's effect on the rest of the country can be described as cumulative where income disparities are expected to widen with time.

Fifth, given Greece's lack of resources, the market orientation of its industry, and the attained size of the GAR, Athens' locational pull absorbs, and is likely to continue absorbing, most of the country's industrial activity. This greatly reduces the effectiveness of potential regional integration measures since investment opportunities are few outside Athens and the provision of infrastructural capital cannot by itself attract economic activity. The country's centralized administrative system, the vast concentration of banking, financial, managerial, and educational resources in Athens, and the heterogeneity between Athens and the rest of Greece provide for little or no interaction among the regions which is necessary for a regional development program.

Sixth, decentralization, Greece's only regional policy in operation, has demonstrably failed to have any impact on the country's locational pattern. The tax subsidies program was especially inadequate because of a) low tax benefits that fell well below levels required for minimum response, and b) spatially undifferentiated tax rates that were not based on a concept of distance. It was found that not only the program failed to arouse

response but it may even had the opposite results. Revenue losses were estimated to be extremely high and considering the absence of an appreciable impact on locational preferences, it may be concluded that only small and inefficient firms reacted to the program.

Seventh, as long as the GAR continues its dynamic expansion, decentralization is the least desirable policy for the country's regional development. Specific policies to check migration and promote long-term agricultural development may have a greater promise for the lessening of the country's regional inequalities.

FOOTNOTES

[1]The Accelerated Tax Amortization Certificates have been employed in the United States to disperse industry for defense reasons. See, A. Melamid, "Economic Aspects of Industrial Dispersal," Social Research, XXIII (Fall, 1956), 313-315.

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