

ON THE REGIONAL DIMENSIONS OF ROSTOW'S THEORY OF GROWTH

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Rostow's approach to economic development, summarized in *The Stages of Economic Growth*, involved an economy passing through a sequence of well-defined stages. This theory of growth was primarily concerned with the national economy. There were, however, more than a few references to regions, although these were not elaborated upon or explored in detail. The concern here is with examining the possibility that the Rostow analysis might also have a relevance at the sub-national or regional scale. This possibility is considered in terms of three distinct perspectives: the regional (where the emphasis is on the individual region, with no attention given to the rest of the nation); the multiregional (the focus being on the various regions that comprise the nation); and the interregional (which examines the economic relations among regions within a nation).

1. Introduction

There can be little doubt that the work of Rostow (1953, 1956, 1960a) has had a considerable influence in the fields of development economics and economic history. His best-known work, however, is *The Stages of Economic Growth* (Rostow, 1960b), which drew extensively on earlier studies. It is perhaps best summarized by the first few sentences of the introductory chapter: "This book presents an economic historian's way of generalizing the sweep of modern history. The form of this generalization is a set of stages of growth [traditional society, preconditions for take-off, drive to maturity, and age of high mass consumption]. I have gradually come to the view that it is possible and, for certain limited purposes, it is useful to break down the story of each national economy – and sometimes the story of regions – according to this set of stages" (Rostow, 1960b, p. 1). The approach gained a generally favorable reception in developing countries, though it attracted more than a little criticism elsewhere, perhaps the most fundamental being that of Baran and Hobsbawm (1961). In a subsequent volume edited by Rostow (1963), leading scholars of the day took turns at demolishing the Rostow edifice, with varying degrees of success, the criticisms relating to such issues as the feasibility of dividing economic history into stages, the notion of take-off, the timing of stages, the identification of leading sectors, etc. Rostow (1963, p. xiii-xiv) mused that such adverse reaction may have resulted from the feeling that "the introduction of a new concept (especially a new term) is an act of aggression against respected colleagues and friends."

The Strassmann (1964) review of this volume probably represents the most balanced, as well as the most thorough, of those that appeared.

But academic interest is fickle, and the passage of four decades has seen a fading of interest in Rostow's work, which has become somewhat eclipsed by the many subsequent theoretical contributions. Although more than a few specialists take the view that the Rostow approach is *passé*, it was only recently that a prominent exponent of development economics felt able to regard Rostow's approach as "one of the leading theories of economic development" (Todaro, 1997). An intriguing feature of Rostow's writings on economic development is the number of tantalizing references to "regions," including the one cited above. Unfortunately, regions are invariably referred to in passing, with no attempt at elaborating examples offered.¹ This hardly constitutes a criticism of Rostow's work, which was concerned with national economic development. It does, however, prompt the question as to whether the Rostow framework has a relevance at the regional scale. It is a matter of more than passing interest that no attempt appears to have been made to investigate the validity of the framework at a sub-national level. This may have been because regional analysts regarded the Rostow model as too general for their purposes. It seems more likely, however, that they took Rostow at his word, and viewed the framework as essentially national in scope. For whatever reason, a potentially interesting insight into the process of regional development has not been given the consideration that it probably deserves. Such a lacuna forms the basis of this paper, which attempts to explore the Rostow thesis in regional terms, and to relate this to existing frameworks of regional economic analysis.

2. Summary of Stages and Outline of Perspectives

2.1 Sequence of Stages

To quote Rostow (1960b, pp. 12-13) again: "These stages are not merely descriptive. They are merely a way of generalizing certain factual observations about the sequence of development in modern societies. They have an inner logic and continuity. They have an analytic bone-structure, rooted in a dynamic theory of production." The following paragraphs attempt to identify the more salient features of each stage.

Traditional society. At this stage, science and technology are sufficiently ill-developed that innovation, though it may occur, is not a regular feature of the economy. This imposes an obvious limit on the growth in productivity, so that per capita incomes continue to be at a low level. A high proportion of the resources available is expended on food supply, and what is not devoted to this, is often used for non-productive purposes, e.g., wars, religious observance, excessive consumption by privileged élites, etc. Accumulation of capital is at a minimal rate, and the forms of economic organization and production undergo little modification from one generation to the next. Effective political rule exists at the center, but this may be tempered to a considerable extent by powerful landowning interests which hold sway locally. Moreover, this stage represents one in which little encouragement is given to those individuals or groups that might initiate economic change.

¹ An important exception to this is his later discussion of the "regional take-offs" that occurred in New England, São Paulo and Manchuria (Rostow, 1978, Part Five).

Preconditions for take-off. It is during this stage that economic progress is deemed, for whatever reason, to be desirable and possible, at least by certain elements of society. It represents an era in which the comfortable certainties of the past are challenged. Among the requirements that have to be satisfied during this stage are the development of social-overhead capital in the broadest sense of the term, the rationalization and modernization of agriculture, along with the import of capital goods, this being facilitated by agricultural or raw-material exports. Each of these developments has the effect of increasing the net supply of capital. During this stage we observe the formation of commercial institutions and, in political terms, the emergence of an efficient nation state, along with the paraphernalia of government and administration.

Take-off to sustained growth. This stage, viewed by Rostow as the most critical and the most difficult to attain, is the one during which economic growth becomes the normal condition. For this stage to be achieved, there must be an increase in the rate of investment to 10.5-12.5% of the net national product (NNP).² There must also be the emergence of one (possibly more than one) leading manufacturing sector. Such a "primary growth" sector generally represents an industry employing the latest technologies, which has the capacity for stimulating "supplementary growth" sectors (via forward and backward linkages) and "derived growth" sectors which expand in relation to overall growth of the economy (Rostow, 1960a, pp. 299-300). An important feature of the leading sector is its ability to provide substantial external-economy effects. One further requirement that needs to be met is existence of an institutional framework which is adequate for supporting the leading sector and enabling the benefits of its expansion to be diffused throughout the economy. More generally, the take-off stage sees the establishment of conditions for the progressive absorption of capital, and sometimes an acceleration of population growth.

Drive to maturity. This stage typically begins some 20 years after the start of the take-off stage, the latter stage being of remarkably short duration. During this fourth stage the growth of the leading sector(s) tends to slacken, with other leading sectors assuming an increasing importance. Rostow (1978, Part Five) discusses this phenomenon at some length, drawing on evidence from twenty nations as diverse as Argentina and Taiwan. The distinguishing feature of the drive to maturity stage is that modern techniques of production are no longer confined to the leading sector(s) of the take-off stage, but exist in most sectors of the economy, sometimes being of greater technical sophistication than the earlier leading sectors. This development is facilitated by the emergence of mass education. Within society in general, growth, though not necessarily taken for granted, is accepted along with the disruptions and necessary economic and social adjustments that it brings in its wake.

Age of high mass consumption. A hallmark of the drive to maturity stage is the accumulation of a significant economic surplus. In the disposal of this, society has several choices open to it: the extension of social-welfare programs and social overhead capital; the striving

² This usually represents a doubling of the rate of investment which existed at the preconditions stage. Such an investment ratio, which is based on a marginal capital-output ratio of 3.5:1 and an annual population growth rate of 1-1.5%, is sufficient to yield an annual growth rate in net national product of around 2% (Rostow, 1960b, p. 41). Rostow argued that the investment ratio reached this level in Great Britain during the course of its take-off stage from 1783 to 1802. Such a level is consistent with the estimates of Feinstein (1978), but significantly above those provided by Crafts (1983). These latter estimates were constructed on the basis of gross investment and gross national product. A related discussion of this question is provided by Cairncross (1953).

for world power and prestige (usually through colonial acquisitions and the build-up of military power); overseas investment involving the export of capital and technical expertise; and finally the gearing of the economy around particular patterns of consumption.³ The first three possibilities generally result in a prolongation of the drive to maturity stage, while the selection of the fourth involves the economy entering the stage of high mass consumption. Usually emphasized at this stage is the growing importance of housing and consumer durables, but educational, recreational and health services also become increasingly prominent within the economy. It will be noted that whereas each of the four previous stages focuses on production (and overcoming the obstacles to this), the final stage is clearly concerned with consumption, although certain of the implications for production are considered.

Such a rudimentary sketch of the five stages hardly does justice to the richness of Rostow's analysis, but may help to convey the general thrust of the argument. Underlying the various stages (particularly the last three) is a "dynamic theory of production," involving a sequence of leading sectors. This is based on the hypothesis that eventual "deceleration is the normal optimum path of a sector" (Rostow, 1960b, p. 13). A number of factors on both the demand side and supply side cause any single leading sector to have a limited life, so that the overall rate of growth can only be sustained if the sector in question is replaced by other leading sectors. In certain respects, Rostow's emphasis on the disequilibrating effects of the leading sectors has several close parallels with the more prescriptive concept of unbalanced growth proposed by Hirschman (1956), these two lines of thinking (though contemporaneous) being largely independent of one another. In other respects, Rostow's approach contains features which have a resonance in what has come to be known as "new growth theory," e.g., the importance of increasing returns, the role of technological change, and the endogenous aspects of development (Lucas, 1988; Romer, 1986).

The appropriateness of segmenting the gentle unfurling of economic history into stages has been questioned, notably by Eucken (1951), whose objections were admirably summarized by Hoselitz (1960). In a related vein, Kuznets (1963, pp. 24-25) has listed five minimum requirements that need to be satisfied before a stages theory can be taken seriously: 1) the establishment of a set of features common to the economies experiencing a given stage of modern growth; 2) these features, when considered collectively, must be unique to a particular stage; 3) the relationship to the previous stage must be specified (the minimum set of developments that must occur before the close of the preceding stage); 4) the relationship to the following stage (the necessary developments that must occur to bring the stage to a close); and 5) a statement of the type of economies for which the particular features are being claimed. With some justification it can be argued that Rostow's stages theory comes close to meeting these requirements, although such a judgement is perhaps better left to readers who have pondered the writings of Rostow and Kuznets in this connection.

2.2 Perspectives to be Employed

The primary aim of this paper is to examine the Rostow framework at the regional scale, and this is approached by means of three distinct, though related, perspectives. The first, the

³ Rostow referred only to the first, second and fourth of these possibilities. The third is included, as this represents a further possibility for the disposal of the economic surplus.

regional, focuses on the individual region, with no direct reference to the national economy. The concern here is whether the regional economy passes through the sequence of stages identified by Rostow. In the second perspective, which is multi-regional in scope, a similar theme is explored in terms of the various regions that comprise a nation. The question is also raised as to how the different stages reached by the various regions at a particular point in time might be related collectively to the stage attained by the nation. A third perspective, perhaps the most important, puts the emphasis on exploring the national sequence of stages in terms of interregional economic structure.

With all three perspectives the question of what type of region is under consideration needs to be specified. Of the various definitions of an economic region that have been proposed, the functional or nodal region probably represents the most suitable. Such a sub-national entity has as its node a major urban center or metropolitan area, around which the economic life of the region revolves (North, 1955, p. 257). There is a strong complementarity of supply and demand relationships between the metropolitan area (usually a transportation focus) and the rest of the region, the latter part containing a rural population as well as an urban population, typically arranged in a hierarchy of centers. The nature and functioning of the nodal region is very much consistent with the requirement, suggested by Hoover and Fisher (1949, p. 178), that a region should represent "an area within which there exists an especially high degree of interdependence among individual incomes." It is this view of the region that will be employed throughout, along with the assumption that the region exists within a national system of regions. Two difficulties remain, however. One is that the region as defined here may display considerable differences in size from one nation to another. The second difficulty concerns the fact that regional boundaries may change over time, so that there is an obvious danger of imposing current boundaries on historical entities.

3. The Regional Perspective

The first perspective on the Rostow framework, which concerns the individual region, considers the extent to which Rostow's stages are able to cast light on the process of regional growth. There can, of course, be no *a priori* expectation that what might represent a reasonable account of development within a nation should necessarily be valid at the level of the region. Indeed, physical and biological systems abound with examples of explanatory factors being of critical importance at one scale yet of minor significance at a different scale. Nevertheless, particular regions of Europe and the older parts of the U.S., which emerged under conditions of relative economic closure, appear to follow the Rostow sequence of stages fairly closely. Examples include Westphalia in Germany, Central Scotland and Northwest England in the U.K., as well as New England and the Mid-Atlantic states of the U.S. (North, 1963), certainly up to and including the drive to maturity stage. For other regions, however, especially those within the so-called "new countries" (countries of European settlement), the Rostow framework is only applied with difficulty. In such cases the problem appears to lie in the nature of the criteria used to define the various stages. We first consider the initial stage, where the definition of traditional society presents certain difficulties. The traditional society in this context has to be defined either in relation to the organization of an indigenous population or to the conditions existing during the very early years of colonial settlement, prior to the commencement of economic development. In either case the economic and social reality may well differ substantially from that obtaining in Rostow's characterization of traditional society.

Taken alone, this discrepancy would not appear to be especially important. However, further difficulties may arise with respect to the preconditions for take-off, and this has a particular relevance for regions in "new countries." For many individual regions, which were preparing for subsequent development and which could therefore be said to be at the preconditions stage, the Rostow criteria either do not apply or are not relevant. This was certainly the case with regard to the modernization of agriculture. In the opening up of the Midwest and later the Great Plains of the U.S., for example, modern agricultural techniques were applied from an early period, while for other regions, whose subsequent growth was based on forestry or mining, the modernization of agriculture was relatively unimportant. With regard to the development of social overhead capital and the import of capital equipment, these were frequently organized and financed by extraregional agencies, often after active lobbying by the regions concerned (North, 1955, p. 246). Furthermore, the argument that an established system of government and administration at the regional scale represented an equivalent to the Rostow requirement would be a weak one. Developments in this connection were usually of a nature which transcended the individual region. For many regions the preconditions stage was essentially a period during which the region was effectively settled, often in anticipation of interregional or international transportation links. The stage usually came to an abrupt end, once such investment was in place.

The problem of Rostow's definitions of the stages becomes more serious when we consider the take-off stage of the regional economy. The existence of a level of investment of around 11% of net regional product (NRP) can be accepted, as can the emergence of a leading sector. However, Rostow's requirement that this must involve a manufacturing activity which also encourages other indirect effects is simply not always reflected at the regional scale. Many regions achieve take-off (in the Rostow sense of sustained growth) without the leading sector representing manufacturing.⁴ In this connection, North (1955) has argued that the key determinant of a region's development is the successful establishment of an export base, regardless of whether this involves manufacturing. This suggests that at the regional scale, Rostow's leading sector might be interpreted as the dominant element of the export base, the expansion of which is likely to depend on technological sophistication and even technological leadership. A further problem exists, however. While the leading sector would (as required) have an indirect impact on the regional economy, this would largely involve the development of Rostow's "derived growth" sectors (residential or regionally-oriented activities, concerned with consumption and with supporting the leading sector) and not his "supplementary growth" sectors based on inter-industry linkages. Such linkages to the leading sector of the regional economy could have emerged at this time, but these would typically be of an interregional character. The possibility, even likelihood, of this external connection from the leading sector during the regional take-off stage represents a significant departure from Rostow's national take-off stage, where such linkages are predominantly internal.

Turning to the drive to maturity stage, we find that conditions within the regional economy correspond more closely to the Rostow definition. Certainly, the application of modern

⁴ Admittedly, Rostow (1960b, p. 39, footnote) defines manufacturing extremely broadly, so as to include timber exploitation and meat production, for example. The reasons for this stretching of the definition of manufacturing are not clear, except for the fact that the take-offs in such nations as Sweden and Australia are not easily related to the growth of conventional manufacturing. Problems of classification of economic activity in a regional context are discussed by Parr (1999a).

techniques to the rest of the economy tended to be common. This often involved the build-up of linkages to the original export base, initially as import-substitution activities but subsequently as part of a broadening of the regional export base (Parr, 1999a). In one major respect, however, the experience of regions may depart from the Rostow framework. This concerns the emphasis placed on the capital-intensive nature of production and the utilization of mass-production techniques. These need not be important features of individual regions at the take-off stage, particularly where the export base is centered on agriculture and resource exploitation or even certain types of manufacturing.⁵ In the final stage, the age of high mass consumption, the regional economy tends to exhibit most of the features identified by Rostow at the national level, but more with respect to consumption patterns than in terms of the sectoral structure of production. Thus there is no necessity for consumer goods to be produced within the region, although this tends to be the case for certain consumer services, e.g., education, health care, housing, etc. In keeping with the North (1955) argument, high levels of consumption within a region are made possible by its ability to sustain a successful export base in other lines of activity.⁶ The fact that consumption within the region may rely heavily on imports, represents a further departure from the Rostow framework, in which there is no dependence on externally-produced consumer goods and services at this final stage.

It is certainly possible to find individual regions whose passage through the sequence of stages closely resembles that of the nation. For other regions, however, the passage through the sequence (to the extent that this exists at all) is less dramatic, less well defined, than that described by Rostow for a nation. Moreover, although a region may be characterized as being at one of Rostow's stages, the nature of this stage may depart significantly from his definition of that stage for the nation. Such a difference not only tends to weaken the generality of the Rostow argument, but also draws attention to the openness of the regional economy, relative to the national economy. The following comment by Stabler (1968, p. 13, footnote 7), in a somewhat different connection, is apposite: "even in the heyday of free trade and *laissez-faire*, the nations of the world resembled closed economies" so that "to base the theory of regional development in an open economy on the pattern experienced in a system of partially closed economies may not be entirely valid."

If the Rostow framework is to be applied at the regional level, there is a need for the stages to be defined in more general terms, so as to accommodate the distinctive nature of the regional economy and the diversity of forms which regional development may take. Related to the relative openness of the region is the question as to whether a particular stage may be skipped. In the Rostow analysis this possibility was not discussed. Indeed, the nature of Rostow's definitions of national stages virtually precludes this.⁷ In the case of a region, however, the possibility is somewhat greater. It is not difficult to isolate cases where either the preconditions stage or the drive to maturity stage was skipped or was of very short duration. The skipping of the take-off stage is difficult to imagine, however, even though for certain regions the character of this stage may not be as striking as the take-off stage nationally.

⁵ This would be the case where the growing manufacturing sector had a high handicraft component, as in particular regions of Germany and Italy during the nineteenth century.

⁶ Where this condition is absent, relatively high levels of consumption in less successful regions might be maintained by means of transfer payments from a national government. This will be considered further in Section 5.

⁷ Rostow (1960b, p. xii and 1978, p. 51) actually allows the opposite phenomenon (namely, the overlapping of stages), although for the large majority of cases there is neither the skipping nor the overlapping of stages.

4. The Multi-Regional Perspective

The argument of the previous section may be extended to consider the various regions that comprise a nation. The concern is now with all regions passing through the sequence of stages, which are now defined more broadly (we assume the availability of an acceptable set of criteria for each regional stage). It is usually the case that the regions of a nation reach a given stage at different times, the difference being sometimes considerable. For example, Rostow (1960b, p. 38 and p. 67) noted that for the U.S. the take-off stage commenced as early as the 1820s in New England but as late as the 1930s in the South (the take-off for the nation as a whole being in the 1840s).⁸ In a similar fashion Hoffmann (1963, p. 96) drew attention to the differences in timing of the preconditions for take-off and the take-off stages among the regions of Germany in the nineteenth-century.⁹ While a few regions may be in the forefront of change, in the sense that these always reach a given stage relatively early, others will consistently be late. It is much more likely, of course, for a region to have a mixed record, being ahead of the nation over certain extended periods and behind over others.

Given the fact that regions pass through the sequence of stages at varying rates, it follows that at any point in time, the various regions will be at different stages. Furthermore, the variability among regions in terms of the stage attained is not likely to be constant over time. This is indicated in Table 1 for five arbitrary points in time. The table is presented as an illustrative example for a 10-region nation, with no consideration given yet to the relative importance of the various regions. Reading across a given row from the left, we have a particular time t and then a series of values, each referring to the number of regions that has attained a particular stage (defined in a manner appropriate to the regional scale). It can be seen that at time t_1 and also time t_5 the variability is relatively low, whereas at the other times

Table 1. Variability in Stages attained by Regions at Different Times

Time	Number of Regions at Given Stage ($N=10$)				
	TS	PC	TO	DM	MC
t_1	8	2	0	0	0
t_2	2	6	2	0	0
t_3	2	4	3	1	0
t_4	0	1	3	5	1
t_5	0	0	1	2	7

TS = traditional society; PC = preconditions for take-off; TO = take-off; DM = drive to maturity; MC = age of high mass consumption.

⁸ In the case of the South this starting date for take-off seems surprisingly late, although it may have been accurate for certain parts of the region. As will be seen shortly (though at a different scale), the problem of averaging over areas with different levels of development is a difficult one.

⁹ Even though German unification was not complete until 1871, the various nominally independent states could be validly referred to as "regions" after the creation of the *Deutscher Zollverein* in 1834, and certainly after the standardization of currencies in 1857. The situation in Germany may be contrasted with conditions in Italy prior to effective unification in 1860.

the variability is more pronounced, especially at time t_3 . Some of the reasons for the changing temporal pattern are discussed in the next section. We may note in passing that at any point in time the variability in stages among regions within a nation is likely to be less than the variability among nations, due largely to the fact that intranational frictions to economic interaction and the transmission of growth are less formidable than international ones.

Table 1 simply provides an indication of the qualitative variability in the stages attained by individual regions at particular times, this being an important facet of the second perspective. The question now arises as to how the different stages attained by the various regions at a given point in time might be related to the stage reached by the nation as a whole. A given stage reached by the nation must, after all, represent a summary of the stages attained by the constituent regions. Consideration of this question is thus necessary as a check on the accuracy with which the various regions have been identified as being at particular stages. One preliminary approach involves the estimation of some "multi-regional average stage" based on the more general definitions for the regional stages, as discussed in the previous section. This is then related to the national stage, identified according to the Rostow criteria.

The procedure involves defining the sequence of stages in continuous terms as a series of adjoining ranges of values, where the more advanced a stage, the higher will be its associated range of values. There is no reason to suppose, however, that the various ranges will be of equal length. For each region a value is assigned, which corresponds to the stage attained or, more precisely, the position within that stage. Thus a region at the beginning of the preconditions for take-off stage, for example, will have a lower value than a region approaching the end of this stage. The value assigned to each region is then weighted to reflect the region's position within the national economy. As to the weighting system employed, the use of regional shares of national population or employment would clearly be inappropriate. Regional shares of NNP or of net investment nationally would represent better systems of weighting, although these may not be wholly satisfactory, as additional factors intervene. One such factor concerns the location of the region within the national system of regions, as measured, for example, by centrality, nodality, connectivity, population potential, or distance from a major international port. Another factor, only measured with some difficulty, is the region's relative importance within the nation in terms of economic power or decision-making capacity, both public and private, as well as its capacity to innovate and to display entrepreneurial vigor. It will be recognized, of course, that this procedure of assigning values to regions and then weighting these is necessarily subjective.

Once the value for the multi-regional average stage has been estimated, it is compared to the value for the national stage (each national stage has the same range of values as the corresponding regional stage).¹⁰ Assuming that the definitions of the regional stages are valid and that the national stage has been correctly identified and given an accurate value, any significant difference between the multi-regional average value and the national value would be due to one (or some combination) of two factors: an erroneous assignment of a value for the stage attained in the case of one or more regions; an inappropriate system of regional weightings.¹¹

¹⁰ The standard deviation of the multi-regional average provides a convenient measure of the extent of the variability in the stages attained among the constituent regions of a nation.

¹¹ The possibility has to be entertained that the multi-regional average value might approximate the national value as a result of the two types of error canceling out each other.

Without this admittedly difficult exercise of relating the multi-regional average stage to the national stage, the second perspective is of limited value, being merely an unrelated series of conclusions about conditions within the various regions of a nation at a particular point in time. It is worth mentioning that for certain nations the strict application of the Rostow criteria in the definition of regional stages would almost certainly cause the multi-regional average value to differ from the national value, generally in a downward direction. The desirability of defining the regional stages in a more general manner again becomes apparent.

This multi-regional perspective on the Rostow framework suffers from certain drawbacks. Since it takes an essentially bottom-up view of the economic system, it inevitably carries the implication that the national economy is little more than an aggregation of the various regional economies, which is obviously not the case. In economic terms, as in many other respects, the nation is not simply the sum of its regional parts. Relatedly, the second perspective tends to convey the impression that the regions represent a set of autonomous economic units, also an inaccurate characterization of actual conditions. Most importantly, this perspective fails to emphasize the existence of powerful economic relationships among regions, and in particular a given region's capacity to influence other regions by means of various spillover mechanisms. For these reasons it is necessary to employ a further perspective in examining the Rostow framework at the regional scale. As will be seen, this involves an essentially top-down view of the national economy.

5. The Interregional Perspective

In contrast to the first and second perspectives, which sought to determine whether the Rostow framework could be applied at the regional and multiregional scales, the third perspective explores the interregional implications of the framework. And whereas the second perspective was concerned with the mere co-existence of regions during the process of national economic development, attention now turns to the economic relations which are present among the regions of a nation. Building on the two previous perspectives, the concern is with how regions are interrelated with respect to trade patterns, migration flows, capital movements, government transfers, etc. Consideration is also given to differences in regional economic performance and welfare levels, as well as to the spatial structure of regional economies. This third perspective examines each of Rostow's national stages in terms of an interregional scenario or interregional outcome. The following paragraphs provide an account of the changing nature of such outcomes for a nation of the developed world which has reached the final stage.

5.1 The Early Stages

The distinguishing feature of the traditional-society stage is the high degree of economic closure of each region and the resulting low level of interregional interaction. Within the nation the bulk of trade is of a local or intraregional character. Since the national economy (if such a term can be meaningfully employed at this stage) is static or growing at a very slow rate, the level of interregional income inequality remains virtually unchanged at a relatively low level. At the regional level, there is little urbanization and regional spatial structure is characterized by a relatively low level of concentration.

Eventually, the nation moves into the preconditions for take-off stage. Among the more important general developments are the laying down of social overhead capital, improvements in agriculture (which have the effect of releasing labor for other types of economic activity), the emergence of an entrepreneurial class, the formation of financial institutions for mobilizing savings, and the gathering pace of industrialization. These developments do not take place evenly among the regions: some regions reach this stage before the nation as a whole, while others remain at the traditional society stage. As Rostow (1978, p.385) pointed out, "Especially in early stages of growth, some [regions] may be only slightly affected and left as quasi-traditional backwaters while growth proceeds rapidly in regional industrial enclaves," although these enclaves may not constitute regions, as defined earlier. The determining factors here tend to be the availability of raw materials and energy sources, the existence of a large regional market, favorable access to extraregional markets, as well as established mercantile connections with other regions and nations. Interregional trade, based on emerging regional specializations, becomes more pronounced, though still at a relatively low level, and there is a general increase in the openness of each region.

Since this preliminary phase of economic development tends to be of an uneven nature, a core-periphery contrast begins to manifest itself, an occurrence which may be encouraged by the fact that the general improvements in transportation within the nation as a whole tend to have a differential impact on regions. More generally, the level of interregional income inequality tends to increase, in keeping with the temporal pattern discussed by Williamson (1965). In addition to the growing differences among regions, development tends to occur unevenly within those regions that have reached the preconditions stage. Although there is an expansion of urbanization, urban growth tends to take place selectively, leading to increased interurban concentration (i.e., city-size inequality), this being part of the more general trend toward concentration of the regional spatial structure.¹²

5.2 The Take-off Stage

The take-off stage nationally is associated with a relatively small number of regions each acquiring a leading sector of economic activity, which may well vary from region to region (the United Kingdom was unusual in this regard, since more than "a relatively small number of regions" was involved). It is possible that certain regions reach this stage of high productivity while the nation as a whole is still at the preconditions for take-off stage. The leading sector, which forms the basis for each regional export specialization, bears more than a passing resemblance to the Perroux (1955) notion of an *industrie motrice* or propulsive industry, by virtue of its association with decisive entrepreneurial activity, its capacity to generate and absorb new technologies, its propensity to innovate, its position of economic dominance, and its ability to stimulate forward and backward linkages (although as argued in Section 3, these may be located in other regions).¹³ Moreover, such a propulsive industry forms the basis of a

¹² The level of concentration in the spatial structure refers to the unevenness with which economic activity, employment, population, etc. are distributed throughout the region. There exist various standard methods for measuring this unevenness, and in the case of a well-defined nodal region it is possible to employ the concept of a regional density function, from which indices of concentration may be derived (Parr, 1987; Parr and O'Neill, 1989).

¹³ Although the take-off stage at the regional level is being defined in less restrictive terms than Rostow, the

related Perroux concept: the *pôle de croissance* or growth pole. Although this was initially portrayed as a dynamic entity in abstract economic space, the influence of internal economies of scale and other agglomeration economies provides the concept of a growth pole with an obvious territorial dimension, something that Perroux (1955, p. 317-318) clearly recognized (Parr, 1973). It is factors of this type, together with the externality implications contained therein, which underlie the phenomenon of increasing returns and the tendency to interregional dualism analyzed by Krugman (1991a, 1991b, 1991c).

The take-off stage and the interregional repercussions of this can also be viewed in terms of the familiar cumulative-causation mechanism proposed by Myrdal (1957). Boiled down to its essentials, the process occurs in the following manner. Certain regions gain a start in the development process as a result of particular initial advantages such as resource endowment, entrepreneurial capacity, a location in the vicinity of political and administrative power, access to national and international markets, etc. These developments in the leading regions attract public expenditures on infrastructure which increase the productivity of private investment, a process that is further enhanced by inflows of capital and skilled labor from lagging regions. The effect of such patterns of expenditures and factor flows is to deprive the lagging regions of the vital ingredients for development. In this way development in the leading regions creates so-called "backwash effects" in the lagging regions.¹⁴

Following the Myrdal line of argument, it can be expected that during the take-off stage nationally the core-periphery contrast will be intensified, and interregional welfare differentials will increase. Nevertheless, development in the leading regions may help the lagging regions via what Myrdal called "spread effects." These include increased external demands by the leading regions and the remittance of earnings from these regions to the lagging regions (Gaile, 1980). While developments of this kind tend to be more than offset by the backwash effects, the presence of such spread effects may help to draw the lagging regions into the pre-conditions for take-off stage. Within each region that has reached the take-off stage the continued pattern of differential urban growth (in particular, the emergence of growth poles) results in a still higher level of interurban concentration and thus an even more concentrated pattern of regional spatial structure.

5.3 The Later Stages

The national economy next enters the drive to maturity stage. Regions which were early into the take-off stage are frequently the ones which are early into the drive to maturity stage, sometimes reaching this stage before the nation as a whole, a further example of the process of cumulative causation. There is no inevitability to this, however, and one or more regions which were late into the take-off stage may be early into the drive to maturity stage. For regions that have reached this stage there is a general broadening of their respective economies. As described in the first perspective, this might be due to the growth of import-substitution activities as regional demand rises and also (but generally later) a diversification of the export base, either process sometimes involving forward and/or backward linkages from the

stronger Rostow criteria tend to apply in those regions which are contributing significantly to the take-off stage nationally, particularly where the leading sectors of these regions involve manufacturing.

¹⁴ Hirschman (1958) uses the terms "polarization" and "trickling down," which correspond broadly to the Myrdal terminology of "backwash" and "spread" employed here.

pre-existing export activity (Parr, 1999a). The lagging regions generally achieve take-off during this national drive to maturity stage, an occurrence encouraged by further spread effects such as the increased food and raw-material requirements of the leading regions, improvements in the terms of trade of the lagging regions, as well as capital inflows from the leading regions (Hirschman, 1958).

During this fourth national stage interregional interaction, in the form of trade and factor movements, reaches a very high and hitherto-unknown level of intensity. With some possible exceptions modern methods of production tend to be applied throughout most of the nation, and the remaining vestiges of economic dualism largely disappear. National economic integration, both interregionally and intersectorally, can be said to have been attained (but the extent of this will subsequently increase). It is now that the backwash effects tend to be neutralized by spread effects, so that the core-periphery contrast and the level of interregional income inequality, though probably at their highest levels historically, are increasing very slowly, if at all. For those regions that have reached the drive to maturity stage the trend toward increasing concentration in regional spatial structure continues. Within the major metropolitan areas of these regions, however, decentralization or suburbanization tends to occur, although this is very much dependent upon improvements in urban transportation.

The final national stage (the age of high mass consumption) involves the large majority of the regions having attained a high level of NRP per capita, with a significant share of household expenditures directed to consumer durables and (later) education, health care, leisure pursuits, etc. It is possible for several regions to have reached this stage during the previous national stage, with a few others still at the drive to maturity stage. This tends to be less likely, however, and for reasons that are not entirely clear the national economy only reaches this stage once most of the regions have come to the end of the drive to maturity stage.¹⁵ Such a tendency represents a further distinguishing feature of the age of mass consumption (recall that in the case of the take-off stage, for example, individual regions may attain this stage well before or well after the national economy has). Although consumption levels within all regions tend to be high, relative to the situation in the previous national stage, only certain regions specialize in the production of consumer goods, the remaining regions specializing in other lines of economic activity and importing their consumer-goods requirements. On the other hand, the location of consumer services (which are also growing steadily during this stage) have a pronounced local or regional orientation. For this and other reasons the relative importance of the endogenous sectors of most regional economies increases, while that of their export sectors tends to decline (Pfister, 1968, p. 151). The overall effect of these trends is for regions to become increasingly similar in terms of their economic profiles.

During this stage of high mass consumption the extent of interregional economic interaction continues to intensify, and there is a further integration of the national economy. There may, however, be a realignment in the relative standing of regions. Well-established regions may begin to experience such difficulties as resource depletion, high levels of factor costs, negative externalities resulting from congestion and pollution, and the burden of high local taxation. Moreover, certain regions, which were in the vanguard of the take-off stage

¹⁵ One reason for this relates to the fact that very large markets are required to secure the necessary economies of scale in production which permit relatively low prices and thus consumption on a mass basis. Nevertheless, one or more regions may enter the high mass consumption stage considerably later than the nation as a whole, e.g., the South in the U.S. and the Mezzogiorno in Italy (see Note 6).

nationally, may now be suffering severe problems of structural adjustment, and emerging as depressed areas. At the same time and not unrelated to the new patterns of consumption is the tendency for other regions, which were late into the take-off stage and which were at one time adversely affected by an isolated location or unfavorable climate, to capitalize on their current natural-amenity advantage and thus become increasingly attractive to population and economic activity. Facilitating these interregional shifts (popularly termed in the U.S. "the move from rust belt to sun belt") are the continuing improvements in transportation and telecommunications. Such improvements, which are consonant with (and very much part of) Rostow's mass consumption stage nationally, tend to blur the locational distinctiveness of regions.

By now backwash effects have come to be outweighed by spread effects, with the result that a receding core-periphery contrast and interregional convergence (i.e., decreasing income inequality among regions) become the customary trends. These trends may be reinforced by the initiation of regional policy, particularly with respect to the problem regions referred to above.¹⁶ Regional policy is usually pursued through differential regional expenditures on the part of a national government or by means of direct measures involving infrastructure investment and/or the availability of financial inducements. More important than regional policy in accelerating the process of convergence is the growth of public expenditure nationally. Such expenditure often contains an automatic-stabilizer element, and results in interregional transfers, invariably to the advantage of the less favored regions (Commission of the European Communities, 1977; Wilson, 1979). Within individual regions there is an increasing tendency for the spatial structure to be less concentrated, a trend made possible by intraregional improvements in communications and, related to this, the changing nature of agglomeration economies (Parr, 1999b). Subsumed within such a trend toward regional deconcentration is the continued decentralization of the major metropolitan areas, a process in which the growth of suburban housing and automobile transportation are prominent (Rostow, 1960b, p. 77).

5.4 General Aspects of the Interregional Perspective

Three important themes underlie this third perspective. The first is that at any given national stage certain regions are still at an earlier (usually the previous) stage, while others may have already attained the next stage. Such a situation could be portrayed by means of a table along the lines of Table 1, with the first column now referring to national stages rather than simply particular points in time. A second theme is that the relative performance of regions may change during the sequence of national stages. For example, a region may be early into the preconditions stage but late into the drive to maturity stage. This would only be apparent in a modified Table 1, if the individual regions were identified. A third theme concerns the fact that at a given stage nationally certain regions act as leading regions, in the sense that developments there induce development in other regions and assist their passage to the next stage. Throughout the long history of national economic development, however, it is unlikely for a given region to be cast in the role of a leading region at every stage, as the contrasting experiences of New England and California in the U.S. (or of Northwest England and Southeast England in the U.K.) bear witness.

¹⁶ Regional policy of some kind may emerge during an earlier stage, if the spread effects are deemed to be excessively dominating the backwash effects (Hirschman, 1958, p. 190).

This interregional perspective on Rostow's work is based on the premise that if his framework can be accepted as having a validity at the national level, in whatever approximate sense, it is necessarily capable of being expressed in interregional terms.¹⁷ However, the perspective should not be seen simply as a top-down tracing through of the interregional ramifications of Rostow's national framework, useful as such an exercise may be. There are also likely to be instances when an application of the interregional perspective is able to provide useful insights as to why a nation has reached a particular stage, or why (historically or in the present) its passage from a given stage to the next represents a difficult process. Analysis along the lines of this third perspective may even reveal particular features of interregional structure which render the Rostow approach questionable as a framework for examining national economic development.

6. Further Comments

The scrutiny of an hypothesis or a theoretical framework from a standpoint not critical or integral to the original formulation, may not only shed light on its internal consistency, but may also facilitate its extension or elaboration. In the case of Rostow's stages theory of economic growth, approaches of this type have been pursued by Leibenstein (1963) with respect to population and by Berrill (1963) from the standpoint of foreign capital. The concern here, however, has been with the regional implications of the Rostow framework. Such an exploration is not fundamentally different from an examination of national economic development in sectoral terms, an approach which has long been commonplace. It is somewhat surprising, therefore, that so little effort has gone into examining the Rostow framework in regional terms, particularly since Rostow (by peppering his various works on this topic with references to the region) suggested or strongly implied such a possibility.

Rostow's concerns were avowedly national in emphasis, and in the foregoing comments there has generally been an implicit acceptance of his argument, the criticisms of his work having already been noted. The examination has involved three spatial perspectives. In the first, the concern is with whether the growth of an individual region can be viewed in terms of a passage through Rostow's suggested sequence of stages. It was argued that this might be possible for some regions, but that the framework would have to be modified and made more general in order to reflect the experience of other regions, particularly with respect to the take-off stage. Also, the more open and less self-sufficient nature of the regional economy, relative to the national, sometimes causes the Rostow stages to appear inappropriate, even awkward, at the regional scale. These two factors suggest that alternative frameworks for the analysis of long-run regional development may sometimes be preferable. Important in this connection is the fact that the region, though existing as one of a set of regions within a nation, is increasingly able to interact directly with (regions in) other nations, particularly with the progressive elimination of trade barriers and reductions in communication costs. This has an obvious importance for regions currently at the early stages of development.

¹⁷ Such an approach is not without precedent, and bears a passing resemblance to the model outlined by Rostow (1990, pp. 564-569), involving two nations with different income levels (being at different stages). Under the assumption that the two nations are linked with respect to trade and technology transfers, Rostow demonstrates the conditions under which the poor nation may catch up with the rich nation. The model has an obvious relevance to this third perspective.

The second perspective, the multiregional, is somewhat more satisfactory. It draws attention to the fact that the developmental experience is not the same for all regions of a nation, and focuses attention on the tendency for different regions to attain particular stages at different times. This essentially descriptive perspective raises the difficult issue of multi-regional aggregation, and does not deal with the manner in which the various regions are related to one another. It is only with the third perspective, the interregional, that we gain some feel for the national economy as a "space economy." This perspective, which provides us with a spatial articulation of the process of national economic development, considers the fact that regions are related in a competitive as well as a complementary manner. It also pays attention to the intricate and changing patterns of interregional interaction with respect to trade, factor movements, transfer payments, and the transmission of growth. Viewed from this third perspective, Rostow's stages theory of economic growth does not appear to be at odds with observed patterns of regional and interregional development or with the various conceptual frameworks which attempt to generalize these.

The third perspective is not without problems, however. The attempt at examining each stage in interregional terms is complicated by the fact that a given stage for the nation invariably involves a pattern of the various regions being at different stages and moving through the sequence at different rates. But it is this very spatial complexity that often goes to the heart of national economic development over the long run and thus makes the process worthy of interest. Indeed, it is here that the Rostow framework has a considerable potential for extension and enrichment. What is lacking in this third perspective (and also in the previous two) is the successful translation of Rostow's skilful account of political, social and institutional changes to the regional scale. So many of the influences in this connection are nationwide in form and operation, and it is extremely difficult to consider these other than in national terms.

An important by-product of this attempt at applying the Rostow analysis of development to a sub-national setting is the confirmation (if one were needed) of the differences that exist between the regional economy and the national economy. Most fundamental in this regard is the openness of the regional economy and, as a consequence, its relatively low level of endogeneity or self-containment. Such features have important implications for the manner in which the two types of economic unit are viewed. A regional economy is not a microcosm of the national economy, any more than the national economy is a regional economy writ large. It is apparent that the more important determinants of regional economic growth simply do not apply (or are of considerably less significance) at the national level, while many of the forces influencing national development have no clear counterparts at the regional level. Considerations of this type, perhaps more than any other, make the task of exploring the regional implications of Rostow's work a challenging one. Nevertheless, the Rostow approach, when re-interpreted in the manner outlined here, does offer one means by which regional and interregional change can be related to national economic performance.

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