THE DIMENSIONS OF REGIONAL ECONOMIC DEVELOPMENT THEORY (Presidential Address, April 3, 1993)

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I. INTRODUCTION

My interest in the dimensions of regional economic development theory developed over a period of years as I searched for ways to organize my lectures in a graduate course in Rural Economic Development. I found that students were somewhat bewildered by the array of concepts, theories, hypotheses, models, and methods they were asked to absorb all under the title of rural development. At the same time, I hoped to understand a little better the relationship between regional economics, regional development, and rural economic development. This paper is the product of that search.

II. THE THEORIES OF REGIONAL ECONOMIC DEVELOPMENT

A monolithic regional economic development theory does not exist and perhaps never will. However, like the Grand Unified Theory sought by physicists to explain the various natural forces with a single, consistent conceptual basis, a unified theory of regional economic development would have great practical and aesthetic value. Several theorists, each commenting on the theoretical bases of their own areas of the discipline, have commented on this fragmentation. In his paper on international trade and the product cycle, Vernon states:

As theorists have groped for some more efficient tools, there has been a flowering in international trade and capital theory. But the very proliferation of theory has increased the urgency of the search for unifying concepts (Vernon 1966).

Parr states that:

... it [the concept of the growth pole] offers the promise of being able to draw together two important strands of regional analysis: analysis of

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regional economic growth and analysis of the spatial structure of regional economic activity. In the past there has been a serious divergence in the development of these two branches and they have been generally pursued independently of each other (Parr 1973).

And so it is in most areas of regional economic development theory. A proliferation of theoretical concepts has emerged to address given problems and issues. Yet these concepts are largely unrelated, frequently overlapping, and sometimes contradictory. A unified (general) theory would adjust and incorporate the best of these concepts into a single theory of economic development.

This paper offers some preliminary perspectives on the dimensions of the component regional economic development theories. It is argued that these theories must, at least, include consideration of economic growth, economic development, human capital, and the public sector.

First, let us consider the distinction between growth and development. To some extent, semantics will always prevent agreement on universal, distinguishing definitions for these concepts. Kindleberger and Herrick describe the differences between growth and development as follows:

Theories of economic growth . . . are highly aggregated, usually featuring only one or two types of output and a limited number of inputs. The relations linking output and input are quantitative ones, capable of expression in mathematical form. In the simplest cases, graphs help us penetrate their meaning. Growth models are, or at least should be, subject to empirical measurement and testing.

The differences between growth models and development models can be inferred from the differences in the processes of growth and development themselves. Variegated composition of the economy, the differences in sectoral responses, and the reactions of individuals within a setting of poverty are neglected or ignored by growth models, but they are at the heart of models of economic development.

The theories of economic development . . . are less amenable to purely mathematical formulation and graphic representation. Statistical testing is also more difficult. Models of economic development are at once less purely scientific than models of economic growth and, because of their greater detail, considerably more suggestive. The possibility of including variables not easily quantified implies an added richness at the expense of a lower scientific content (Kindleberger and Herrick 1982, 39-40).

Kindleberger and Herrick's equation of measurability with scientific content seems unnecessarily confining. Strict quantification is not necessary to invalidate hypotheses. The "richness" referred to may make our theories more accurate (if not precise) and thus include more scientific content. Kindleberger and Herrick go on to say that:

Economic development as a process involves compositional changes in the economy's outputs and inputs, as part of its focus on overall improvement of the human condition. Central to development is the incorporation into productive economic activity of all individuals who want to participate—generally the great bulk of the adult population. [Economic activities] provide centers around which human dignity and worth are sometimes measured, and they allow individuals to participate meaningfully in a set of institutions larger than themselves if they choose to do so (Kindleberger and Herrick 1982, 179).

These definitions imply that growth and development theories are in some sense dichotomous. However, it may be more realistic to view these theories as falling somewhere on a continuum between two extremes. Furthermore, the distinction becomes less noticeable as growth and development theories become more general and detailed. This in itself lends support for the hopes that a unifying concept might be found.

It is the thesis of this paper that regional economic development concepts, whether growth or development, or whether concerned with households, governments, industry, or other institutions, can be "placed" along any of four dimensions: spatial, sectoral, temporal, and distributional. The process of theoretical development has usually involved the extension of earlier, more basic concepts along one or more of these dimensions. An important difference between many models (and the basis for the classification of theories below) is the relative importance that they give to each dimension. Those theories that articulate several or all of the dimensions are necessarily more sophisticated. The most sophistication, however, occurs where the dimensions are fundamentally related to each other—time to space, space to sectors, sectors to distribution, etc.

III. SPATIAL DIMENSION

The one necessary dimension of regional science is the spatial dimension, but spatial theories vary greatly in their spatiality. Theories about regions are not necessarily very spatial. Their reference to a particular place (often point) gives them location but no reference to other places or points. To be truly spatial,

theories must treat space in a more sophisticated way than simply identifying a location. They should incorporate distances, area, or relative location, explicitly.

The similarities between time and space are more than coincidental. Time and space (distance) are inextricably interwoven in economic relationships since they are sometimes complementary inputs and sometimes substitute commodities. Castle (1988) makes this point when he refers to the value of space and the cost of distance. Space injects temporal lags into economic relationships. Supply, demand, prices, and competition are defined by spatial and temporal coordinates.

Spatial theories are likely to be necessarily more complicated than temporal theories if only because space is itself two or three dimensional and multidirectional while time can be treated as a single directional phenomena. Thus, serial correlation is simpler than spatial autocorrelation, and temporal gradients are simpler than spatial gradients.

IV. THE TEMPORAL DIMENSION

All theories of growth and development are, almost by definition, temporal since they deal with changes in economic systems through time. However, the concern here is with the degree to which theories are dynamic. The term "dynamic," as used here, refers to theories that deal explicitly with the *process* of change rather than the *change* itself. A dynamic theory is concerned with the path that an economy follows as it strives for equilibrium. Such theories are sometimes referred to as disequilibrium theories. Used in this way, there is a subtle definitional difference between theories that deal with systems in disequilibrium and those that predict a system that tends to move away from equilibrium. Cumulative causation, for example, is a theory that predicts that regions will not converge, but rather continue to become more disparate. Cumulative causation is, in fact, also a model of the disequilibrium process. The most dynamic models will usually deal with savings, investment, resource adjustment, innovation, and changing technology.

Yotopoulos and Nugent concur with this disequilibrium view (and the view that economic development theory is fragmented):

We adhere to the view that development is a process of successive disequilibria. Yet economics does not possess a formal theory of disequilibrium. What we have, instead, are bits and pieces of a theory, individual building blocks on which an integrated development theory may eventually be founded.

Several aspects of development characterize the process as one of disequilibrium. Development is not always a uniform and smooth process of marginal adjustments. More often it appears to be punctuated by some watershed effects. The selection of a growth path at any one time forecloses alternative choices that might have become available at a later stage of development. Change does not necessarily trigger autonomous control mechanisms. Rather than being gradual and nondisruptive, it often involves jolts and shocks. Trickle-down mechanisms and spread effects do not always work, and the backwash effects often dominate. Instead of gradualism, a certain amount of leap-frogging may be necessary if development is to be attained and sustained. Development involves changes not only in magnitude of the different variables but also in the structure of relationships among them. This introduces a qualitative difference between the requisites for understanding both stationary underdevelopment and the more complex process of sustained growth. The more complex process cannot always be explained solely on the basis of the less complex situation (Yotopoulos and Nugent 1976).

V. THE SECTORAL DIMENSION

An interest in sectors is a natural one to economists and one that seems to have received more attention than the other dimensions. Both classical and neoclassical schools of economic thought are organized on a sectoral basis. The work of Walras, Stone, Leontief, and a host of more recent economists have contributed to a broad literature on intersectoral relations.

The Social Accounting Matrix (SAM) is a fundamental part of most sectoral theories and is a powerful instrument in its own right. The sectoral dimension has also been fertile ground for extension into the other dimension. The SAM itself may be equally viewed as a sectoral or a distributional framework. Interregional input-output and spatial equilibrium models are among some of the most sophisticated models along the sectoral-spatial dimensions. Single-region models are used somewhat apologetically because of their well-known limitations. Dynamic input-output is a sophisticated sectoral-temporal theory with considerable promise. When time is added to the spatial/sectoral models, the timing of interregional, intersectoral activities can be addressed.

The concept of sectoral interaction has proven over and over to be very powerful. By choosing different bases for aggregating and disaggregating, some

very diverse frameworks can be developed. In effect, sectors can be disaggregated in order to define regions or space disaggregated to define sectors.

VI. THE DISTRIBUTIVE DIMENSION

As policy analysts, we are frequently concerned with the incidence, or distribution, of costs and benefits of change as well as their level. The distributive dimension refers to the activities (not limited to income) of individuals or groups of individuals. It is tempting to question how the distributive dimension differs significantly from the sectoral dimension. Both are disaggregations of economic activities. There are a number of practical reasons, of course, for distinguishing between sectors and individuals. For one, sectors primarily produce, while individuals primarily consume.

There are more basic reasons, however. Most would agree that welfare depends not on sectors, but on the distribution of income, wealth, power, and opportunity among individuals. We also believe that the distribution of wealth, income, and power affects other, nondistributional aspects of the economy such as demand for public and private goods and services, growth potential, and industrial location. Perhaps the most compelling justification for a distributional dimension is that distributional concerns often span the other dimensions. While we are often only concerned with the aggregated, static distribution, there are other occasions when we are concerned with distribution over space (rural/urban for example), over sector, or over time.

VII. A CLASSIFICATION OF REGIONAL THEORIES

These four dimensions allow a crude classification of the various theories related to regional development. Table 1, borrowed and adapted from page 2 of Moseley (1974), describes this classification. The classification is not perfect since each dimension is really a continuum. The sectoral distinction is particularly difficult to make. Dual economy theories, for example, distinguish sectors but only to a minor extent and are classified as point, rather than spatial, theories. Nor is the scheme exhaustive. There are, for example, many spaceless dynamic economic models. They have been ignored because they have little applicability to regional economic development.

VIII. INTEGRATING REGIONAL ECONOMIC DEVELOPMENT THEORY

Finally, I conclude by calling for increased efforts to find opportunities to integrate regional economic theories. The potential for understanding regional phenomena through these integrated theories is sizable. Some possibilities follow.

Our understanding of optimum city (community) size could be vastly improved by integrating central place theory, the economics of public service provision, and the Tiebout hypothesis of migration and commuting. The central place theory would provide a spatial foundation, and the Tiebout hypothesis would provide a dynamic context for changing costs of, and demands for, public services.

Our understanding of public service demand and cost would improve if we integrated, into our theory of public services, theories of growth, income distribution, migration and commuting, and spatial linkages among communities and sec-

TABLE 1
A Classification of Regional Economic Development Theories and Concepts

Space-Sector	Time	
	Static	Dynamic
Point-Aggregate	Economic base	Long wave theories Growth curves Harrod-Domar
Point-Sectoral	Static input-output Industrial complex analysis External economies Static multiplier analysis Computable General Equilibrium (CGE)	Dynamic input-output Dynamic multipliers Diffusion of innovations among industries Leading and propulsive industries Portfolio variance Product cycles
Spatial-Aggregate	Industrial location theory Optimum city-size Gravity models	Urban growth models Spatial diffusion of innovations Growth-pole theory
Spatial-Sectoral	Central place theory Static interregional IO Interregional CGE Spatial equilibrium Agglomeration economics	Cumulative causation Dynamic interregional IO

tors. An aggregate theory of this nature would help us to understand the public sector's role in the dynamics of regions and the consequences of alternative actions.

In conclusion, regional economic development is not described by a single theory, but by a collage of concepts related by their concern for the causes and consequences of the level of economic activity, but distinguished by their treatment of time, space, sectors, and distribution. This represents both sources of frustration and opportunity—frustration of our attempts to understand regional economies, but many opportunities to creatively extend the sophistication of our many theoretical pieces.

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