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Featured Article

Place Orientation and Rural–Urban Interdependence

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Abstract *An entire economic system cannot be understood unless there is reliable knowledge about both rural and urban sectors, including their interactions. In particular, there are two anomalies that cannot be rationalized satisfactorily by existing economic theory: the decentralizing economic activities that proceed from the city to the countryside; and the unequal per capita economic rewards between rural and urban people over time. This article presents empirical evidence on the two anomalies, proposes an integrated framework of rural–urban space, discusses the historic interdependence of rural and urban places from the perspective of the integrated framework, and looks at the implications for research and public policy.*

Key words: Place orientation, rural-urban spatial relation, spatial inequality, urban expansion.

JEL codes:: R11, R12, R52, R58.

This article offers a fresh view of rural–urban economic spatial relations and is motivated by the recognition that rural economics is less well developed than urban economics. Cities are remarkable human inventions, and most of the people and wealth of a nation are found there. Yet both rural and urban components are necessary for a healthy economy. An entire economic system cannot be understood unless there is reliable knowledge about both rural and urban elements, including their interactions.

In particular, two long term trends in rural–urban relations cannot be rationalized satisfactorily by existing economic theory.[1] The first pertains to decentralizing economic activities proceeding from the city to the countryside. The second pertains to unequal per capita economic rewards between and rural and urban people over time.

Various specializations within economics—urban economics, agricultural economics, and regional economics—contribute to an understanding of urban expansion into rural places. Urban economics is indeed concerned

[1]*As used by Kuhn, an anomaly exists within a discipline when a real-world condition or entity is not consistent with that which existing theory would lead one to expect.*

with land use on the city fringes, but that concern is reflected mainly in the study of zoning issues and what is best for cities themselves. Agricultural economists have devoted considerable effort to rural–urban competition for land as cities have expanded. Most of these efforts have been directed to particular places or problems, with special attention to agricultural industry effects rather than to the total rural economy. Regional economic literature generally has been concerned with economies of entire regions rather than directing attention to urban–rural relationships.

The three economic specializations mentioned above—urban, agricultural, and regional—share a common intellectual tradition with respect to the location of economic activity that dates from the writings of Johann Heinrich von Thunen in the early 19th century to the present. This tradition focuses attention on the importance of cities in the location of economic activity, but the countryside has not been totally neglected. In fact, von Thunen's main motivation was to understand where agricultural enterprises would be located relative to cities. This tradition has emphasized the importance of the city as a driver of economic activity generally. The usual assumption with respect to the countryside is that rural economic activity consists largely, or entirely, of farming. The cost of distance from one rural place to another is the principal device used to distinguish one rural location from another. The questions addressed in traditional economic theory have consisted mainly of where in the countryside agricultural production occurs and how commodities and people move from the countryside to the city. Economic activity within urban places—and how urban places are governed and function—has been the province of urban economics.

Following the urban-centric tradition, more recent literature in urban economics and regional science has investigated the decentralization of urban activities. The traditional explanation emphasizes transportation costs to the central work places and the heterogeneity of the housing stock as driving forces for suburbanization. To minimize commuting costs to the central business district, central areas are developed first. As new houses are built at the periphery, high-income groups who can afford them settle there. The older, smaller, centrally located houses filter down to lower-income groups (Mieszkowski and Mills, 1993). This tendency of high-income groups to live in the suburbs is reinforced by the development of new transportation modes (LeRoy and Sonstelie, 1983), better access to public transportation in central cities (Glaeser, Kahn, and Rappaport), central-city problems (Mieszkowski and Mills, 1993), variation in local property tax rates and public goods that leads people to "vote with their feet" (de Bartolome and Ross, 2003), school and neighborhood quality (Bayer, Keohane, and Timmins et al. 2009; Smith et al. 2004; Ioannides 2002), and natural and social amenities (Glaeser and Kahn 2003; Wu, 2006; Walsh 2007). One important insight gained from previous studies is that cause and effect of suburbanization are simultaneous; urban fiscal disparities and city decay are not only the cause of middle-class flight, but the product as well.

Many recent studies have also examined urban development patterns. For example, Irwin and Bockstael (2002) examine the influence of congestion effects from neighboring development on land development patterns. Wu (2006) develops a spatially explicit model to explore the causes of fragmentation in land development and finds that spatial heterogeneity of

amenities is a major determinant of development patterns and community characteristics. Burchfield et al. (2006) use remote-sensing data to track the evolution of land use in the United States and find that the extent of urban sprawl varied dramatically across metropolitan areas, depending on early public investments in transport infrastructure and on natural endowments such as ground water availability and climate. Ferguson et al. (2007) examine the influence of local amenities, economic factors, and agglomeration economies on population growth in Canada and find that, although economic variables are the most influential in population change for all rural age cohorts, in urban areas amenity and economic variable groupings have approximately equal importance across all cohorts. Nechyba and Walsh (2004) reviewed the literature on urban sprawl and suggested that, although the urban economic literature has succeeded in identifying the primary causes of sprawl, it often ignores how city landscapes evolve within expanding boundaries.

Some academics, as well as nonacademics, appear to view urban expansions into traditionally rural or agricultural areas as aberrations—that is, as a necessary step in some cases, perhaps, but a step to be avoided if at all possible. Commonly used words in the literature, such as "sprawl" and "urban invasion," describe urban use of previously rural land (see Lewis 1995; Bruegmann 2005).

Much research also has focused on spatial inequalities in economic development (see Henderson, Shalizi, and Venables 2001 for a review). Previous studies have identified three major factors that affect economic development: (a) natural endowments (e.g. water availability, land quality); (b) accumulated human and physical capital (e.g. educational level of labor force, infrastructure); and (c) economic geography (e.g. remoteness, proximity to input and output markets). These theories, however, have rarely been tested in the context of rural development in the United States (Wu and Gopinath, 2008). Rappaport and Sachs (2002) analyze the effect of coastal proximity on the concentration of economic activity in the United States and find that the coastal concentration derives primarily from a productivity effect, but also, increasingly, from a "quality-of-life" effect. Partridge, Olfert, and Alasia (2007) assess whether agglomeration economies in the major Canadian metropolitan areas lead to population growth in or near these cities and find that disparities such as the concentration of Canadians along its southern border may explain migration patterns. Deller et al. (2001) examine the effect of amenity and quality of life attributes on regional economic growth in the United States and find that predictable relationships exist between amenities, quality of life, and local economic performance. Halstead and Deller (1997), Rudzitis (1999), and Gottlieb (1994) find that quality of life plays an increasingly important role in community economic growth in the United States. Wu and Gopinath examined the causes of spatial disparities in economic development in rural America. They found that remoteness is a primary cause of spatial disparities in economic development, while natural amenities are a major determinant of housing prices.

There has also been considerable research effort directed to explaining differences in poverty rates related to place. Weber et al. (2005) reviewed studies that sought to understand why rural poverty rates are higher than urban ones. In their review, they suggested the possibility that the observed "effect" of living in a rural area on the likelihood of being in

poverty might be due to the endogeneity of poverty and rural residence. Levernier, Partridge, and Rickman (2000) use U.S. county-level data to explore potential explanations for the observed regional variation in the rates of poverty. Factors considered include those that relate to both area economic performance and demographic composition. Partridge and Rickman (2006) extended this work in an analysis of the spatial, demographic, and economic factors underlying geographic variations in poverty rates in the United States. Their county-level poverty analysis examined the differential effects of these factors in central-city counties, suburban counties, adjacent nonmetro counties, and remote nonmetro counties. An important finding was that economic characteristics of a place affect poverty rates: local labor market conditions, for example, appear to have particularly important effects on poverty rates in central-city counties and remote rural counties.

Persistently low per capita income and poverty are perhaps the most enduring and intractable social pathologies affecting both rural and urban people. Although much research has focused on the spatial inequality in economic development, existing economic theory fails to account adequately for persistent nonconvergence in per capita economic rewards and in poverty rates and poverty persistence across the rural–urban continuum over time.

This article is organized as follows: first we present empirical evidence on the two long-term trends in rural–urban relations. We then propose an integrated framework, or model, of rural–urban space that permits the two long-term trends to be internalized as well as depicting rural economic decisionmaking more generally. A unique feature, labeled place orientation, links people and places as economic decisions are made. The model has been developed to accommodate five empirical generalizations about rural America derived from previous research. We then discuss historic interdependence of rural and urban components from the perspective of the integrated model. One conclusion is that the decentralization of cities and metropolitan places is but another manifestation of historic rural–urban place interdependence. Another conclusion is that both rural and urban poverty and low income should be viewed from both a market and a nonmarket perspective.

Empirical Evidence about Two Anomalies

Evidence about spatial decentralization

We examine two aspects of spatial decentralization. The first relates to the dynamics of urban form and of land use in residential and commercial development. The second relates to the dynamics of agricultural production in urban areas.

Dynamics of urban form. The simple monocentric urban land use model predicts an orderly spatial progression of land uses, with high-rent uses closest to the urban center and lower-rent uses arranged in concentric circles ordered from higher to lower rent away from the center. In reality, residential, commercial, and industrial uses of land spread out over the landscape from urban centers, but not in a neat and orderly way. As Bruegmann observes in discussing the patterns of spatial deconcentration

across the United States over the 1960 to 2000 period: "increasingly in the twentieth century, the old distinctions between cities, suburbs and rural areas have blurred. The urbanized areas, including the city and its suburbs, are now surrounded by a penumbra of exurban development that can extend for dozens, even hundreds of miles, from multiple urban centers.... New development radiating out of cities has created a complex and overlapping pattern that resembles the stars in the galaxy. The result, particularly visible in the great regional clusters of the northeastern seaboard, Great Lakes, southern Piedmont, and the California coast, is what geographer Pierce Lewis has described as the 'galactic metropolis'" (Bruegmann 2005, Figure 19, p. 83).

At the same time, there is evidence that this pattern of land use is not static, that the land around cities initially developed at low densities fills in over time. Bruegmann observes that over the past two centuries, population densities in London and its suburbs have increased dramatically. While the central district of London has become slightly less dense, the outlying areas have become increasingly dense with each succeeding period. For U.S. cities, Bruegmann shows that between 1950 and 2000, "most of the older, denser and most heavily industrialized urbanized areas of the Northeast have declined sharply in density due to the massive decentralization after World War II. A number of the newer cities of the American South and West, in contrast, although much less dense to begin with, have seen a pronounced rise in density. The result has been a convergence between older and newer cities. In virtually every case the decline in density of the postwar years has either slowed or stopped since the late 1970s, with many American areas now becoming more, rather than less, dense. Chief among these is Los Angeles, which is today the densest urban area in America and at least as dense as many urban areas in Europe" (Bruegmann 2005, Figure 9, pp. 62–3).

Irwin et al. (2009) provide a review of recent economic studies of rural–urban space. They suggest that changing economic conditions—including waning transportation and communication costs, technological change and economic restructuring, rising real incomes, and changing tastes for natural amenities—have led to a new form of urban–rural interdependence, as evidenced by the merging of rural landscape with urban economic functions.

Agriculture in urban areas. Urban and regional analysis ordinarily treats agriculture as a primarily rural activity, but in fact significant agricultural production and substantial farm income occur in metropolitan U.S. counties. "Nationally, farms in metropolitan areas are an increasingly important component of U.S. agriculture. In 1997, they made up a third of all farms and controlled 39 percent of farm assets.... Eighteen percent of farmland operated was located in metro areas in 1997..."(Heimlich and Anderson, p. 38). These farms also accounted for one-third (34 percent) of the sales of agricultural products in 1997–2001.

This is not just a recent phenomenon. During the 1969 to 1991 period, almost 40 percent of the annual average farm income in the United States was earned in metropolitan counties. Farm income also became more concentrated in metropolitan counties over that period (Weber 1995, pp. 157, 159).

Moreover, if one conceives of agriculture broadly to include agricultural production, services, and processing of food and related products, real earnings in agriculture in metropolitan counties in the United States exceeds that in nonmetropolitan counties. Over 60 percent of the annual average earnings in U.S. agriculture was in metropolitan counties during the period from 1969 to 1991 (Weber 1995, p. 157). In addition, earnings from agriculture broadly conceived grew more rapidly in metropolitan than nonmetropolitan counties during this 22-year period.

There is also evidence that farms near cities are quite adaptive, responding to the opportunities that nearby urban areas provide:

> The dynamic forces of urbanization create an urban fringe in which a variety of farm types coexist, reflecting different paths that farms have taken in adapting to urban influence . . . These changes occur primarily through product and input markets in which farmers buy and sell, and through the actions of local government institutions, which by law and tradition exercise control over property taxes and land use. Farms in metro areas are generally smaller, produce more per acre, have more diverse enterprises, and are more focused on high-value production than nonmetro farms. Metro agriculture is characterized by a relatively large group of recreational farmers who are availing themselves of opportunities in both farm and nonfarm pursuits, a smaller group of more adaptive farmers who have accommodated their farming operation to an urban environment, and a residual group of more traditional farmers who are trying to survive in the face of urbanization. Adaptive farms accounted for 13–14 percent of metro farms and 9–12 percent of metro farm acreage operated, but they controlled more than proportional shares of metro farm sales, assets and net cash farm income. These are the farms that have a better chance of continuing in an urbanizing setting. Adaptive farms were much more likely than either recreational or traditional farms to survive the full two decades [1978–97]. (Heimlich and Anderson 2001, pp. 40–2)

A local illustration of urban agricultural adaptation can be seen in the Portland, Oregon, metropolitan area. Agriculture in the three largest Portland metropolitan-area counties (Multnomah, Clackamas, and Washington counties) has become much more specialized over the period from 1954 to 2002. In 1954, production of agricultural commodities was relatively diversified, with none of the six broad categories of commodities (vegetables, fruit and nuts, other field crops, forest products and horticultural specialty crops, dairy products, and poultry products) accounting for even one-quarter of total farm sales; the shares of sales ranged from 8 percent (vegetables) to around 20 percent (fruits and nuts). By 2002, the sales of forest products and horticultural specialty crops accounted for 70 percent of farm sales, and none of the other commodity groups accounted for more than 8 percent. Related to this specialization, the productivity of agricultural land in the three-county Portland metro region has increased dramatically over the past half century (1954–2002) relative to that of the state as a whole. Agricultural sales per acre in Oregon almost doubled in real terms to about $200 per acre over this time period, while agricultural sales per acre in the Portland metro region almost quadrupled to over $1,600 per acre (U.S. Bureau of the Census, U. S. Census of Agriculture 1954; U. S. Department of Agriculture, Census of Agriculture 2002).

The emergence of farmers' markets is an example of the adaptation of urban farms to new opportunities. Heimlich and Anderson (2001) have documented the development of farmers' markets across the nation, providing a good indication of the ways that farms are responding to the demand for fresh local foods in urban America. A substantial number of

Portland metro area farms within the urban growth boundary and in the exclusive farm use zone are engaged in direct marketing.

Evidence about spatial inequality

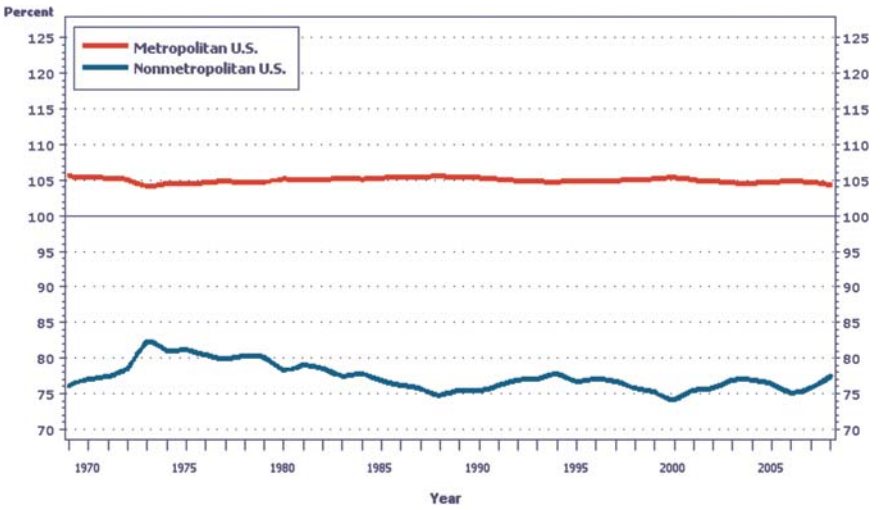
Spatial inequality has many dimensions, the most obvious of which is the disparity in average incomes across different places. Per capita income in the metropolitan United States in 2008, for example, was $41,930 (about 4 percent higher than the national average), while nonmetropolitan per capita income was $31,098 (about 23 percent lower than the national average) (U.S. Bureau of Economic Analysis).

Lack of urban–rural convergence in per capita incomes. Neoclassical economic theory would predict that per capita incomes would converge over time as capital and labor migrated to equalize inter-regional factor prices. During the 40-year period (1969–2008) for which we have the most consistent data, however, there is no evidence of a secular convergence of per capita incomes between metropolitan and nonmetropolitan areas. For the United States as a whole during this period, the per capita income gap has remained relatively stable or even slightly diverged, and average earnings have more clearly diverged, with non-metro-area average earnings falling further behind average metro earnings.

Figure 1 provides information on per capita income trends in metropolitan and nonmetroplitan America, showing metro and nonmetro per capita incomes as a percentage of the national average during 1969 to 2008. Two observations can be made about this figure. First, nonmetropolitan incomes are more volatile than metropolitan incomes. Second, while the metro/nonmetro per capita income gap was on average lower (around 25 percentage points) in the late 1970s than in the post-1990 period (around 30 percentage points), overall there has been neither convergence nor divergence in per capita incomes over the last 40 years. This gap has been about 30 percentage points over the entire period (closing at 27 percentage points in 2008). In 1969, metropolitan real per capita income in the United States amounted to 105.7 percent of the national average; in 2008, it was 104.4 percent of the national average. Similarly, in 1969, nonmetropolitan per capita income was 76.2 percent of the national average; in 2008 it was 77.4 percent.

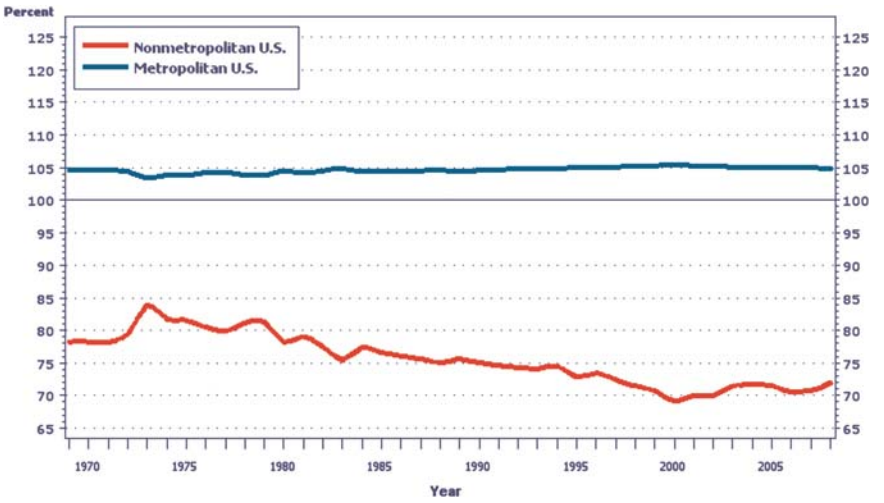
Incomes are comprised of earnings; dividends, interest, and rent; and transfer payments. Figure 2 shows that, although per capita incomes have not converged or diverged, earnings per job have diverged in metro and nonmetro United States. The figure shows trends for average earnings per job relative to the national average by graphing nonmetropolitan and metropolitan average earnings per job as a percentage of the national average from 1969 to 2008. In 1969, nonmetropolitan average earnings per job were 78.3 percent of the U.S. national average; in 2008, that figure was 71.9 percent. The metropolitan average earnings per job totaled 104.6 percent of the national average in 1969; in 2008, it was 104.8 percent. Earnings per job have diverged: the gap in real earnings per job relative to the national average between metro and nonmetro United States was 26.3 percentage points in 1969, but in 2008 it was 32.9 percentage points.

Figure 1 U.S. Metro Versus Nonmetro per Capita Income as a Share of National per Capita Income, 1969–2008



Source: OR-REAP website (http://oregon.reaproject.org/) using data from the U.S. Bureau of Economic Analysis, Local Area Personal Income series.

Figure 2 U.S. Metro and Nonmetro Earnings per Job as a Share of National Average, 1969–2008

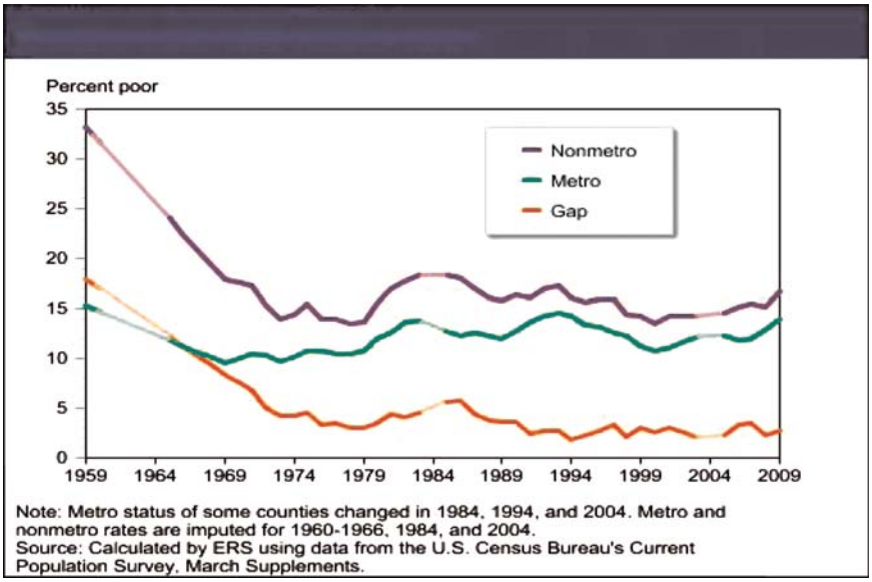


Source: As Figure 1.

Persistence of poverty in urban and rural places. Another dimension of spatial inequality relates to the inequality of incomes in particular places and how this inequality varies across places. Inequality between rich and poor can be measured in several ways. The most common measure of inequality in a place is the poverty rate—the percentage of the population whose incomes are below a minimum threshold that depends on household size and composition.

In the nonmetro United States in 2009, 16.6 percent of the population lived in poverty. The corresponding rate for metro areas was 13.9 percent,

Figure 3 Poverty Rates by Residence in Metro and Nonmetro United States, 1959–2009



Source: Economic Research Service, based on calculations by ERS using data from the U.S. Census Bureau's Current Population Survey, March Supplements. (www.ers.usda.gov/Briefing/IncomePovertyWelfare/).

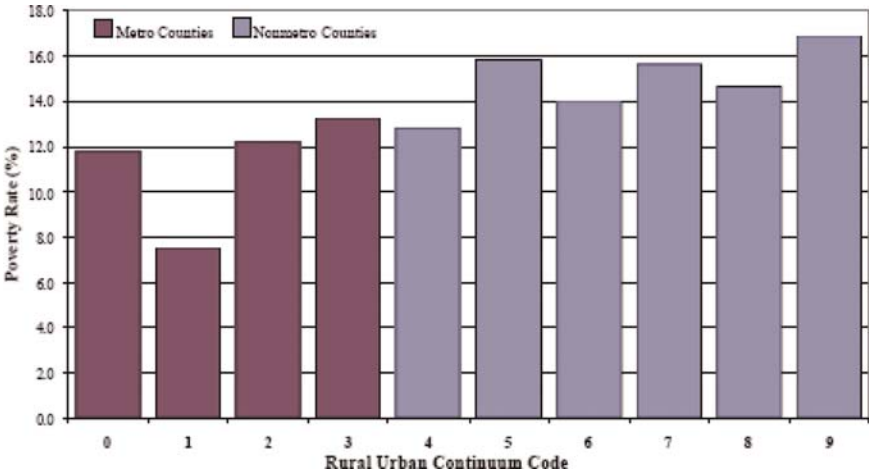
or 2.7 percentage points lower.[2] The gap between metro and nonmetro poverty rates, after declining dramatically in the 1960s, has remained stable for the past 40 years (figure 3).

A county's poverty rate is strongly related to its size and location relative to a metropolitan area. According to the 2000 census, central counties of large metro areas had poverty rates just below the national average of 12.4 percent. Poverty rates were lowest in the suburbs of the largest urban areas (continuum code 1) and highest in the smallest and most remote counties, and the poverty rate increases steadily from suburban to remote rural counties (figure 4).

Another dimension of poverty in a place is its persistence over time. There are 386 "persistent poverty counties," those metro and nonmetro counties that have had poverty rates of 20 percent or higher in the 1970, 1980, 1990, and 2000 U.S. censuses. Most of these counties (88 percent) are nonmetropolitan. Nonmetro counties are much more likely to be persistent poverty counties, and the likelihood of being a persistent poverty county increases as urban influence declines. Only 1 percent of large metro counties (one million or more population) are persistent poverty counties, compared with almost 20 percent of the smallest (no town of at least 2,500) and most remote (not adjacent to a metro area) nonmetro counties.

[2]*This ordering of metro and nonmetro areas on poverty rates does not take differences in housing and other living costs between metro and nonmetro areas into account. Using only housing cost differentials between metro and nonmetro areas to adjust poverty rates, Jolliffe has concluded that cost-adjusted poverty rates in metro areas are higher than those for nonmetro households (Jolliffe 2006). Other basic household costs that might be higher in rural areas (transportation, for example) have not been taken into account.*

Figure 4 Poverty Rate by Rural Urban Continuum Code, 1999



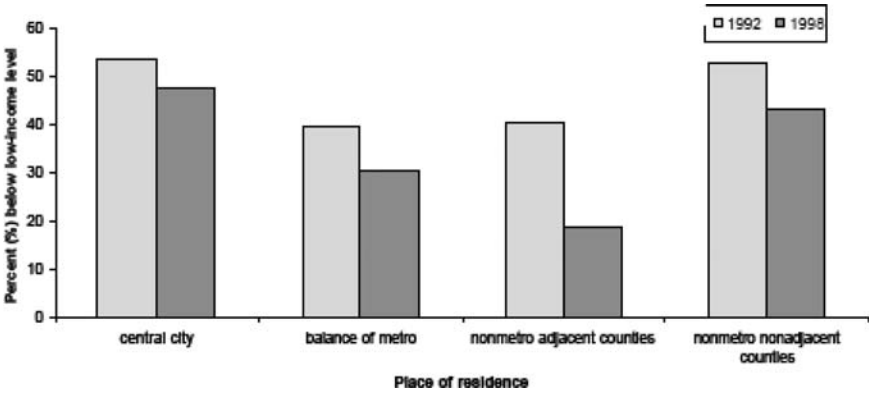
Source: Miller and Weber (Figure 1). Based on data from the Economic Research Service, U.S. Department of Agriculture; and the U.S. Census Bureau. The Rural urban continuum codes classify metropolitan (metro) counties by the population size of their metro area, and nonmetropolitan (nonmetro) counties by degree of urbanization and adjacency to a metro area or areas. Counties in code 0 are central metro counties with a population of 1 million or more and Counties in Code 9 are completely rural counties (or less than 2,500 urban population) not adjacent to a metro area. A fuller explanation is found on the ERS website: (www.ers.usda.gov/Briefing/Rurality/ruralurbcon/)

The picture of how the geography of poverty varies across places changes somewhat if one moves from a county-based classification of places to one that can distinguish central cities from the surrounding countryside. Fisher and Weber (2002) offer a rural–urban continuum that distinguishes the central city from the balance of the metropolitan area, and they examined the differences in poverty rates for single-mother families in 1998 for a rural–urban continuum of the central city, the metropolitan "suburbs," adjacent nonmetro counties, and nonadjacent nonmetro counties. Combining current population survey and panel study of income dynamics (PSID) data, they found that poverty rates for single-mother families were highest in central cities and nonadjacent nonmetro ("remote rural") counties (around 45 percent), and much lower in the "suburbs" of metropolitan areas (around 30 percent) and adjacent nonmetro counties (about 20 percent) (figure 5).

A county-based persistent poverty definition points to places where household poverty rates are high over long time periods. Single-mother families uniformly emerge as a group with very high poverty rates. An alternative way of thinking about poverty persistence is to examine how the duration of poverty episodes for this disadvantaged group varies across the rural–urban continuum. Using PSID data, Fisher and Weber (2002) examined how poverty persistence (measured as the number of years single-mother families in the sample were in poverty during the 1993 to 1998 period) varied across a rural–urban continuum of central counties of large metro areas (one million or more population), other counties in large metro areas, smaller metro counties, and adjacent and nonadjacent nonmetro counties (figure 6).[3]

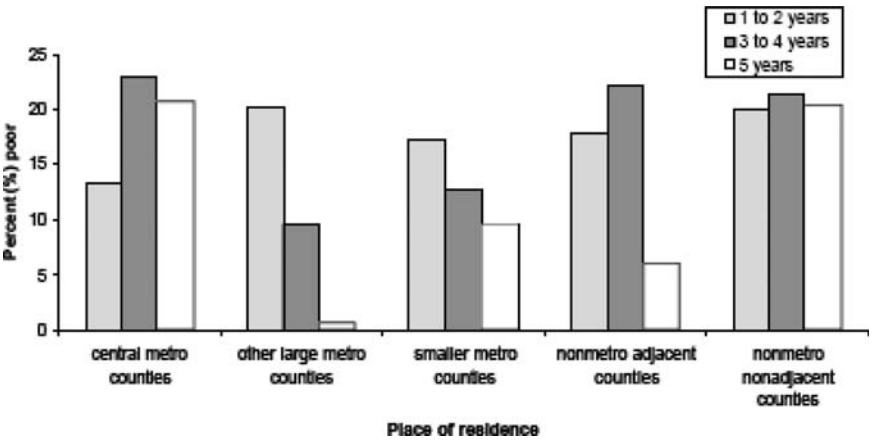
[3]*Note that the geographic categories for figures 5 and 6 differ.*

Figure 5 Poverty among Single-Mother Families by Residence, 1992 and 2008



Source: Miller and Weber (Figure 18). Based on analysis in Fisher and Weber.

Figure 6 Poverty Persistence, Single Mothers by Residence, 1993 to 1998

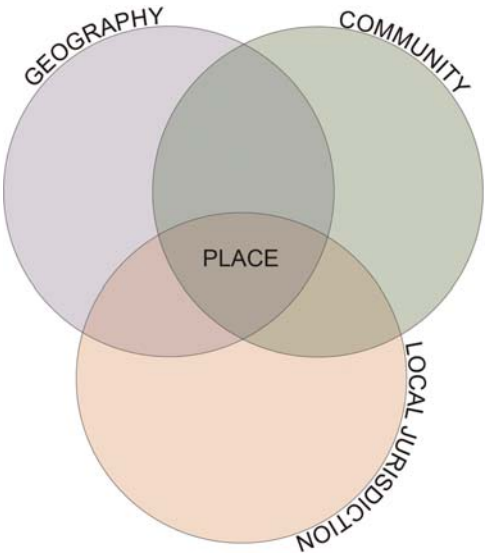


Source: Miller and Weber (Figure 17). Based on analysis by Fisher and Weber.

They found that "in central metro counties, 44 percent of single-mother families experienced poverty for three or more years out of five during the 1993 to 1998 period, and 21 percent were in poverty for all five years. The figures in remote rural counties were strikingly similar—42 percent of single-mother families were in poverty for three or more years, and 20 percent were for all five years. Poverty was clearly most persistent in these central-metro and remote-rural counties. Only 10 percent of single-mother families in other large metro counties ('suburbs') reported being in poverty for three or more years, with only 1 percent reporting five years of poverty" (Fisher and Weber, pp. 21-22).

In summary, urban decentralization and the enduring disparities in urban and rural economic rewards are important phenomena that deserve to be covered by economic theory and have a significant place on the economic research agenda. Existing economic specializations have not addressed these subjects in a comprehensive manner, although interesting and useful research has been conducted. The remainder of this article is devoted to the development of a general approach that internalizes these two anomalies as well as other aspects of rural economics.

Figure 7 The Definition of Place



Source: Castle (2010, p. 142).
Figure from "Reflections of a Pragmatic Economist: My Intellectual Journey" by Emery N. Castle (Oregon State University Press, 2010); used by permission.

An Integrated Framework for the Economies of Rural and Urban Places[4]

In this section, we present an integrated framework, or model, to understand better the spatial distribution of economic activities over the landscape, including the two long-term trends in rural–urban relations discussed in the previous section. We first specify the underlying conditions and assumptions and then present the theoretical framework. Finally, we highlight the framework's unique features.

Conditions underlying the framework

A definition of 'place' is needed for use in this integrated framework. According to Castle (2010), 'place' involves the intersection of an identifiable area on the globe, a specific jurisdictional unit of government, and a social community of inhabitants (figure 7). Individuals probably have at least two of those features in mind when they say something like: "I am from that place." A geographical component is necessary to distinguish among places with respect to location. A community of interest in some degree must be present for group decisionmaking, and the existence of a formal jurisdictional unit is necessary if there is to be access to government. Rural places are a function of space, distance, and relative population density.

According to Castle (1995), five empirical generalizations characterize rural places in America:

[4]*A statement of the conditions leading to the creation of the integrated model and a preliminary version of the integrated framework may be found in Castle (2010, pp. 139–48).*

- *Both centralizing and decentralizing forces are constantly shaping and reshaping the spatial landscape of the United States.* The economic dominance of cities and metropolitan places constitutes a most powerful centralizing force that has not yet run its course either in the Unites States or globally. Simultaneously, households, firms, and government and nongovernmental units in centralized urban places move outward into less-populated areas, seeking advantages in areas with greater or different space.
- *Rural America is a vast place with a varied landscape populated with diverse human populations.* Even though a common external environment exists, local conditions are highly diverse. In the United States, localities generally are accorded a degree of local autonomy in addressing common concerns and seeking fulfillment of aspirations. The result is that comparative advantages can be realized, and heterogeneous outputs offered.
- *Powerful exogenous economic, social, political, and technological forces affect rural, as well as urban, places.* The relation of farming and agriculture to the economy, in particular rural places, is of fundamental importance here. There is an unfortunate tendency to treat 'agriculture' (or 'farming') and 'rural' as synonymous. It is only early in the development process that most rural people are engaged in farming. Even so, rural–urban adjustment problems are often treated as though most rural people are engaged in farming. The economic importance of agriculture varies greatly among rural places.
- *Poverty and low incomes are found in all rural places but in varying degrees.* Poverty and low incomes in both rural and urban places were discussed extensively earlier in this article. These issues are best understood in an economic development context as well as across countries and societies. Most societies have faced problems of lagging rural income even in the presence of general economic growth.
- *Rural land use has profound implications for natural resource and environmental policy.* Tensions often arise between those who make use of natural resources to produce food, fiber, timber, energy, and minerals and those who look to the natural environment for ecosystem services. Rural America is where most of the natural environment is to be found. It is not surprising that environmental conflicts often come into the open in sparsely populated places.

The theoretical framework

Three assumptions are necessary for the establishment of a dynamic decision framework pertaining to individual and group decisions related to a rural place:

Assumption 1. *Local comparative advantage, reflecting the natural and human-created environment, creates potential for local decisions to reduce gaps between existing circumstances and aspirations.*

Assumption 2. *The U.S. system of government (federal and state) legitimizes a degree of local autonomy in the making of local public policy.*

Assumption 3. *People and places must be considered jointly if rural America is to be understood.*

Our framework requires that the characteristics of a place be considered explicitly in addition to the cost of distance. When a relatively

homogeneous product such as corn or wheat is exported from rural to urban places (centralizing transaction), the cost of distance and the price of the product will measure the comparative advantage of all places from which the product comes. But this will not necessarily be the case with a decentralizing transaction. In this case, comparative advantage must be considered explicitly because investment, in one way or another, is in a place, not just in the commodities. Furthermore, commodities or services (e.g. eco-tourism) forthcoming from different places are not necessarily homogeneous. The natural and human-created amenities associated with a place may become an essential part of an economic transaction (natural, human, and social capital). This is why a general economic theory must consider place.

The definition of 'place' and the underlying conditions and assumptions just described are of obvious relevance to the development of an integrated rural–urban spatial model. Such information creates an awareness of the complexities with which such a theory must contend. The propositions of a theory must reflect the essence of these complexities rather than their totality.

Based on Assumption 3, that people and places must be considered jointly, we deduce the following:

Proposition 1 (three orientations). *If people and places must be considered jointly, then three, and only three, generic orientations of people to a place are possible: (1) inside–outside (I–O), (2) outside–inside (O–I), (3) inside–inside (I–I). Some within a place have external aspirations; some external people have aspirations within a place; and some within a place have aspirations within the place.*

The two symbols (O and I) define an orientation. The first letter refers to the place where the economic actor is located; the second refers to where economic opportunity is sought. Considering a given place, a person living outside can have only an O–I orientation toward that place. Someone living inside the place can have one of the inside orientations (I–O or I–I). Place orientation is defined with respect to particular economic decisions in which economic actors seek to execute economic transactions with respect to particular resources or opportunities. People's place orientation then is defined by both their location and by the sets of economic transactions in which they seek to engage. Since these are shaped by the current opportunities, and since opportunities change over time, place orientation is both dynamic and endogenous.

The place orientation of an individual represents an integrated set of attitudes, beliefs, and predispositions that the person holds toward places, including rural and urban places. Such attitudes, beliefs, and predispositions can be shaped or reshaped by natural and social environments of the place where the individual lives, at least in the long run. Thus, the interaction between people and place is dynamic in the long run.

Proposition 2 (endogeneity). *The orientations of individuals or groups are shaped by their natural and social environments.*

Although the place orientations are endogenous in the long run, they are given at a given time and thus can influence decisions. A person with a dominant I–O orientation may be more inclined to make external linkages or migrate to an outside place than a person with a dominant I–I orientation, who tends to stay and interact with people living in the same place. Thus, people's place orientations play a critical role in their

decisions about residence, commuting, migration, investment, and purchase and sale of goods and services.

A person's place orientation can be revealed or displayed in different forms. For example, a farmer with an I–O orientation may sell his or her produce to urban consumers or work part-time in a nearby city. An urban household with an I–O orientation is more likely to visit or move to a rural place than an urban household with an I–I orientation. An individual may have both internal and external linkages. For example, a farmer may sell produce locally and commute to a city for a job, or sell agricultural commodities to a global market and look for custom farm work with neighbors.

A firm can also have a place orientation, but one determined by its management and employees as well as the business owners. A firm with a dominant I–O orientation may be more inclined to take advantage of the opportunities offered by the outside world, such as new customer bases, new sources of inputs, or more favorable business environments (e.g. less congestion, less competition).

The link of people to places means that a place is characterized by two sets of variables: (1) the orientations of individuals living in the community; and (2) the natural and social environments of the community. Although these two sets of characteristics can be treated as exogenous and separate variables in the short run, they are endogenous in the long run. Natural and social environments shape people's orientations, which in turn affect the social and natural environments. Each place may have a different mix of people and thus different average levels of outside orientation. This is determined endogenously over time.

If place orientation is a fundamental consideration in economic decisionmaking, there should be evidence that they care about the places in which they live. Loveridge, Yi, and Bokemeier (2009) examined attachment to place with data from a national telephone survey of working-age adults conducted in 2006 in which respondents were asked how much money it would take to convince them to move to a similar community 500 miles away. About 3 percent of the population were labeled as unconditional migrants; they responded that it would take zero money to make them want to move. About one-third of the population were considered "unconditionally rooted": these respondents indicated either that "no amount of money could make me want to move" or said they would require more than $500,000 to induce them to move. There were regional differences in the attachment to place. Loveridge, Yi, and Bokemeier divided the nation into five regions: Great Plains, Plantation Belt, Appalachia, the Borderlands, and the rest of the United States. Only 23 percent of the working-age adults in the Plantation Belt were unconditionally rooted, as compared with 40 percent in the Borderlands and 33 percent in the rest of the United States. The average (mean) amount required to induce these adults to move in the Borderlands was only $43,170 as compared with $95,910 in Appalachia and $61,250 in rest of the country.

Proposition 2 of our framework states that place orientation is endogenous—that place orientation is shaped by one's social and economic environment. Fisher (2005) provides evidence that location choice is endogenous. In her examination of why poverty rates are higher in rural America than in urban America, she concludes that people are poorer in rural areas both because there are poorer opportunities and because those

with lower human and financial capital select to live in poorer regions. This is consistent with the proposition that poor opportunities shape a person's place orientation and that one's place orientation helps to determine residential location choices.

Unique features of the framework

Our framework has three unique features compared with the existing theories. *First, it links people to places as decisions are made and thus opens the door to considering decentralization, as well as centralization.* The existing theories, including central place theory, endogenous growth theory, and new economic geography, provide powerful tools for identifying the driving forces of centralization. They emphasize scale economies, knowledge spillovers, and labor market pooling as sources of increasing returns to scale. The theories, however, do not reflect where the buyer/seller of an input or output lives except to the extent that it affects transportation costs. Thus, the relation of people to a place is not considered except for the reaction of people to the cost of distance.

Our framework, by contrast, focuses on how the location of the economic actors across the landscape affects the economy. This opens the door to considering decentralization. To illustrate, consider three types of I–O orientations of a rural firm and a rural household:

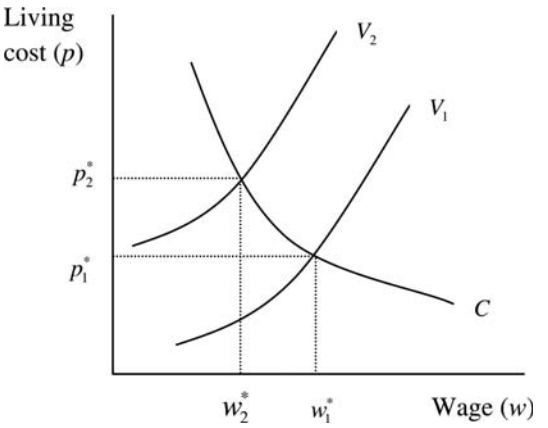
A. (I–O): this rural firm grows and exports grain to an urban area.
B. (I–O): this rural household includes several youths who expect to migrate to an urban place later in life.
C. (I–O): this rural firm (or household) is attempting to persuade outside interests to invest in rural real estate they own or control.

In cases A and B, the (I–O) orientation exerts a centralizing influence, but in case C, the (I–O) orientation is decentralizing.

In a similar fashion, the orientations of urban households and firms can exert either centralizing or decentralizing influences. For example, I–O orientations of urban households, together with decreasing transportation costs, exert a decentralizing influence in the form of suburbanization. When transportation costs fall below a certain level, some urban households with a dominant I–O orientation may decide to move to a rural community to live. Thus, the influence of orientations is affected by external forces, such as advancements in transportation technologies and the information superhighway.

Our orientation framework also provides an explanation for spatial inequality in economic development in rural America. To illustrate, consider two rural places where everything is the same except that people in place 1 are more outside oriented than people in place 2, as shown in figure 8. The two upward-sloping curves represent households' iso-utility or tradeoff curves in the two places. The iso-utility curves are upward sloping because, to maintain the same utility, a higher living cost must be compensated by higher wages. The tradeoff curve for place 1 is lower because, for a given level of living cost, households that are more outside oriented require a higher wage to stay. The downward-sloping curve represents the firm's iso-cost curve. To maintain the same cost, higher wage costs must be offset with lower rental costs (here we assume places with higher living costs also have higher rental costs). In equilibrium, place 1

Figure 8 The Equilibrium Level of Wage and Living Costs in Two Rural Places with Different I–O Orientations



(more I–O oriented) has a higher wage and lower living costs. If firms are also more productive in places that are more outside oriented, place 2 could have both higher wage and higher living costs.

This simple example illustrates that rural places may face different economic situations when they have different place orientations. This adds another dimension to the Roback model of spatial equilibrium with amenities (Roback, 1982). Because place orientations are shaped by the social and natural environments, we must consider history, cultures, and institutions, as well as natural environments, when analyzing spatial heterogeneity in economic development in rural places.

The second unique feature of our framework is that it permits people's orientations to be shaped by their natural and social environments. The location fundamentals theory asserts that the spatial heterogeneity in natural endowments is a major determinant of urban development patterns. Thus, spatial heterogeneity in natural endowments can explain uneven economic development. Our framework goes beyond this by considering how natural endowments and institutions could shape people's aspirations and perspectives. It permits the relation of people to places to emerge endogenously and recognizes that orientations (aspirations) of people and groups are determined in part by their natural and social environments.

The third unique feature of our framework is that it treats rural–urban relations as dynamic two-way interactions. The existing theory tends to treat rural places as mere victims of "urban invasion." In contrast, our framework assumes that many rural people have external aspirations and are motivated to take advantage of the opportunities offered by "urban invasion." The explosion of nurseries, vegetable farms, vineyards, and other high-value crop industries in many suburban areas illustrates how quickly agricultural economies can respond and evolve.

Viewing rural–urban relations as dynamic two-way interactions not only helps us to understand rural–urban relationships better, but also provides important policy implications. Indeed, many see urban expansions into traditionally rural or agricultural areas as an aberration. A more constructive view would view urbanization as a positive force that creates both opportunities and challenges for rural communities (Schultz 1953; Partridge et al. 2007, 2008; Irwin et al. 2010). Whether urbanization

presents mainly opportunities or primarily challenges for rural communities depends on a number of factors, including attitudes and orientations of rural communities toward urbanization. A recent study by Wu, Fisher, and Pascual et al. (2011) found that urbanization is not necessarily a bad thing for struggling rural communities, particularly when the objective is to increase net farm income. Urbanization may increase farmers' production costs, but it also creates new opportunities for farmers (growing high-value crops, off-farm employment opportunities, etc.). The benefits outweigh the costs, and net farm income increases with urbanization. Partridge et al. (2007) found that distance is a key factor underlying employment and population growth in nonmetropolitan counties in the United States; those adjacent to metropolitan areas grew fastest during the 1990s. Lopez, Adelaja, and Andrews (1988) found that the effect *of* suburbanization on agricultural profits is positive when capital gains on land are included. Lockeretz (1986, 1989) examined the characteristics of counties by their distance to metro areas and found evidence of a higher standard of living in counties closer to metro areas than in those farther away. However, it is undeniable that in rural communities that have already experienced a high degree of urbanization, continuing urban sprawl may indeed threaten agriculture as a viable way of living.

In summary, assumption 3 in our framework—people and places must be considered jointly—permits us to deduce three unique features relative to the existing theories: it links people to places as decisions are made; it permits the relation of people to places to emerge endogenously and recognizes that orientations of people are shaped by their natural and social environments; and it treats rural–urban relations as dynamic two-way interactions.

The previous discussion of our theoretical framework emphasized place orientation because, as a new concept, it should be elaborated thoroughly. We hope that place orientation will stimulate other researchers to consider other techniques for linking people and places, yet we must not lose sight of the other two assumptions—*comparative advantage*, which is of great importance as decentralization occurs because of the increased demand for heterogeneous goods and services that may be supplied from nearby localities, and the *autonomy* accorded to local places, which applies to local groups as well as households and firms. The three taken together constitute the heart of our theory. In the next section, we illustrate how the "lens" provided by the integrated framework, or model, differs from the existing theories by examining rural–urban interdependence in a historical context.

The Dynamic and Endogenous Nature of Place Orientation

Attention is now directed to the dynamic and endogenous nature of the place orientation (PO) concept with particular attention to its usefulness in economic analysis. In its most basic form PO is a way of linking people and places as economic and social change occurs. It does not establish a set of preferences nor is it a theory of decisionmaking. In part, it is a reaction to rural development literature that implies emphasis should be placed on people or places in public policy design (see Weber 2008 for citations and issues involved). We advance place orientation as a way of

establishing a linkage between people and places that will be useful in economic and public policy analysis. Whether this is a fruitful way of accounting for linkages must be discovered by research that has not yet been conducted. Such research probably would include carefully designed questionnaires to uncover how both rural and urban people regard the concept of 'place' as it has been used here. In the final analysis the usefulness of the PO concept will depend upon whether it results in novel observations that improves an understanding of human choices.

Consider the many ways rural and urban economic processes were integrated during the 20th century. Clearly, specialization and scale economies were of great importance. To this must be added agglomeration economies made possible by cities and metropolitan places. Twentieth-century economic development was made possible by a dynamic interdependency between the rural and urban. Except for brief periods, the dominant migration stream has been from rural to urban places. This migration, together with immigration into the United States, provided cities with a labor supply and consumer purchasing power. Some accounts leave the impression that the countryside was stagnant during this period, but this was not the case. Had it been stagnant, the stream of migrants into the city would not have been possible. Increases in farm labor productivity outstripped nonfarm labor from time to time (Evenson, Waggoner and Ruttan 1979). Specialization and scale economies played a role in both urban and rural economies. One could not have flourished without the other; they worked together.

As city–countryside interdependence grew, the use of space changed as well. Metropolitan places used space more intensively even as they acquired more space: space that was surrendered by nonmetropolitan or rural places. Questions arose that required rural and urban people to come together. For example, how will certain land use be decided? In some cases, this pitted rural against urban people. Yet conflicts also arose within both groups, and common interests came together across the rural–urban divide. When all potential buyers and sellers of heterogeneous land near urban areas are considered, together with overlapping government jurisdictions, it is not surprising that decentralization processes often appear to be an untidy mess. In comparison, rural–urban markets for homogeneous commodities associated with centralization appear tidy indeed.

Generalizations can be drawn from 20th century economic history that is relevant here. The total rural–urban economic system consisted of simultaneous centralizing and decentralizing, interdependent processes. During such economic adjustment processes, urban, as well as rural, households and firms continually revaluate and recalibrate the benefits of space and the cost of distance. The economic transactions that accompany decentralization often appear messy, but, when viewed from the perspective provided by the passage of time, they display certain characteristics as revealed in the earlier literature review in this article. For example, skip distances, as measured by population densities, appear frequently as development occurs. With the passage of time, these distances become less common. This is consistent with what one might expect on the basis of traditional economic theory with respect to land rents as one proceeds outward from the urban core.

Markets, institutions and social capital as related to place orientation

We turn now to the elaboration of the place orientation concept used to link people and places as development occurs. A distinction is made between PO as affected by residence (r) and occupation (o) (symbolically, (PO) r and (PO) o). This distinction makes it possible to consider realistic possibilities such as PO (I – I) r being held simultaneously with PO (I – O) o. This asserts that a person's place orientation is of an inside–inside nature with respect to place of residence. Additionally, such an inside–inside orientation may be consistent, and held simultaneously, with an inside–outside orientation relative to occupation. Reality may be such that a choice must be made between place of residence and occupation, and one or the other must be chosen. As is the case of many rural residents, a commute may be necessary to an outside place if (say) an outside employment opportunity is to be experienced in combination with rural residence.

The traditional family farm made possible identical POs for both residence and occupation. The mutual reinforcement of these two distinct functions of place may explain the long enduring, but often not easily explained, allegiance to family farming. The separate consideration of residence and occupation also is helpful in understanding the high share of the U.S. nonfarm labor force living in rural places. During the 20th century the percentage of the nonfarm labor force with a rural residence was in the neighborhood of 20 to 25. Mills (1995) pointed out that this is a higher percentage of the nonfarm labor force with a rural residence than exists in any other nation. All of the reasons for this are not known, although it is obvious that (I –I) r and (I – O) o place orientations are widespread in rural America. Although the United States has the largest rural share of the nonfarm labor force, this appears not to be a uniquely American phenomenon. Kilkenny (2010) has observed that "over the past two centuries the rural shares of nonfarm populations in developed countries like France, England, and the United States have remained remarkably stable at 20–25 percent" (pp. 455–6).

Even though rural land subject to urbanization is highly heterogeneous, and urban households and firms have varied reasons for acquiring such land, it is not difficult to imagine how willing buyers and sellers could come together on a one-on-one basis. Yet rapid urbanization requires that large tracts of land change hands in relatively short periods of time. An institutional framework within which markets operate has been established in such a way as to make this possible. Institutions such as special districts, zoning, and eminent domain affect market outcomes. We conclude that an important component of rural–urban public policy involves the discovery and grouping of those with compatible, although not necessarily identical, place orientations.

Households and firms on both sides of the rural–urban divide may have compatible place orientations. If those sharing such an orientation can discover this common bond, a basis may exist for the formation of additional social capital. A basis for mutual trust and an expectation of reciprocity may emerge. This social capital may be a forerunner of long-lived institutions such as special districts or zoning requirements. It may also be a basis for small group political activity as particular spatial issues are debated and resolved.

It is not difficult to imagine how a willing buyer and seller may be able to communicate and transact a transfer of property. Yet reality often is very different. Consider the following hypothetical example based on realistic circumstances (see Kunce and Shogren 2008 for a description of the actual situation). Assume an urban firm with an (I – O) place orientation is interested in a rural place for the purpose of extracting minerals for commercial purposes. Consider next (1) those rural land owners whose land may have minerals, (2) those in the affected rural places such as local merchants who may benefit from a greater rural population in that place, (3) local environmentalists opposed to outside investment for mineral extraction, (4) outside environmentalists opposed as well, (5) those who prefer investment in this rural place rather than investment in more fragile places elsewhere, and (6) additional interests, both inside and outside, that have not yet taken a position. Place orientation makes specific the multiplicity of interests that typically arise in connection with issues of this kind.

Economic rewards in rural places and urban–rural decentralization

Apparent differences in economic rewards of rural and urban people were described in considerable detail early in this article. If centralization alone is considered, any disparity in economic rewards would disappear in the long run. In the short run, employment opportunities in urban places may not arise rapidly enough to absorb excess rural labor that results from rural scale efficiencies and improved production techniques. However, if sufficient time is allowed for urban and rural labor markets to adjust, in theory returns will be equalized at the margin for rural and urban labor as excess rural labor migrates to the city. When the problem is framed in this way, rural to urban migration is necessary and sufficient in bringing about equilibrium.

Yet reality is more complex. A voluminous literature exists that seeks to explain why rural–urban disparities in economic rewards may exist for long periods. Weber (2008) has examined this research and concludes that the explanations that have been offered have not been totally satisfactory. Nevertheless the empirical research that has been conducted generally indicates that decentralization has a positive effect on rural income and wealth.

Kilkenny (2008) identifies excess capacity as a chronic economic condition in many rural places. Such excess capacity stems from insufficient population and economic activity to make full use of fixed investments. For example, rural retail establishments may find it necessary to maintain certain store hours in order to serve an occasional, but unpredictable shopper. A different, but useful, view is provided by Hite (1997) that applies mainly to agriculture in rural places. He points to the illiquidity of assets held in specialized enterprises that are distant from urban markets.

Decentralization would address directly the conditions identified by Kilkenny and Hite. Because of the nature of fixed costs, a larger population may be the most direct way of removing excess capacity in many circumstances. It is not surprising that decentralization reduces excess capacity in or near urban–rural transition zones. The Hite example reflects the fact that overcoming distance entails costs. Greater urbanization automatically reduces the amount of space between and among urban and

metropolitan places, including the distant hinterlands. We are accustomed to thinking about the effects of urbanization on nearby rural places. Yet urbanization also has impacts on the distant hinterlands (Starrs, 1995).

We return to migration as a means of addressing rural poverty and low income. Existing research demonstrates that younger rural people with good health and education are more likely to migrate to urban places than are those who possess fewer of these characteristics. Those who do not migrate are likely to have an endogenously determined (I – I) PO, and may plan to remain rural for long periods if not indefinitely. We cannot know how the incomes of those who make such decisions would be affected if they were to migrate to an urban environment. In the absence of such knowledge economists and others have little basis for making recommendations based upon a different PO.

If they remain in a rural place they likely will fashion a life style consistent with the social capital and commercial opportunities available to them. Hirschl and Brown (1995) report at least some rural low-income people are not deeply engaged in market-related activities, although their lifestyles have economic consequences. If PO is endogenously determined, it is useful to imagine developments that would cause an (I–I) PO to change. Imagine that nearby urbanization provides a market for work they might perform and increases the value of any assets they may have. Yet low-income rural people with an (I–I) PO may be affected differently. Consider the opportunity costs of the resources on which their lifestyles depend. Urbanization and greater commercialization of communities and regions may increase the opportunities available to those who control those assets. But subsistence agriculture may be more difficult to establish or maintain in places where commercial agriculture is possible and profitable.

Concluding Remarks

Traditional economic development literature has provided useful explanations of why and how cities and central places have arisen from agrarian societies. Urban and agricultural economics literature emphasized processes by which cities attract people and moved commodities and materials into the city for consumption, processing, and distribution. As cities and metropolitan places grew, they necessarily expanded geographically, and urbanization has become an integral part of urban economic literature.

The outward geographic growth of cities also has had an impact beyond the suburbs. Both positive and negative impacts can be readily observed. Land values and employment opportunities often increase, communities are disrupted, and farms go out of existence. Such developments traditionally have not been treated in a systematic way in the agricultural economics literature. In both popular and scholarly literature, the extension of the city into the countryside typically is referred to as "sprawl." The connotation is that such expansions are an unfortunate, even though inevitable, consequence of economic growth.

Recent agricultural, resource, and rural economics literature has reflected a growing interest in the consequences of urban geographic expansion. The literature reveals that agricultural land use continues near,

and even within, urban growth boundaries, although the commodities produced often are different. Skip distances may exist during the expansion process but are seldom observed in mature settled places. Traditional theory pertaining to land rents would not lead one to expect inefficient land use near central places. Differentials do exist between urban and rural per capita incomes and wealth in contrast to what traditional theory would lead one to expect.

This article was written to provide a systematic treatment of the economics of decentralization that would draw upon and make use of the established literature. This literature directed attention to land use and the welfare of rural people. We developed a definition of place that encompassed concepts from geography, community, and government that together established the framework within which land use decisions are made. We further developed a place orientation (PO) concept that provided a linkage of people and places as decisions were made.

Theoretical development of the place orientation concept led to the conclusion that place orientation is both endogenous and dynamic in origin. This insight called attention to the relative importance of markets, institutions, and social capital in decentralization.

We conclude that the education of economists with an interest in rural and urban economic development should be changed considerably. Those whose primary interest is in rural development need to learn about the role of cities. Those who aspire to learn urban economics should be made aware of rural–urban interdependencies. And economists interested in economic development generally need to understand the basis for, and the consequences of, such interdependence.

The development of a scientific paradigm that internalizes anomalies arising from a different paradigm does not invalidate the theory that gives rise to the anomalies. Traditional economic theory that applies mainly to the economics of centralization remains useful. But it is important to think systematically about the economic processes of decentralization as well. If this is done, important changes in education, research, and public policy will follow.

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