Thinking About Rural Manufacturing
A Brief History

Dennis **Roth**

Rural manufacturing received a big impetus during World War II and has since become an important part of the economy of rural America. Various concepts, such as agglomeration, product cycle, and the filtering-down process, have been used to explain rural manufacturing; the historical development of these concepts is discussed here. After declining in the 1980's, rural manufacturing has rebounded in the 1990's. The increasing use of technology by manufacturers in rural areas holds out hope that these areas will increase their share of skilled and high-paying manufacturing jobs.

Until World War II, American manufacturing capacity was heavily concentrated in the cities of the Northeast and upper Midwest. Beyond these urban enclaves lay small-town America, with an economy largely dependent on agriculture and natural resources. Although the continental United States was never directly threatened by hostile military action, the war unleashed forces that altered the landscape of economic activity, dispersing factories into regions where they had not existed previously. Manufacturing plants began to appear in small towns and rural hinterlands, though this modest trend did not attract much scholarly attention until the late 1950's. Before then, the concept of rural manufacturing would have been a contradiction in terms for most people. However, as with many apparently novel ideas or developments, rural manufacturing had historical roots that long predated the emergence of countryside smokestacks.

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Rural Manufacturing and the Jeffersonian Ideal

According to Thomas Jefferson and his followers, farmers were God's chosen people, made independent and virtuous by honest toil on land they owned. Cities, on the other hand, bred poverty and dependence and weakened the moral fiber needed to sustain democracy. Thus, Jeffersonians advocated policies that would strengthen farm communities and the rural craftsmen supporting them. Influenced by Jefferson, some early advocates of industrial development looked to the countryside rather than to cities as ideal sites for factories. This was not an outlandish proposal at a time when water was still the dominant form of energy used to power the machinery in gristmills, sawmills, and textile mills. Rural factories, "by the fall of waters and the rushing stream," in the words of the Society for Encouragement of Domestic Manufactures, should be promoted because they used an environmentally safe form of energy while giving industrial workers the healthy benefits of country living. When Boston capitalists opened textile factories in the new town of Lowell, MA, in 1822, they had high expectations of saving the United States from the industrial squalor that was overtaking parts of England. Rural residents, on the other hand, were not always willing to encourage urban entrepreneurs, fearing that the presence of factory workers and wealthy capitalists would undermine stable and relatively homogeneous communities.

Of course, these hopes of combining industry and agriculture were not fulfilled. Within a few decades, the New England textile towns were urbanized and the displacement of water by steam and electrical power created economies of scale that favored big cities. Farm and factory went their separate ways and the possibility of joining them was not broached again until the Country Life Movement of the early 20th century.

The Country Life Movement

This movement—loosely composed of academics, journalists, and government officials, many of whom were first-generation farm-to-city transplants—arose as a response to the rapid rural outmi-

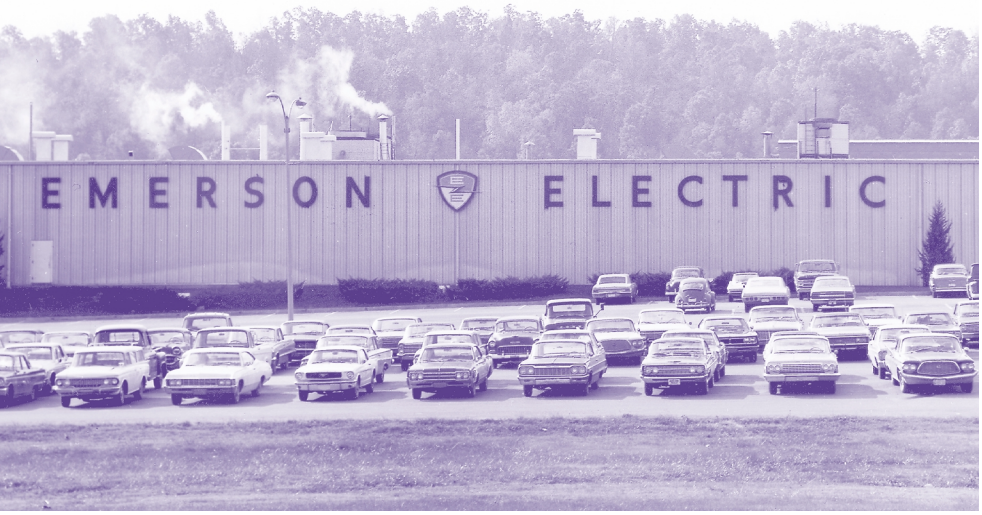
gration of the late 19th century and the growing economic, social, and cultural disparities between countryside and city. For the first time in American history, rural areas were seen as a source of "problems" that required solutions. Country Lifers studied ways to improve rural schools, churches, transportation, and markets, and in 1908, the Country Life Commission, appointed by President Theodore Roosevelt, briefly mentioned stimulating "light industry" as one, albeit minor, way of stabilizing rural populations. Nothing concrete was done to encourage rural manufacturing, but the idea had again been placed into at least limited circulation. When the Great Depression struck in 1929, the idea grew.

The New Deal—The Federal Government Begins To Stimulate Rural Manufacturing

As a boy, Franklin D. Roosevelt spent his most enjoyable days in the countryside of Hyde Park, NY. Throughout his life, he retained a preference for rural ways. In order to help distressed rural communities during the Depression, he proposed marrying agriculture and industry to form what he called "rural industrial groups," a broad program for decentralizing industry and giving families an opportunity to combine factory employment with rural living. Therefore, in 1932, while governor of New York, he sponsored a program to establish 244 "stranded" industrial families on "subsistence" farms in various parts of the State.

When he became President, several of his New Deal agencies, such as the Subsistence Homestead Division of the Department of the Interior, carried this project forward. The idea was to build communities that provided their citizens both with small subsistence farms and off-farm employment opportunities. Later, the Resettlement Administration and its successor, the Farm Security Administration in the U.S. Department of Agriculture, continued this work. However, with both agriculture and industry in crisis during most of the 1930's, it was difficult to move beyond pronouncements to a real program of rural industrialization. For the most part, the kind of "industry" established in New Deal resettlement communities was of the handicraft or cottage industry variety. Of much greater significance for the future of rural industry was the work of New Deal agencies, such as the Tennessee Valley Authority (TVA) and the Rural Electrification Administration (REA), as well as State road-building commissions, which provided essential elements of infrastructure that would be needed by manufacturers.

As TVA and REA were beginning their work, Mississippi in 1936 became the first State to offer subsidies to attract new industries. In the next several years, many other southern States followed suit. At first, most migrating industries settled in southern cities but, because the South was the most rural region in the East, some branch plants of northern-based companies also ended up in small rural towns. That rural industrialization began in the South was the result of its proximity to eastern cities and its abundance of labor. (Textile mills began to move into the South as early as the 1890's.) Although the rural South experienced great outmigration in the 1930's and beyond, it still had the most densely settled rural areas with potential pools of cheap and available labor. And perhaps because of its vanguard status in this regard, many of the modern "prophets" of rural development came from this region. Among the most notable were True D. Morse, who as USDA's Under Secretary of Agriculture from 1953 to 1960 during the Eisenhower Administration began the Federal Government's postwar rural development program, and Assistant Secretary John Baker (1961-69), who was a



Emerson Electric of Russellville, Ky. Photo courtesy Soil Conservation Service.

leader during the Kennedy-Johnson era.

During World War II, the groundwork for a much more expansive industrial growth was laid in the South, as well as other parts of the country. Factories were moved or newly built away from potential attack on the east and west coasts, military posts sprang up in many rural areas, populations were redistributed, and millions of rural people received training either in the military or in war-related industries. The century-long clustering of industrial activity in the Northeast was beginning to break down.

The National Planning Association's 1947 Report on Southern Industry

In 1947, the National Planning Association became the first organization to take a serious interest in this trend toward industrial dispersal and it commissioned two Duke University professors, Glenn McLaughlin and Stefan Robock, to study it. Their book, *Why Industry Moves South*, was published 2 years later. Produced during the earliest years of the postwar economic boom, the book forecast a bright future for southern (and southern rural) industrialization.

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The authors claimed that their research was the first case study of industrial location, all previous efforts having been "theoretical or statistical analyses of aggregate data." They were also the first to use survey methodology, in this instance personal interviews "on the assumption that businessmen would take time to talk about their plant location decisions, but would not be likely to fill out a lengthy questionnaire." Ironically, according to the authors, almost all of their interviews were conducted in northern cities, the home bases of virtually all of the southern branch plants.

A prewar survey would have focused almost entirely on timber and textile plants but, southern industry having diversified considerably during the war, this study encompassed chemicals, farm equipment, tires, auto assembly, electrical equipment, aluminum, footwear, and food products as well. Only a sample of plants was included, because in 1947, the South already had 39,699 manufacturing establishments, an increase of 33 percent over the 1939 total.

The authors looked at markets, materials, and labor and concluded that, in general, the availability of new markets or the proximity to old ones was the main reason for locating industry in the South. They cited the establishment of a large Celanese plant in Rock Hill, SC, near the growing textile industry of the Carolinas; farm machinery factories to supply an increasingly mechanized southern agriculture; or plants in Kentucky and Arkansas to supply northern and western markets. But when they discussed operations in small towns of 25,000 inhabitants or fewer, they usually emphasized the availability, tractability, or low pay of local labor. For example, they found that in the shoe industry—because the value of the finished product was high in relation to weight—transportation costs were of small concern compared with labor costs. As a result, lower labor costs "have made the South and rural areas in general more attractive for shoe plants than urban areas and the Northeast." In the southern textile industry, low rural wages had always been an attraction, but in the postwar environment of growing labor unions, northern labor strikes, and high job turnover, abundant sources of nonunionized labor meant that manufacturing plants could work around the clock without interruption. Many companies looked for small towns where they would be the major employers and chief political arbiters and avoided towns with established industries where they might get the "dregs" of the labor supply and be excluded from political influence.

Summarizing their survey data on southern labor, McLaughlin and Robock concluded that large plants moved to cities where they could obtain the quantity and variety of workers they needed but that, all things being equal, a majority of plants preferred to locate outside of large metropolitan areas to avoid high property taxes and any "labor disturbance which might affect labor generally within a large population area."

In addition to the specific information that it provided, *Why Industry Moves South* demonstrated the ability of surveys and case studies to capture trends that are not always readily apparent in analyses of aggregate data. For instance, in 1960, Harvey S. Perloff and Edgar S. Dunn, Jr., co-authored *Regions, Resources and Economic Growth*, based on 1950 census data. They found that regional disparities had lessened since 1910, but that the amount of change was not great. Most new industrial activity was in the Upper Midwest, which was already heavily urbanized. The older urban-industrial areas tended to "sustain the greatest relative losses in manufacturing employment," but

it was "no longer true that the more rural-agricultural states necessarily experience the greatest net upward shifts."

Although they were unable to isolate any pronounced trend in the location of industry, Perloff and Dunn did note important changes in the national economy. Every region could expect to enjoy rising levels of income and production if some were "willing to face up to the need for a relative 'emptying out' [i.e., of agricultural regions] when the overall situation with regard to relative advantages among regions calls for it." But if such regions, especially those that had been densely settled, were to lose agricultural population, how long could that continue before their habitable spaces would be occupied by other forms of economic activity? In other words, if agriculture alone could no longer sustain an adequate population base, something else would. In retrospect, then, Perloff and Dunn's emphasis on equilibrium forces in the national economy was also consistent with the idea that urban and rural economic differences were decreasing and with a corollary assumption that there was a kind of inevitability to rural industrialization as a demographic replacement for agriculture.

Rural Industry Takes Off, 1955 to 1970

By the early 1950's, improvements in agricultural technology and productivity were having a powerful effect on the rural landscape. The number of farms was decreasing rapidly, threatening many small rural communities that depended on agriculture for their economic survival. In 1954, Under Secretary of Agriculture True D. Morse launched the Federal Government's first sustained investigation, since the New Deal, into the problems of low-income farmers and nonfarm rural populations. In 1955, USDA economists published *Development of Agriculture's Human Resources*, including several recommendations concerning rural industrialization. Very little Federal money was invested to implement these proposals, but government exhortation and "cheerleading" did stimulate wider interest in the interrelated issues of rural development and rural industrialization. By 1960, an increasing number of researchers were publishing articles and monographs on these topics. Virtually all of these were case studies dealing with the impact of specific industries on small rural towns. In later years, analysts confirmed that these were important years in the spatial redistribution of American manufacturing. By the mid-1950's, a broad-based regional dispersal was taking place and then, beginning approximately in 1958, industry began to move increasingly into nonurban areas.

During the Kennedy and Johnson administrations, the modest rural development program begun by Morse was transformed into a multipronged attack on rural poverty and unemployment. Such agencies as the Office of Economic Opportunity, the Appalachian Regional Commission, the Economic Development Administration in the Department of Commerce, and the Farmers Home Administration in the Department of Agriculture invested billions of dollars in loans and grants to stimulate industrial development in poor and distressed rural areas. In the 1960's and 1970's, many commentators questioned the value of these programs and assumed their association with the growth of rural manufacturing was purely coincidental. From 1960 to 1970, manufacturing grew by only 4 percent in metro areas but 22 percent in nonmetro areas, with even stronger growth in sparsely populated areas. By the 1980's, when rural industry was in distress and Federal funding was down, rural development experts were more willing to concede some efficacy to these once-maligned programs.

The 1960's also witnessed a growing scholarly interest in rural manufacturing, and it was this decade that produced some of the most important critical concepts in the field. Surprisingly, until the early 1970's, when demographic evidence of a rural population turnaround became clear, many economists refused to accept rural industrialization as a real phenomenon. For 50 years, economic theory had affirmed that industries clustered together or "agglomerated" because of favorable backward and forward linkages with each other and because of their proximity to specialized services and labor in cities. Economic theory could justify the location of only natural resource industries in rural areas. Thus, studies of rural manufacturing were dismissed as anecdotal. Theory, however, was being modified to accommodate the growing body of empirical evidence, especially with the introduction in 1966 of the notion of a "product cycle" in the manufacturing process, and in 1969 of a locational "filtering-down" of stages of that cycle to areas with the best combination of productive factors.

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According to product-cycle theory, new industries begin life as innovating enterprises requiring limited amounts of capital but large quantities of skilled labor and sophisticated services. As they mature and satisfy market demand, their production becomes routinized and less dependent on concentrations of skilled labor and services. Once production has been routinized, manufacturing branch plants can be filtered down to places with less costly and less skilled labor, while top management exercises overall control from urban headquarters. These ideas took a few years to percolate through the profession but, once they had, they were provisionally accepted as explaining the data on rural industrialization.

The 1970's—Interest in Rural Manufacturing Grows

The 1970 census figures showing a population turnaround in many nonmetro counties further stimulated interest in rural manufacturing. In previous years, economists had dominated this field of study, but in the 1970's, they were joined by an increasing number of sociologists, geographers, and political scientists. During this decade, the first books on rural manufacturing were published; these books examined the social and economic effects of rural industrialization and, to varying degrees, the implications of the filtering-down phenomenon for the future development of rural economies.

Written in 1976 by sociologist Gene F. Summers and several of his graduate students at the University of Wisconsin, *Industrial Invasion of Nonmetropolitan America* analyzed 186 publications written during the previous two decades. Calling rural industrialization a "process of societal realignment with a scope and magnitude rivaling the emergence of industry in the last century," the authors chose an alarmist title for their book to bring attention to both benefits and dangers. Nonmetro industrialization was a third major form of development to be distinguished from the original "industrial revolution" and the "modernization of traditional economies" because it involved the spread of institutions within an already integrated national state. Given this imposing definition, it is not surprising that the field attracted more attention during the 1970's.

Many of the findings of *Industrial Invasion* derive from the fact that its authors were studying the far-reaching impacts of large institutions on small communities that lack the ability to fully absorb those impacts. Known as "leakage," this phenomenon was first identified in 1965. Thus, branch plants in rural communities may not benefit the poor and unemployed because they bring employees with them, hire more skilled inmigrants, or stimulate long commuting from other communities. Also, because a branch plant has many economic linkages outside the local community, its activities create a much smaller multiplier effect than its urban counterparts. As a consequence, wages, per capita incomes, and fiscal benefits did not seem to rise to the extent previously assumed. In general, *Industrial Invasion* was more cautious in its evaluation of rural industrialization than many previous efforts, although it did strongly recommend that neighboring communities work together to mitigate the effects of leakage and low multipliers.

In other publications of the 1970's, authors looked for evidence that rural America was attracting more high-wage jobs, that fundamental changes in transportation and communication technologies were making it less likely that only low-skill and low-wage jobs would be filtered down to rural areas, or that service industries were becoming more important.

Thomas Till's 1981 contribution to *Nonmetropolitan America in Transition* summarized the state of knowledge at the end of the "rural renaissance" decade. According to Till, much of the growth in rural industry in the South during the 1960's and in the rest of the country in the early 1970's occurred in high-wage, fast-growing industries. He was also more optimistic than Summers about the local effects of manufacturing operations, stating that the poor and unemployed climb out of poverty "through the multiple-earner, multiple-job process, even if each job by itself pays low wages," that the "majority of employment goes to local workers," and that as many as one half of the inmigrants are "returnees to the area often bringing back the important human capital skills of education and job-training that were lost by their migration." Pointing to the job-creating potential of small companies, Till recommended that, instead of enticing branch plants, rural areas should encourage new companies or the expansion of existing ones, an idea that was to become more common in following years. Finally, he wondered about the future of nonmetro employment if more rural manufacturers transferred their operations to lesser developed countries. This fear began to appear in the literature in the late 1970's and soon would pervade it.

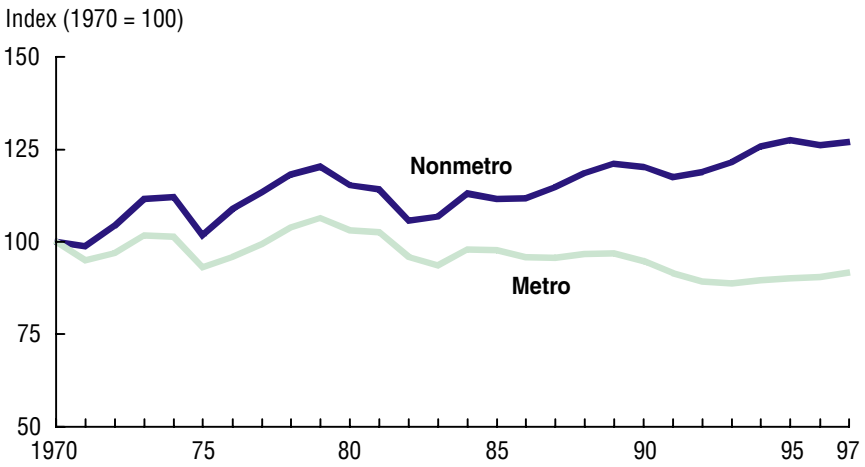
The 1980's and Beyond

By the end of the 1970's, four decades of industrial deconcentra-

Figure 1

Manufacturing employment, metro and nonmetro counties, 1970-97

After falling in the early 1980's, nonmetro manufacturing employment has turned around in the 1990's



Note: Based on 1983 metro-nonmetro definition.
Source: ERS analysis of Bureau of Economic Analysis, Regional Economic Information System data.

tion had significantly altered the American economic landscape. In 1947, the "older" (census definition as of 1963) metro areas of the Northeast and Midwest had 62.6 percent of U.S. manufacturing employment, but in 1977, that figure had fallen to 45.5 percent. On the other hand, the share held by continuously nonmetro and new metro areas (counties that had grown from nonmetro to metro status) in the South, Midwest, and West rose from 15.4 percent to 22.4 percent. "Older" metro areas in the West and South also increased their percentage share.

Employment in rural manufacturing peaked in 1974 and then fell with the recession of 1973-75. Full recovery was not attained until the end of the decade (fig. 1). In 1979, manufacturing employed 21.4 million nationwide, of which 6 million worked in nonmetro areas. In 1980-82, during the deepest recessionary period since World War II, manufacturing employment declined to 18.4 million and 4.9 million, respectively. Rural areas recovered more slowly than the rest of the country so that, by the end of 1987, when national manufacturing employment had risen to 19.3 million, the nonmetro workforce had barely increased to 5 million. In other words, nearly half of the losses in manufacturing employment since 1979 had come from nonmetro areas. Remote and sparsely populated rural counties were hardest hit, reversing the encouraging trend of the 1960's. These figures, combined with the fact that nonmetro areas had an unemployment rate 1.5 percentage points above the national average throughout the 1980's, provoked speculation about a decoupling of urban and rural economies. Moreover, the increasing number of manufacturers moving overseas conjured images of rural America becoming a way station for companies filtering down and then out. Once seen as a treadmill of low-paying jobs, the filtering-down process was perhaps becoming a conveyor belt of jobs to the global economy.

By the early 1990's, rural manufacturing had recovered to its 1979 level amidst an ongoing pattern of industrial dispersal. Nonmetro populations also began to grow again. In 1992, the older metro areas of the Northeast and Midwest had only 36.2 percent of manufacturing employment, while continuously nonmetro and new metro areas of the Midwest, South, and West had 24.8 percent. Remote and sparsely populated rural areas benefited the most from the recovery.

The economic recession of the 1980's was paralleled by a slowdown in scholarly output. No books on rural industry were published during the decade, except for David A. Reed's 1989 monograph, *The Winnowing: Economic Change in Rural America*, which cast a bleak eye on the future of rural industry. Journal articles and papers, however, continued to appear, including an analysis in 1989 of the product cycle and high-tech industries in nonmetro areas by ERS economist James P. Miller.

Using a more extensive and discriminating data set than had previously been employed (the Brookings Institute's U.S. Establishment and Enterprise Microdata), Miller's nationwide analysis covered the years 1976-80. His data showed that new technology firms were less likely to locate in nonmetro areas and, if they did, generated far fewer jobs than urban firms. High-tech firms in the early stages of development were still drawn to urban areas because of "agglomerative" advantages. High-technology establishments in nonmetro areas, however, tended to be routine production affiliates of urban-based corporations. These affiliates hired mostly unskilled, low-wage labor and thus had "about the same impact on the rural economy as the typical low-

Table 1
Nonmetro manufacturing employment by sector and region, 1996
The South remains the region with the most nonmetro jobs

Item	Nonmetro region[1]			
	Northeast	Midwest	South	West
	1,000 jobs			
Total employment[2]	2,980	9,568	12,970	5,101
Manufacturing employment[2]	450	1,634	2,371	412
	Percent			
Manufacturing's share of total employment	15.1	17.1	18.3	8.1
Manufacturing sector shares:[3]				
Food and tobacco	6.2	13.0	11.7	18.3
Textiles and apparel	9.3	3.4	24.9	2.4
Lumber, furniture, paper, wood products	18.7	12.7	19.1	32.8
Chemicals, petroleum, rubber, plastics	8.8	10.1	10.0	5.8
Metal products, equipment, instruments	42.6	48.6	28.6	25.5
Other manufacturing	14.3	12.2	7.5	15.2
Total	100.0	100.0	100.0	100.0

[1]Census regions.
[2]Source: ERS analysis of Bureau of Economic Analysis, Regional Economic Information System.
[3]Source: ERS analysis of Claritas, Inc., Enhanced County Business Patterns 1996 data. Sector classfications are groupings of two-digit Standard Industrial Classification (SIC) categories.

wage, routine manufacturing operation that has been attracted to nonmetropolitan areas in the past." Just as agglomeration theory before 1966 discounted the reality of rural manufacturing, so product-cycle theory in the 1980's seemed to foreclose the possibility that rural areas could ever promote high-wage, high-skill manufacturing. But as rural economies began to rebound in the 1990's, some writers and analysts began to question the assumption that rural industry would always be stuck on the low-wage track.

David Heenan's *The New Corporate Frontier: The Big Move to Small Town, USA* (1991) dismisses the economic potential of most rural areas but sees hope in the growth of "penturbia," a gentrified vision of towns and small cities scattered across the landscape with the service and lifestyle amenities attractive to new and innovative businesses. His contention that major advances in telecommunications are creating a "footloose economy that permits firms to locate where they want to be, not where the traditional centers of finance dictate they have to be" supports the prospect that the corporate move to small towns can be broadened. Stuart A. Rosenfeld's *Competitive Manufacturing: New Strategies for Regional Development* (1992) and Amy Glasmeier's (et al.) *Branch Plants and Rural Development in the Age of Globalization* (1995) see this as coming about through greater emphasis on worker training and incentives for new business startup and expansion. Both believe that the strategy of attracting footloose branch plants by offering better tax and financial inducements than the next community has come to an end and that rural developers must devise alternative strategies for promoting local economic growth.

In 1996, ERS completed the most extensive national survey of rural manufacturing ever. Like the 1947 survey of southern manufacturing, the ERS survey uncovered an apparent trend not picked up in analyses of aggregate employment data. The 3,909 establishments surveyed in metro and nonmetro locations were "surprisingly similar in their adoption of new technologies, worker skill requirements, use of government programs and technical assistance. . ." The ERS survey, individual case studies, and analyses such as Timothy Wojan's on the diffusion of management practices in urban and rural areas suggest that the use of aggregate employment data to support product-cycle theory may be masking a significant development. An increasing number of rural manufacturers now rely on various computerized and electronic systems to control virtually all phases of their production, marketing, and distribution. Strictly speaking, these plants are not "high-tech" because they do not employ teams of innovation-driven engineers and research scientists, but they are "new tech" in the way their adoption of technology requires more highly trained and skilled workers than in the past. Product-cycle theory may be obsolete in this environment of "new tech" and better

Table 2
Manufacturing-population ratio by metro and nonmetro region, 1920-97
Manufacturing now accounts for a larger share of jobs in nonmetro areas than in metro areas

Region	1920	1970	1997
		Jobs per 100 persons	
Metro counties	11.7	10.6	7.0
Northeast	14.9	12.3	6.7
Midwest	12.7	13.3	9.6
South	6.3	8.2	6.1
West	7.3	7.9	6.3
Nonmetro counties	3.5	8.3	8.3
Northeast	9.4	11.1	7.8
Midwest	3.0	7.6	9.4
South	2.6	8.9	8.9
West	3.8	5.1	4.4

Note: Table shows ratio of manufacturing jobs to total population. The 1993 definition of metro counties was used for each year.
Source: ERS analysis of data from Censuses of Population and Agriculture 1920, and Bureau of Economic Analysis, Regional Economic Information System.

trained workers. Rural enterprises are not in the vanguard of technological change, but their use of technology can provide their employees with better lives than predicted by the assumptions of the product cycle.

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