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ABSTRACT

Technological change, globalization, and localization have changed rural economies. They have increased labor productivity, reducing the importance of labor costs in location decisions; decreased the importance of distance; increased the importance of economies of scale; and increased the role of local conditions and choices in determining community prosperity. With farm income representing less than 2 percent of total income nationwide, rural communities are less dependent on farming. Increased industrialization of agriculture has weakened the ties between farms and their communities, with many nonfarm rural residents concerned about environmental effects, tax limitations, and the impact of in-migration to fill low-wage jobs. However, the growing spatial concentration of industrial agriculture is increasing the dependency of more isolated rural areas on particular firms. "Connected" rural areas are growing and diversifying due to in-migration of relatively affluent, educated people seeking the rural life style. Such communities face serious land-use issues as they become more suburban. On the other hand, isolated rural communities have stable or declining populations. Telecommunications infrastructure is inadequate and costly, yet businesses and schools are becoming increasingly dependent on the Internet. Tax bases are declining, leaving school districts and community services with inadequate financing. These factors suggest that agricultural policy cannot continue to serve as rural policy. With current policies, the divergence between connected and isolated rural communities will continue. A new, nonagricultural rural policy could take advantage of decreasing demand for proximate labor, decreasing costs of distance, and increasing demand for space and the rural lifestyle and help rural communities contribute to the national economy. (Includes discussion transcript.) (TD)

The Rural Economy in a New Century

Thomas G. Johnson

This paper discusses the economic status of rural America (and many other parts of the world) at the millennium. It focuses on the current status of rural areas and the incipient forces that will change life in rural areas through the early 21st century. It also explores the changing role of rural America within the larger U.S. economy.

What is meant by rural and urban? Throughout this paper I will refer to comparisons between metropolitan and nonmetropolitan counties and their equivalents. Metro (or urban) places have a core city with at least 50,000 residents and an area population of at least 100,000 residents in the most recent census. Nonmetro (rural) counties are all other counties. It is important to point out that this census-based definition of nonmetro includes some distinctly rural areas that happen to fall in the shadow of cities. It also means that many nonmetro residents live in small cities.

At the dawn of the 21st century rural America faces unprecedented change. But for at least the last half century many rural communities have been on a demographic and economic roller coaster.

Since at least 1950 the status and role of rural America within the larger economy were somewhat clearer (at least in retrospect) than they have been in the last quarter century. In general, urban areas produced products in the early stages of the product cycle, while rural areas generated raw materials, food and energy, and in some regions, provided low-cost labor for the production of goods in the mature stage of their product cycle. Rural communities depended on the income and employment generated by farms, farm policy, and farm families. Average farm size was increasing while farm numbers were declining. Excess labor from farm families joined the local or urban labor markets. Manufacturing firms located in least-cost locations (increasingly in the southern and western Sunbelt regions). The labor force followed jobs, which in turn followed inexpensive inputs, markets, and business climate.

As the traditional rural industries became more capital intensive, rural employment bases shrank and populations declined. But at least rural communities could count on the linkages between their agricultural, mining, and manufacturing sectors and their financial, trade, and service sectors. New economic activities, when they occurred, had significant and predictable multiplier effects on the rest of the local economy. Economic development strategies for rural areas, while often of limited success, were simple—support agriculture, forestry, and mining and attract manufacturing. These basic economic engines would then generate multiplier effects in the service sectors. They would also generate the tax base needed to run local government. The economic fortunes of individual rural communities, though not particularly good, were closer to that of the average community than they have been since.

Local government itself was relatively simple—collect taxes and provide a rather static array of public services. The more aggressive local governments were actively involved in industrial attraction.

Then new forces began to influence rural areas. In the 1970s the population turnaround meant growth for many rural areas for the first time in many decades. The outflow of rural youth and the most employable members of the labor force declined but, more importantly, a significant number of people were choosing to migrate to rural areas—choosing a rural lifestyle.

The return to population decline in the 1980s seemed to mark the end of the population turnaround. In retrospect it now seems more likely that the 1980s were just a short setback in a fundamental change in settlement patterns in the U.S. So many fundamental forces affecting rural areas—deregulation, the dismantling of community safety net programs, the globalization of economic relationships, and technology—had changed such that the economies of rural areas were altered forever. There was also a fundamental transformation in the sectoral structure of rural areas. The basic economic rules were different than when the short-lived population turnaround began. Some communities used the experiences and resources gained during the 1970s to free themselves from the downward economic spiral. Other communities fell back into decline.

In the final decade of the 20th century, population growth returned to many rural communities in America. Yet the mixed experience of rural communities in the 1980s remains. Despite the fact that growth is occurring in rural communities in every region of the U.S., many rural communities continue to lose population. One-quarter of all rural communities continue to decline, and three-quarters of all nonmetro growth occurred in just one-third of nonmetro counties (USDA-ERS). Almost all the declining counties are in the plains region from North Dakota to Texas. Rural areas are increasingly attractive to new residents but not in all regions. Most growth is in areas adjacent to the larger cities while peripheral areas continue to decline.

The following map, prepared by USDA-ERS, shows the dispersed nature of rural growth. Notice that almost all the declining counties are in the plains region from North Dakota to Texas.

The Changing Rural Economy

Obviously, one cannot understand the changes occurring in rural communities without understanding the changes, mostly global, occurring in the broader economy. Several forces have combined and are leading to significant changes in rural life in the U.S. and throughout the world. These forces include changing technology, globalization, and localization.

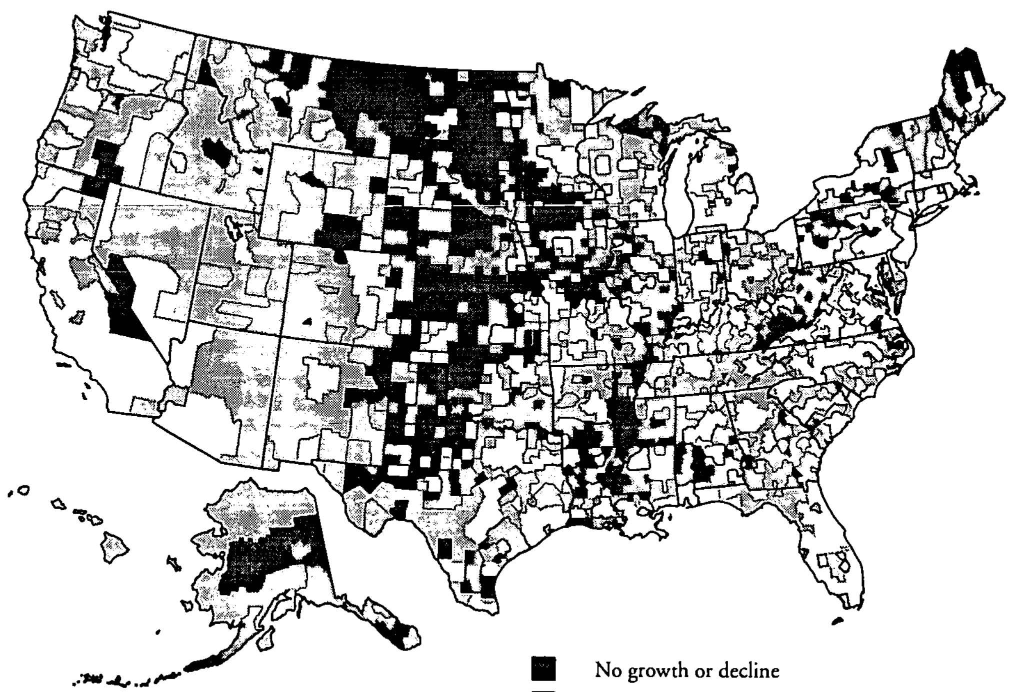
Technological change

Technological change is so ubiquitous that it heads most lists of change. Technological change is nothing new to economies dependent on agriculture, mining, forestry, or manufacturing. No sector has been affected more fundamentally by technological change than agriculture.

From the rural community's perspective, technological change affects more than just employment patterns. In production, the most significant economic forces are the rising importance of information, communication, robotics, artificial intelligence, genetic engineering, and other embodiments of technology. In addition to the direct effects of technology on employment, it has led to increased use of services (particularly information-related services) and reduced use of goods (particularly raw materials) in the production processes of other manufacturers.

The productivity of labor in most goods producing industries has risen dramatically—approximately fourfold, or 300 percent in the last 40 years. The productivity of labor in services, on the other

Figure 1
NONMETRO POPULATION CHANGE, 1990-98



Prepared by the Economic Research Service, USDA
Source: Bureau of the Census

hand, has increased considerably less—about 25 percent. These increases have been accomplished by combining increasingly greater amounts of capital with each unit of labor. Since the demands for many goods have risen only modestly, the growth of employment in these industries has been relatively meager. Some of this new capital has been introduced to take advantage of the emerging technologies discussed above, while other capital has been substituted for high-cost labor. It is important to note that as this trend progresses, the cost of labor becomes less and less important in location and investment decisions because it makes up a declining portion of total costs. This process, then, can have positive effects on income, job security, etc., even while it reduces employment.

As a consequence of technological change, goods production and employment have become decoupled. Production has increased while employment has decreased. Intersectoral linkages have replaced intrasectoral linkages. In addition, the product cycle has been broken, at least from the perspective of domestic rural economies. Rural areas are losing some of their comparative advantage in standardized goods (commodity) producing industries that use labor extensively.

Technological change also affects the relationship that people share with each other, with their communities, and with their governments. People are more mobile, more flexible in their choices of employment and residence, and have greater access to information. Information and communication technology (ICT), especially, has changed the nature of distance. Distance has been made less important by technology but that same technology has increased the importance of being connected and connected to the right places. As Malecki points out,

> For people in local places, it is important perhaps crucial to have links to the global networks of large firms where information, commerce, and decisions are centered. Links to global networks no longer require proximity, but they do require having links and using them to obtain and exchange information. The "links" are those of individuals' personal networks and the business networks of highly competitive firms with their suppliers, customers, and other sources of knowledge. The cost of being unconnected or remote is a higher cost of operation, usually in the form of a time penalty.

The linkage between productive activity and distribution of income has changed. The substitution of capital for labor affects the functional distribution of income by shifting returns from the owners of human capital to the owners of physical capital. Between 1959 and 1999 wages and salaries declined as a percent of personal income from 66 percent to 57 percent. At the same time dividends, rent, and interest increased from 13 percent to 19 percent of personal income (Chart 1).

In the case of agriculture this capitalization has resulted in larger farms, shrinking farm population, and declining labor income. However, these changes are not nearly as dramatic as those occurring in some mining, forestry, and manufacturing dependent communities. Unlike agriculture, where the owners of the physical capital are much like the owners of the human capital and labor that they are displacing, the owners of physical capital in mining, forestry, and related manufacturing industries are very different from the displaced labor. In addition, the so-called "Wal-Mart effect," in which independent, locally owned retail businesses and service establishments are replaced by large, often international, chain stores, is changing the ownership of physical capital as well.

These new owners of rural physical capital are frequently very affluent, and usually not residents of the community in which their investments are made. They tend to spend their income outside the community and lead to lower employment and income multipliers in the community (Bernat). The income tends to be distributed more unevenly (Bernat) and be more variable in these communities.

Globalization

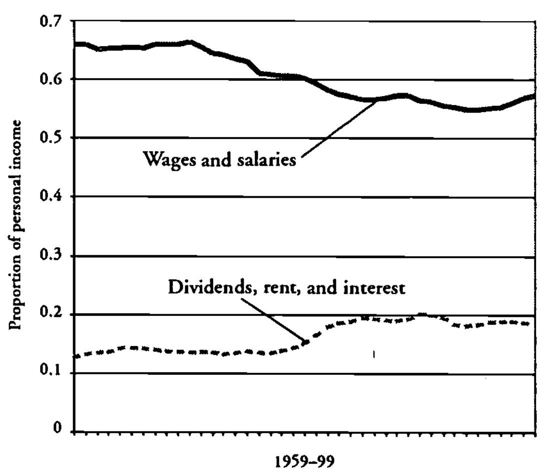
The "globalization" of the economy is so frequently cited as an important economic force that it has become cliché. Increased trade and global competition among firms are usually the assumed consequence of this globalization. Of greater significance to communities, however, is the movement of information, technology, capital, and people. In addition to the competition in markets for goods and services, then, is the heightened competition among communities around the world for jobs, residents, and finances.

As Malecki and others have pointed out, globalization and technological change, especially the changes in information and communication technology (ICT), are closely related forces. ICT has allowed firms to decentralize in a spatial sense while centralizing in an information sense. Firms in many industries, especially producer and consumer services, have distributed activities worldwide and overcome distance with ICT.

In the retailing sector, Wal-Mart uses a leased satellite transponder to link its 1,700 stores to its Bentonville, Arkansas, headquarters and 14 distri-

Chart 1

WAGES AND SALARIES VERSUS DIVIDENDS, RENT AND INTEREST AS PROPORTIONS OF PERSONAL INCOME, U.S. 1959–99



Source: BEA

> For people in local places, it is important perhaps crucial to have links to the global networks of large firms where information, commerce, and decisions are centered. Links to global networks no longer require proximity, but they do require having links and using them to obtain and exchange information. The "links" are those of individuals' personal networks and the business networks of highly competitive firms with their suppliers, customers, and other sources of knowledge. The cost of being unconnected or remote is a higher cost of operation, usually in the form of a time penalty.

bution centers, in order to track every item sold at each checkout and to play the same background music in each store (Malecki).

Firms also use ICT to link with each other in order to coordinate and to achieve logistical advantages. I am told that Gateway Computers has extended the concept to the point that UPS now essentially assembles computer systems in their warehouses. Gateway directs components from its various sources directly to UPS, which packages and delivers systems to Gateway's customers.

Distance has been made less important by technology but that technology has increased the importance of being connected and connected to the right places. As Malecki points out,

Globalization has left many rural communities unsure of their best strategies. Very different spatial features attract employers than in the past. Traditional industrialization incentive programs are very risky and, when successful, attract employers of a type that can as easily be lured away again by another community with an attractive incentive offer.

Localization

Localization is the growing role of local conditions and local choices to determine the prosperity of a community. The reasons for the growing primacy of local circumstances include technological change, changing social and political attitudes, increasing returns to scale in many industries and, ironically, the globalization that has opened competition with the world. Reich, in *The Work of Nations*, describes how global competition means that we as a nation are no longer in the same boat. The prosperity of our community depends on whether we are competing with the rest of the world as routine producers, or whether our economy is based on the work of symbolic analysts. Rural communities then depend on how well their economic base sector fares.

As we saw above, in the discussion of globalization, there is a growing freedom of all industries, but most strikingly of services, to behave like footloose industries and to decentralize different functions spatially. The declining role of goods, especially raw materials, in production, and the practice of what has provided both traditionally factor-oriented and market-oriented industries with a wider array of potential locations. Many factor-oriented manufacturing industries choose to transport their raw materials to areas where there they are closer to their markets, where amenities are higher, or where factors other than raw products are lower cost. On the other hand, the growing role of information exchanges, ICT, and computers, allows many services and otherwise market-oriented industries to locate at a distance from their markets. Newspapers need no longer be local. National newspapers exploit economies of size without compromising quality. Satellite and fiber optics technologies allow instantaneous audio, video, and information transmissions over long distances. This allows financial, insurance, real estate, educational, business management, accounting, legal, and many other services to centralize some functions and decentralize others but, in general, free them from locating strictly according to the location of their clients. Indeed, many of these services can be, and are being, provided in international markets just as goods have always been. Retailing will become increasingly footloose as consumer acceptance of mail order and e-commerce rises. New service industries, yet unimagined, will undoubtedly arise to take advantage of the new technologies.

Overall, we observe an emerging economy in which the definitions of economic base, services, public and private enterprise, competition, and even sectors themselves have become blurred. We see an economy in which trusted linkages—linkages between production growth and employment growth, between base and nonbase industries, between activity and place—have been severed. We see an economy in which linkages have become more numerous but more decentralized, and where distance becomes a resource rather than a cost or constraint.

Rural areas face potential disadvantages when compared to the localization forces of urban areas. Perhaps the greatest disadvantage is lower population density. Low density increases the cost of infrastructure, reduces the size and complexity of the labor market, and reduces the size of markets. In a world of significant economies of scale in many sectors, low population density is a decided disadvantage. In addition, low density means that rural areas will always be last to receive the benefits of technological change.

An oft-cited disadvantage is distance from population centers. But as Krugman (1999) and others have shown, transportation costs related to distance can be a centrifugal force. Ironically, technology is tending to erode the decentralizing effects of transportation costs. An obvious example of this is the centralizing effects of e-commerce.

Industrial structure

The structure of all industries and the relationships between firms are changing everywhere. In rural areas a fundamental restructuring is under way. The emergence of industrialized agriculture, farmer alliances, new generation coops, and other elements of supply chains, is precipitated by changes in technology, growing globalization, and the existence of economies of size. The supply chain revolution in agriculture is having a wrenching effect on rural communities as well (Drabenstott). For one thing, the spatial concentration of agricultural products and firms is growing. This affects the stability of these emerging "commodity communities" and increases their dependency on particular firms (Drabenstott).

Changing Demographics

Migration to rural communities

As pointed out in the introduction, many rural communities, especially those in the mountain and in East Coast states, are experiencing significant inflows of new residents. This internal migration consists primarily of older adults who are, or who expect to be retired, and of telecommuters or business people no longer tied to particular locations. An important dimension of this internal migration is the rising demand for amenities. McGranahan identified six climatic and topographic rural amenities. The amenities were used to generate an index (Figure 2). Using statistical methods McGranahan found that the index explains at least one-quarter of the variance in rural growth rates.

This resurgence of some rural communities obviously brings new investment and income to selected communities. Migrants often bring entrepreneurial talents, experience, market knowledge, and capital to their new communities. Return migrants (natives to the community who had left to pursue employment opportunities) combine these characteristics with an understanding of their new communities.

But population increases in smaller, rural communities not accustomed to new residents can also lead to economic and social conflict between the "from-heres" and the "come-heres." In addition, inmigration puts significant new demands on private and public services and can lead to rapid increases in prices for housing and other real property.

The rural areas of the Great Plains continue to lose population. But even here there are exceptions in small cities and in recreational and tourism areas that lack the amenities and locational characteristics that support a population increase.

Settlement patterns

In addition to the more macro phenomenon of growing rural populations, communities are being changed by a trend toward more dispersed settlement patterns. Increasingly, people are interested in fleeing the congestion and high cost of suburban life for the quieter, safer, and more affordable surroundings of the metropolitan fringe. This is a continuation and acceleration of urban sprawl into the suburbs and rural areas.

In many places, small jurisdictions lack the planning resources and the physical infrastructure to respond to this kind of growth. Growth then exacerbates existing fiscal constraints for local governments and, in some cases, contributes to problems with water quality and other key natural resources.

Aging of the population

As the baby-boom generation begins to turn 50, and as life expectancy continues to rise, the overall population is becoming older. The elderly, especially the baby boomers, tend to be quite mobile and as we have seen are increasingly choosing non-metropolitan communities as their retirement destination. Since the poorer elderly may not migrate as readily as the wealthier, declining communities may experience rising poverty and increased demands for social services. Growing rural communities will face increased demands for other public services and amenities. As residents in rural communities age, more people will receive direct and indirect income from federal transfer payments (pensions, Medicare, etc.).

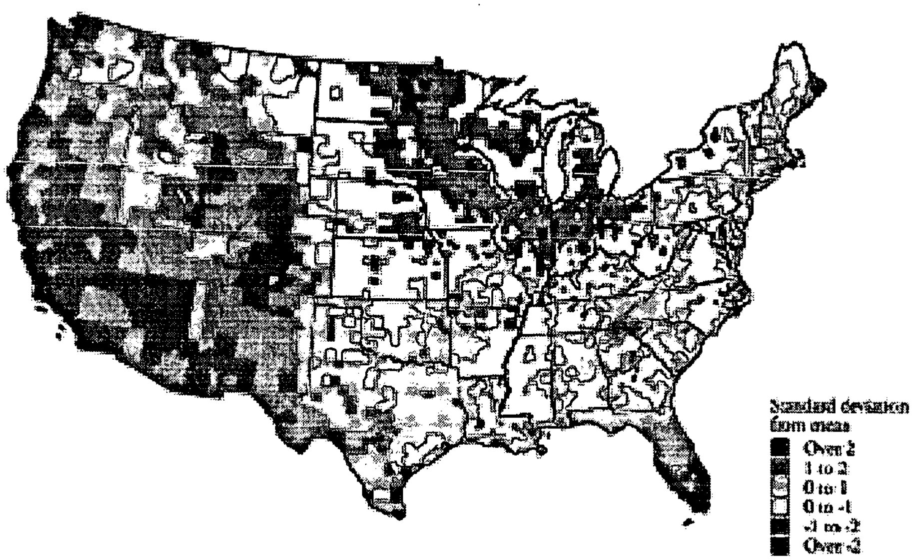
New Governance

Devolution

Throughout the world, communities are faced with the prospect of making more decisions of greater import than ever before. For rural communities, this is often a tall order given their small staffs and resources and their limited experience with many of the new areas of responsibility. Each area of responsibility creates its own problems. In the area of economic development, communities, often neighboring communities, find themselves pitted

Figure 2

RURAL AMENITY INDEX SCORES BY COUNTY



Source: McGranahan 1999

against each other in the competition for migrating employers.

The term, devolution, has become a commonly used term to describe the changing relationship between central and local governments. In recent years the Scots, Welsh, and Irish have all opted for their own legislative assemblies—a concept referred to as devolution by the British government. In Europe, the concept of subsidiarity means that responsibility for public issues is assumed to be the role of the lowest possible level of government. In the U.S. devolution refers to the process of shifting policy responsibility from the federal government to state and local governments.

New governance is a larger trend than just devolution, however. It includes a fundamental rethinking of how policy decisions are made and how public services are delivered. The European Union has adopted a policy called the Civic Society in which the democratic process is being broadened. The concept of Civic Society goes beyond formal government to that of informal governance.

Reinventing government

All levels of government, in many parts of the world, are transforming in the face of changing technology, economics, and global realities. Market oriented, entrepreneurial, competitive and results-oriented—these are some of the descriptors that Osborne and Gaebler use to describe the effective government of the future in their book on reinventing government. Reinvented governments are balancing their budgets and overhauling taxes. They are financing themselves with user fees and other market mechanisms. They are privatizing, outsourcing,[1] and forming strategic alliances with other governments and with the private sector.[2] They are becoming performance-based.

Performance-based government is designed to target limited public resources for maximum impact, to provide incentives for government units to improve the delivery of public services, and to hold government more accountable to specific measurable objectives. This trend is seen in a variety of policy contexts. At the community level, states such as Oregon and Minnesota have initiated the development of key performance indicators and specific short- and long-term quantitative targets for each of these measures, identified through a grass-roots process at the local level. Performance against these targets will, in part, determine local government assistance from state funds.

This trend places even more importance on the capacity of rural communities to manage information and develop strategies to interact with that information in ways that help them achieve measurable improvements in the delivery of public services.

Decentralization of decision making

The most fundamental aspect of new governance is the tendency toward greater decentralization in the decision-making process itself. Throughout the world, community residents are demanding more direct influence over the decisions affecting their communities. Information technology and communication infrastructure tend to support this decentralization process by reducing the transaction costs involved in becoming informed. They also facilitate the process of achieving agreement by reducing the transaction costs involved in communication.

Thus far, U.S. policies with regard to information and communication technology (ICT) in rural communities have focused on the supply side. That is, a key objective is to assure some minimal level of access to telecommunications infrastructure to residents of all places—great and small. Addressing demand-side issues is of equal or greater importance. Europe, through its Information Society policy, focuses more on the demand side by developing in the ultimate users of ICT the capacity and desire to use information technologies.

Rural America: Ironies and Paradoxes

Farms are more dependent on rural communities than rural communities are on farms

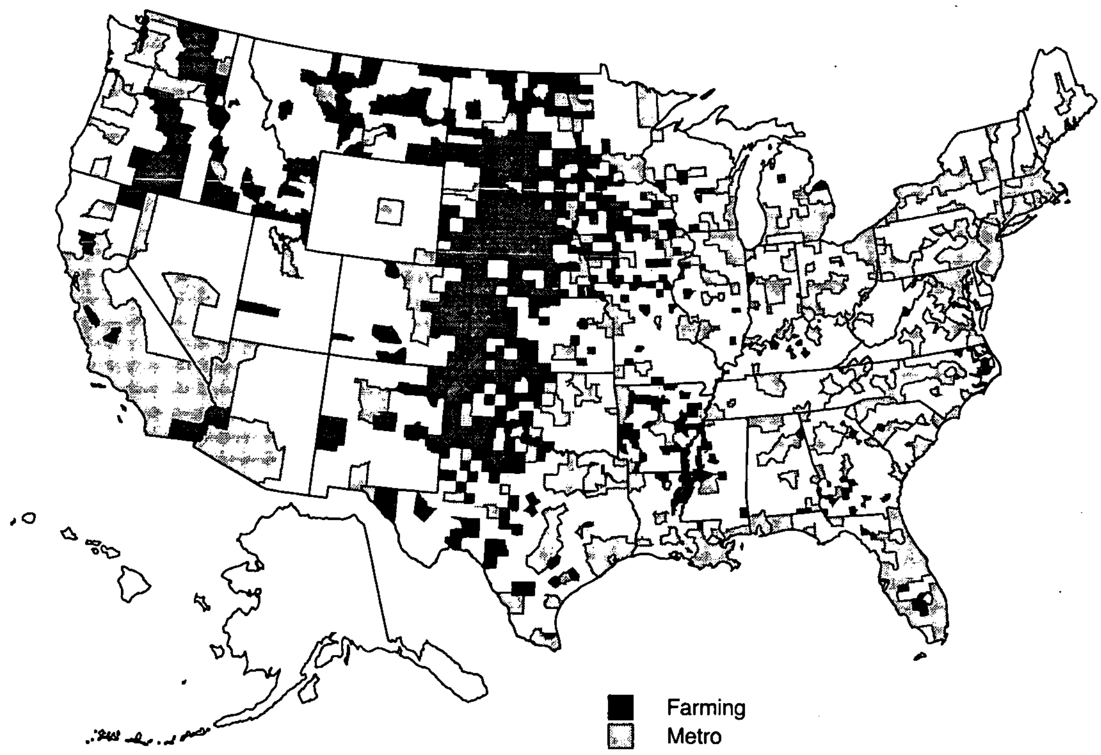
Nationwide, farm income represents less than 2 percent of total income. Most studies of the contribution of farming to state and local economies find that even including farm input suppliers, agricultural value-added processing, distribution of food and fiber, and the multiplier effects of income earned in all of these activities, agriculture contributes less than 20 percent to the gross domestic product of their state. Much of this contribution by agriculture actually occurs in urban, not rural, communities.

Even the most farming-dependent communities depend on agriculture for a fraction of their income. Figure 3 is a map of the 556 USDA-defined farming-dependent counties in 1989. Farming dependent counties are defined as those where at least 20 percent of total labor and proprietor income comes from farming. Given strong growth in nonfarm income and very weak growth in farm income over the last decade, this number is likely to be smaller today. Even with the multiplier effects of farm income, the contribution of farming to all but a few communities is likely to be considerably less than 50 percent.

On the other hand, in 1997 the average census farm family had net earnings of just under $6,000

Figure 3

NONMETRO FARMING DEPENDENT COUNTIES, 1989*



*Counties with 20 percent or more labor and proprietors' income from farming, 1987-89 annualized average
Source: Rural Economy Division, Economic Research Service, USDA, using data from the Bureau of Economic Analysis

from all farming activities (down from almost $8,000 the year before). In the same year the average farm family earned over $46,000 from off-farm sources for a total of over $52,000. Thus, the average farm family depended on off-farm jobs, dividends, interest, and transfers for over 88 percent of its income. On average 54 percent of this income came from off-farm jobs in their communities.

Overall, it is quite clear that farms are more dependent on their communities than communities are dependent on farms. Farms and farm families depend on their communities to provide them with public and private services, roads and marketing opportunities, good education, etc. Farm families also depend on their communities to provide off-farm employment for the operator and for family members. Because of the physical tie of farm families to the location of their farms, farm families are particularly sensitive to the location of these nonfarm jobs—they cannot relocate to improve their access to employment opportunities without also giving up their farms.

Nonfarm rural residents are often in conflict with farms and agricultural policy

In general, rural communities benefit when their local agriculture sectors prosper. Most nonfarm residents have an interest in the health of the agricultural sector. However, structural changes in agriculture seem to be eroding some of these common interests. Increased industrialization of agriculture seems to be weakening the ties between farms and their communities. Allen et al. found that concerns with industrial agriculture and meat packing plants were greater among rural residents who lived in smaller towns or who lived closer to these farms and plants than those more distant from the farms and plants. Other anecdotal evidence indicates growing feelings of mistrust, more serious land-use conflicts, and increasing environmental conflicts between farm and nonfarm rural residents. Rural residents don't seem to think of the new larger farms as community residents. Furthermore, in many states and communities agriculture has effectively limited its exposure to local property taxes, further reducing the interest that nonfarm residents have in the sector.

What concerns do nonfarm rural residents have about agricultural policy? Rural residents, other than farm families and those closely tied to the farm economy, seem to have many of the same concerns with agricultural policy as the general public—food safety, food prices, environmental issues, and federal fiscal effects of farm policy. Ironically, rural residents have additional interests that may mean that they have more conflicts with farms than do urban residents. For example, rural residents have concerns about local environmental effects—odors, threats to water quality, noise, and truck traffic. In addition, rural residents are often concerned about tax limitations and the impact of inmigration to fill low-wage agricultural value-added jobs.

Agricultural policy is not rural policy

If the economies of rural communities are not particularly dependent on farms, is it possible that agricultural policy can serve as our rural policy? Federal expenditures on agriculture (approximately $10 billion in 1999) are important stimulants to rural economies. The stabilizing and reassuring effects of agricultural policy are also possible. But other federal agencies, notably the Department of Transportation, Department of Education, Social Security, Health and Human Services, Housing and Urban Development, Small Business Administration (SBA), and Department of Commerce (EDA) contribute significantly to rural economies as well. USDA estimates that almost $6 billion of DOT expenditures and $6.6 billion of HUD expenditures benefit rural areas directly. Social Security, Medicare, and Medicaid are huge sources of income in many rural communities. Furthermore, many of these expenditures tend to have indirect impacts on quality of life in rural areas and the well-being of a broad array of rural residents.

Small businesses in large places and large businesses in small places

The increasing economic returns believed to exist in so many industries lead to a potential paradox. The imperative of scale is leading to larger and larger firms and more complex agglomerations of businesses. In urban areas small to medium firms can cluster to capture the benefits of agglomeration economies—savings due to proximity to a diverse labor force, specialized producer services, and high-quality public services. In rural areas, economies of scale are more likely to be achieved internally to firms. Firms must become, and increasingly are becoming, larger and larger. In agriculture the emergence of supply chains is evidence of this trend. In other sectors the location of large wholesale facilities, assembly plants, waste facilities, and prisons are examples of large, self-contained enterprises. The consequences of this trend are that rural areas will increasingly depend on the fortunes (and whims) of one or a few firms.

Where Are We Headed?

It is one thing to chronicle the current situation and speculate on the underlying trends. It is quite another matter to predict where these trends are taking us. However, in this section I assume that major policies remain unchanged and that current trends continue for another generation. Under these conditions how will rural America look in the next decade or so?

First, the economic conditions of rural America will continue to diverge—the range between the least and most successful will continue to widen. Overall, population and income growth rates in rural America will equal or exceed those in urban America. Metropolitan statistical areas will expand in each of the decennial censuses incorporating some of the highest income and rapidly growing nonmetropolitan counties, officially leaving the remaining rural areas poorer and slower growing.

While there will be many types of experiences in rural America, two extremes will stand out—the growing, connected rural community, and the isolated rural community.

The connected rural community

Connected rural communities will have high levels of natural and man-made amenities. Because of higher than average income, education, and population growth, each new generation of telecommunication infrastructure will be provided at an early stage, encouraging private investment and growth. Most of these communities will have good commercial air service, health service, and high-quality public education.

A majority of the farms within the labor-sheds and retail areas of connected rural communities will be relatively small, many operated by part-time and hobby farmers. Some farms will produce high-valued products targeted at local niche markets—horticultural crops, U-pick farms, etc. Industrial agriculture will have largely exited these communities in search of lower land costs and fewer land-use conflicts. Land values will be too high, and the transactions costs of developing a viable business in these areas have become prohibitive for low-valued, high-volume production.

Connected rural communities will face what they have come to consider serious land-use issues. In many cases the rural character of the local towns has been displaced by more suburban characteristics. Traffic will overwhelm the local roads, much of the rural "farmscape" will have been replaced by large-lot residential development, campus-style industrial and commercial development, and strip malls.

In short, the connected rural community will become less and less rural and more and more suburban.

The isolated rural community

Isolated rural communities will generally exist at considerable distance from urban centers. These communities will be those that have survived a period of significant rural consolidation—i.e., the decline of some and stabilization of others. Most of these communities will be in the Upper Plains and western regions, although pockets of isolation will exist in all regions. Population will be stable or declining. Income levels will be significantly lower and income growth will lag behind the national average. These communities will have telecommunication infrastructure but it will typically be at least one generation behind that of urban and growing rural areas, and it will be more expensive. Nowhere will the digital divide be more striking than in the isolated rural community.

Farms will be large and technologically cutting-edge. These regions will be the home to a majority of the largest Confined Animal Feeding Operations (CAFOs). Some states and some counties will have found legislative or regulatory means of limiting industrial agriculture. (In most cases, the economies in these states and counties will be struggling even more than in those that admit industrial agriculture).

Residents have few local entertainment and retail alternatives. Those that can afford to be connected depend on the Internet for entertainment, shopping, investing, and education. Farms and manufacturers are almost totally dependent on the Internet for marketing, sales, and purchases of inputs.

Local public services, especially education, will be minimal. Both the property and retail sales tax bases will have dropped significantly since the turn of the century, leaving many rural counties and school districts without adequate financing.

These communities will rival inner cities as the primary destination of international immigrants. These immigrants will largely work at close to minimum wages for value-added agriculture processing or other manufacturing firms.

Conclusions

Rural America is at a crossroads. During the 20th century, technology eroded the employment base of most rural communities, depressed incomes, and made outmigration the only recourse for millions. In the 21st century technology may reverse that bias and instead favor rural communities and rural residents. Rural communities face a number of hurdles before these forces will work to their advantage rather than disadvantage.

The fortunes of rural communities are diverging. Some are continuing to face traditional economic hardships and decline. Others are trying to cope with rapid growth in jobs and population, land use conflicts, growing demand for public services. With a continuation of current policies, there is little reason to expect this process of divergence to ease.

On the other hand, economic and technological trends are reducing the cost of distance and increasing the value of space. Technology is reducing the need for labor, especially proximate labor. Demand for the kind of life-style available in rural communities is growing. There are reasons to be cautiously optimistic. There are certainly reasons to explore the potential for business growth, and to search for new engines of rural growth. With new, effective rural policy, rural communities can contribute much more to the vitality of the national economy.

ENDNOTES

[1] Outsourcing refers to the practice of going outside the firm for services that were traditionally provided internally.

[2] Strategic alliances refer to the practice of co-venturing and contracting vertically with suppliers and clients, and horizontally with competitors.

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The Rural Economy in a New Century: Discussion

Moderator: Alan Barkema

Mr. Barkema: Tom, thank you very much for those thoughtful insights. Ladies and gentlemen, we've now come to an important part of this morning's program—that is, your opportunity for a dialogue and probing questions for Tom. As we begin that process, I want to introduce to you two more of my Center colleagues: Kendall McDaniel and Brian Staihr. Both Kendall and Brian are carrying portable microphones, and they would be delighted to bring a microphone to you so that you can ask your questions. As you ask your question, I would ask that you first state your name and affiliation.

So, ladies and gentlemen, who has the first question for Tom this morning? Yes ma'am.

Flo Raitano, *Executive Director Colorado Rural Development Council:* My question for you is, a couple of weeks ago I had the distinct pleasure of serving on a panel in front of a number of economics students at Colorado State University. One young student came up to me at the conclusion of the remarks and said to me, "So, tell me why rural matters. Wealth is generated in cities." What's a response to that student?

Mr. Johnson: Well, a number of possible responses to that. Obviously, if you look at the map, a large majority of our area is represented under the influence of rural communities and rural people. Not only that, but a large proportion of our population. Rural America can either be a strong contributor to the growth and prosperity of this nation, or it can drag this nation down. And, I think that's just one of the more obvious examples.

Not only that, though. Rural America is the custodian of a great deal of our heritage, our cultural, and historical resources. It is the part of this country that most of our urban population gains a great deal of value and utility from just knowing that it is there and having it available to drive through and to experience. We are not and should not be a nation of rural versus urban. We should be a nation of people who share in each others' prosperities and problems.

Bill McQuillan, *City National Bank, Greeley, Nebraska:* I'm glad that this presentation is being put together and I welcome your thoughts. I was hoping that you would be a little more optimistic in your presentation. There's a lot of us that think, I believe, that a lot of the urban centers take rural America for granted. Your comments were well taken.

I tend to believe that there are opportunities here and I think the presentation, I hope, gets into it, and I think it revolves around information technology. I think it is our first opportunity in many, many years to have these opportunities. I was wondering if you can comment on how you believe this broader spectrum of bandwidth can be delivered to rural America. In my community, I've created a note, unfortunately it's probably at least two years behind, in trying to create the speed and the bandwidth that we need to get our businesses brought up to speed to be able to survive. It just isn't there now, and nobody wants to come there to increase the speed right now. Could you comment on that?

Mr. Johnson: I'm afraid I am quite pessimistic about many of those things. It isn't a matter of whether rural America will have access to information technology, because it will. But, so long as we need to generate enough volume early in the process to make new generations of information technology viable and economically feasible, they will always occur in the cities along the interstate corridors before they make their way into rural America. We are here in Kansas City, the home of Sprint PCS. We have very good PCS service. But, you have to stay in the cities or on the interstates. Once you get off there, the digital service no longer exists. It will be there some day, but it will be two generations late, or a generation late. There's not an incentive to make private sector investments in places that will always be two years or one generation behind in technology.

The solution has to be some kind of nonmarket or partnership between the public and private sectors to see that at least parts of rural America can enjoy an infrastructure and the benefits of that infrastructure at the same time as do the urban areas.

Betsey Kuhn, *Economic Research Service:* Tom, you ended on kind of a tantalizing note, saying with effective policies we could see a rural renaissance. I wanted to just ask you follow up a little bit on some of your ideas for effective policies.

Mr. Johnson: That's the role of our subsequent speakers. But I will say why I think that it is possible. There's a growing demand, as I said, for the very amenities and qualities of life that exist or potentially exist in much of rural America. The pieces of the puzzle are not there. If we can put more of the pieces together, there are many reasons to be optimistic. People want to stay in rural communities. The people who grew up there, many of them do want to stay in rural communities, if given the opportunity. We have the information communication technology that can erase the disadvantages of isolation if we find ways to put those in place. We can put those pieces of the puzzle together if we choose. Today, I don't think we have anywhere close to the kinds of policies necessary to make that happen, though.

Don Macke, *Rural Policy Research Institute:* What kind of lessons might we derive from the European Union as we try to move rural policy in the United States outside of the shadow of rural policy?

Mr. Johnson: The European situation is very interesting. I would never suggest that we emulate Europe. The American experience will be and must be different. But, there are some lessons that we can learn from Europe. For one, Europeans have a level of appreciation and reverence for rural areas and for heritage and for some of the cultural aspects that we have in our rural areas, at a level that they are willing to pay for it—to find ways to preserve those things that they consider valuable. Of course, they've always had a history of being more concerned with place and space than we have in this country. We have a very frontier mentality and always have. We don't have room for a frontier mentality anymore. Those are the kinds of lessons that I would learn. I would learn some of the ways that they have found to protect the space and place resources in their case, in an American way.

Fritz Ruf, *Wisconsin Housing Authority:* Are you suggesting that our investment in infrastructure be in wire rather than in asphalt and sewer and water?

Mr. Johnson: No. For one thing, I think there is probably a wireless solution to the rural connectedness issue. But, I don't think that was the meaning of your question. I think you are asking, "Should we be investing in information technology as opposed to traditional infrastructure?"

I think we do need to reevaluate our investment priorities. I think that you cannot rely strictly on information connectedness, however. People need to be physically connected with the rest of the country. That means some roads; it means airports. I think airports will not become less important in an information age, but probably more important because people will then choose to be at a distance from their colleagues and their business associates so that they then absolutely need a fast way to get face-to-face. I recently read something that impressed me. Information technology is a good way to communicate in very standard, typical kinds of transactions. But, atypical—the introductory kinds of transactions between people—almost necessarily have to be face-to-face. So, we also have to think about the physical connectedness.

Stan **O'Brien**, *Cessna Aircraft Co.*: If we can effectively and economically move people and product in and out of rural communities, what would that do for the stabilization of those rural communities?

Mr. Johnson: The issue of transportation is an interesting one. It is sometimes said that you build a highway to a rural area to make it easier for people to leave. And, it turns out that there is some economic basis for that. As long as there are a lot of industries subject to increasing returns or economies of size, transportation costs actually disburse activity, make it difficult for everything to be located all in one place. So, it's possible that if you make it too easy to move goods and services that you would dry up our current distribution system and make it centralized so that people bought everything, got on the Internet, bought their goods and services on the Internet, and it was delivered to them, rather than going to a local store. But, if we permit that as a possibility, then I think the lower the transportation cost will translate directly into increased quality of life in sparsely populated areas.

A lot of our cost of living in sparsely populated areas is in transporting the things that we consume to us and transporting the things that we produce to our markets. So, if we lower those costs, it has to make someone better off.

Mr. Barkema: And this will be our last question.

Richard Lloyd, *The Countryside Agency (UK):* First, an observation. The problems that you're wrestling with are almost identical to the ones that we are beginning to wrestle with on the other side of the Atlantic, admittedly on a smaller scale. That's an observation. I think it's going to be very interesting to hear your thought processes on how you're going to deal with it over the next day or so. The second is a comment about the European perspective on all of this, and I share the analysis. I would just like to say that I think our long-term goal over the next ten years is to move from the common agricultural policy which we've got, which is rather a millstone rather than an asset in many ways, and turn that common agricultural policy into a common rural policy to begin to tackle the wide variety of problems in rural areas which we're beginning to hear about this morning. The amazing thing is the virtually identical issues that you're grappling with on this side of the Atlantic to the ones that we're trying to grapple with.

My organization, incidentally, we've been operating about a year now. We bring together the government agency that dealt with conservation issues with the government agency which dealt with rural development and rural communities. And, we try to tackle the environmental, the social community, and economics. Sustainable development—what is it, what does it mean, and how can we implement it? And, I think that's a very useful bringing together of bits of public administration.

Mr. Barkema: Thank you for the comment. Tom?

Mr. Johnson: I agree with you. It is amazing how so many of the trends, and thus, the issues are global and not just a Midwest problem or a U.S. problem.

They are global. They play themselves out in different ways sometimes, and they certainly play themselves out in different contexts . . . the agricultural policy that you mentioned, for instance. I'd like to point out that American farmers and, I know, Canadian farmers, are quite skeptical about the support for "rural" as opposed to "agriculture." They suspect very strongly that it is just support for agriculture in disguise.

On the other hand, I think the concept to the extent that it could be implemented in Europe, and similar ideas implemented here, makes a lot of sense. The agriculture sector in the rural economy in general produces many, many things besides food and fiber. And, it goes back to the incentive question. They produce many, many things. Most of it, they produce for the rest of the nation, and they produce it free. And as a result, they underproduce it. They don't have the appropriate incentives to produce it at the right places at the right time. It will be in everyone's interest to have policies that create the incentives for rural people and farmers to produce the right commodities at the right place at the right time.

Mr. Barkema: Ladies and gentlemen, it is with that international perspective that we will conclude this opening segment of our first session this morning. Thank you very much for your participation and your very useful dialogue with Tom. And Tom, thank you once again. We are now going to adjourn briefly for a coffee break. We do have a rigorous schedule this morning and do need to stay on time. We will reconvene promptly at 10:30 a.m. We are recessed.

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