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RURAL AMERICA'S COMPETITIVE CHALLENGE: STRATEGIES FOR THE FUTURE

*Mark Drabenstott
and*

Kelly Welch

Federal Reserve Bank of Kansas City

The rural economy came face to face with national and international competition in the 1980s. In past decades, many parts of the rural economy held competitive pressures at a distance. But beginning in the 1970s, rural industries began to be integrated more fully into national and international markets, a process that reached full force in the 1980s.

The competition had a deep effect on the industries forming the backbone of the rural economy. Agriculture, energy, and manufacturing underwent dramatic downsizing and structural change. Now, those industries employ fewer workers and do business in fundamentally different ways. The U.S. economy turned to other sectors for growth, namely the service sector and high technology. But many rural places seemed to have been left at the station when the transition to a service economy occurred.

Confronted by downturns in its key industries, the rural economy performed poorly in the 1980s. Growth was much slower than in the 1970s and, on average, rural (nonmetropolitan) growth trailed well behind the growth in metropolitan areas in the 1980s. Therefore, the rural share of the nation's economic pie shrank from 19.6 percent in 1979 to 17.7 percent in 1989, a drastic change by historical standards.

What does rural America's economic slump in the 1980s say about its overall competitiveness and, more important, what strategies might rural policy makers pursue to enhance growth prospects in the future? The first section of this paper documents the rural economic downturn and draws some implications for the competitiveness of rural America. The second section considers two broad strategies for enhancing rural growth. The paper concludes that the nation's economic growth is migrating to metropolitan areas

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and that reversing that trend would be difficult and costly. A more effective strategy may be to enhance the productivity of rural industries.

Rural America's Competitiveness in the 1980s

There is a widespread view that the rural economy became less "competitive" in the 1980s. But what does the competitiveness of the rural economy mean? And how can it be measured? Using broad economic indicators, this section shows that global competition profoundly affected the pattern of rural economic growth and that most rural counties did not keep up with their metropolitan counterparts. The widening gap between the economic performance of rural and metropolitan areas may indicate a declining ability to attract economic activity and maintain rural well-being.

What is Rural Competitiveness?

Rural policy makers often ask whether rural America is becoming more or less competitive. The question has no hard and fast answer because the concept of competitiveness has meaning only when applied to a given market, be that the auto market, the grain market or the stock market. The rural economy consists of many industries, which in turn compete in many markets.

Notwithstanding this conceptual difficulty, competitiveness might be applied to the rural economy in three different ways. First, rural competitiveness can describe the ability of rural industries to compete in national and international markets. In other words, how competitive is Kansas wheat in the world wheat market, or Kansas beef in the national meat market? Answers to such questions have obvious impact on the rural economy.

One way to measure the impact of global competition on rural communities is to track rural economic growth across economic bases. Is growth weak or strong in counties dependent on industries under intense international competition? The answer offers at least superficial insight into how well rural industries are competing, and the impact of that success or failure on the local community.

Second, competitiveness can describe, in a fairly narrow sense, the ability of rural places to attract economic activity away from metropolitan areas in the nation. But not all economic activity is up for grabs. Some economic activity is uniquely metropolitan (like the New York Stock Exchange), some is uniquely rural (like farming), and some is ubiquitous (like small-scale manufacturing or warehousing). Rural America competes only for the last portion.

Data are not available to measure the size of this "competitive" portion, nor is it possible to track rural success in attracting new businesses. But a general sense of the region's competitive position

is gained by comparing the rate of economic growth in rural areas with that in metropolitan areas. If economic growth is much faster in metropolitan areas than in rural areas, it offers one clue that rural areas are not competing effectively for the ubiquitous firms. (It may also mean, of course, that rural industries are performing poorly.)

Finally, competitiveness can be applied in a more general sense to the ability of rural places to enhance well-being and maintain essential infrastructure. Rural areas seek to promote growth to meet those twin goals. If economic growth slows sharply, rural areas will have greater difficulty meeting the goals. And if a wide gap between rural and urban growth develops, the well-being of rural residents will, in general, begin to fall behind that of urban residents.

Comparing economic growth across rural and metropolitan areas, therefore, offers insights into the ability of rural America to attract economic activity and its ability to maintain and enhance well-being for its residents. But the growth comparisons offer only crude proxies of loosely defined measures of competitiveness.

Impact of Global Competition on Rural Communities

Surveying economic growth in rural America across different types of economic bases offers useful insights into how international competitive pressures affected the pattern of growth. The charts that follow present the growth in real personal income and employment for eight different rural economic bases. The rural county categories are based on those developed by the Economic Research Service (Hady and Ross). The categories have been modified to make each county type mutually exclusive of the others. The performance data do *not* measure the performance of the different industries themselves. Rather, they indicate the performance of rural places *dependent* on such industries.

Retirement and mixed counties were the only rural economic bases that did well in the 1980s. Rural retirement counties were the only ones that outperformed metro areas in income and employment growth for the decade. Mixed counties, which have a diverse economic base, did better than all other counties, but growth in jobs and incomes was somewhat less than for the nation as a whole.

Both retirement and mixed counties can be viewed as emerging trade centers in rural America, places that are insulated to some degree from international market pressures. Retirement counties thrived on transfer payments and a proliferation of services in the decade past. In fact, both county types were able to tap into the surge of service jobs in the nation. Retirement counties benefitted from a growth in health care and financial services. Mixed counties, by becoming hubs for rural trade, experienced growth in a wide range of services.

Meanwhile, rural counties dependent on industries that compete in global markets ranked last in economic performance. Farm-dependent and mining-dependent counties both had an annual decline in employment, while farming counties eked out a slight annual gain in real income. Agriculture and energy clearly underwent dramatic change in the 1980s due to the pressures of global competition. Manufacturing-dependent counties—more than a quarter of the total rural population—also did poorly, but their modest growth was somewhat better than the two county types dependent on natural resources.

Decade-long averages may overlook a possible rural recovery in recent years. Farm-dependent counties, for example, have been buoyed by the farm recovery. Yet annual data since 1987 suggest that even record farm incomes did not lead to a widespread rebound in economic activity in those counties. Anecdotal evidence from our seven-state 10th Federal Reserve District, for example, suggests that structural change in agriculture has led to fewer farms, fewer agribusinesses, and a weaker economic multiplier in farm communities. Economic activity appears to be migrating to farm trade centers that are prospering at the expense of surrounding communities.

How Well Are Rural Places Competing?

Competitiveness also may be used to describe loosely the ability of rural areas to attract economic activity and maintain rural well-being. Comparing rural and metropolitan economic growth within one region of the nation helps to quantify the success or failure of rural places in competing for economic activity. Analyzing economic growth according to a place's proximity to a metropolitan area helps to describe the spatial links in the economy.

Rural and urban growth by region. Uneven economic growth in the 1980s showed that the U.S. economy is not homogeneous across regions. Comparisons of rural and metropolitan growth within the eight Commerce Department regions show that growth varied substantially within individual regions.

In virtually every region of the country, nonmetro counties had slower economic growth than metro areas in the 1980s. New England was the lone exception. In the remaining seven Commerce Department regions, rural growth in real income and employment underperformed both metropolitan areas within the region and the national average. Rural counties in the central regions of the nation performed worst. In contrast with rapid rural growth in New England, for example, rural counties in the Plains saw their incomes and job ranks grow only 0.5 percent a year.

The divergence between rural and metro growth stands in sharper relief when shown as a ratio. The rural-urban income ratio, for

example, represents rural income growth as a proportion of metro growth. When the ratio is 1, rural growth just matches urban growth. For the nation as a whole, the income ratio was 0.6 in the 1980s, suggesting rural places grew roughly half as fast as urban places. By contrast, rural places outpaced urban places in the 1970s, when the ratio was 1.2.

The income ratios point to striking differences across regions. In New England, for example, income growth of a dollar in Boston was matched by \$1.08 in rural New England. By contrast, a dollar of income in Kansas City (Plains region) was matched by just \$0.20 in rural Kansas. New England was the only region where rural incomes grew faster than urban incomes. In the 1970s, rural incomes grew faster than urban incomes in every region except the Southwest and Rocky Mountains.

The rural-urban employment ratio paints a similar picture. For the nation, rural job growth was half as fast as urban job growth. Again, only in New England did rural job growth outpace urban job growth.

Overall, the economic data by region confirm that rural places did not fare well in attracting economic activity in the 1980s. While the poor rural performance owes much to the poor showing of the dominant rural industries, the wide gap in rural and metro performance strongly suggests that rural areas are not nearly as successful as urban or suburban places in competing for businesses.

Moreover, the regional data verify that the rural economy retains substantial diversity across the country. Policy efforts aimed at improving rural economic growth need to be tailored to very different regional problems.

Rural growth by proximity to metropolitan areas. Rural is a term that is often defined in terms of *not* being urban. The difficulty comes in deciphering how far economic influence extends from a metropolitan area. To address this spatial uncertainty, a demographer with the U.S. Department of Agriculture developed a series of ten categories to define the spectrum of counties from core metropolitan to absolutely rural. Beale codes separate metro counties into those in the center of large Metropolitan Statistical Areas (MSAs) and those on the fringe. The codes also identify which nonmetro counties are adjacent to MSAs and which are not. The result is a useful taxonomy with central core MSA counties classified as 0 and completely rural counties classified as 9. In between lies a spectrum that gauges proximity to an MSA.

When rural counties are grouped according to their respective Beale codes and then economic growth rates are compared, an unmistakable trend emerges in the 1980s. Growth declined—in nearly straight-line fashion—as the distance from a metropolitan area increases. With income growth, for instance, the four metropolitan

county codes (0 to 3) had the strongest growth and three of the four county codes in this group matched or exceeded the nation's growth in the 1980s. Meanwhile, counties *adjacent* to metropolitan areas outperformed counties that were *nonadjacent*. Counties that were not next to metropolitan areas ranked dead last in terms of growth in real income. With only modest reshuffling, the same story holds for employment growth.

A simple but stark conclusion arises from these data: economic growth in the United States is migrating to the cities. Such was not the case in the 1970s, but that decade looks increasingly like an aberration. And while growth in these metropolitan areas may be strongest in suburbia and, in some cases, exurbia, economic growth in MSAs far exceeds growth in completely rural places. If you were a rural resident in the 1980s, the record shows that it was better to live in a county next to an MSA in the 1980s than anywhere else in rural America.

Why did the migration of economic growth to metropolitan areas occur? It is beyond the scope of this paper to analyze the causes, but a few factors merit mention. The service sector was a vital engine of U.S. economic growth in the 1980s. But 88 percent of all service jobs created in the 1980s were in metro areas. Information and associated technologies have become more important to the economy. There appear to be certain agglomeration economies in this industry, despite the fact that new technologies make it possible to locate anywhere.

Summary

Rural economic growth in the 1980s slowed from the 1970s and trailed well behind metropolitan economic growth. Rural economic growth was strongest where it was most insulated from international competition—retirement and mixed counties—and weakest where competitive pressures were greatest—farming and mining counties. Rural places in general did poorly in competing for economic activity in the 1980s: economic growth was faster in metropolitan areas than in rural areas in seven of eight regions of the country. Finally, rural economic growth was directly proportional to a rural place's proximity to a metropolitan area. Economic growth declined in the 1980s as rural counties became more remote.

In short, the nation's economic growth appears to be migrating to metropolitan areas, posing serious questions about the prospects for rural well-being and rural infrastructure.

Enhancing Rural Competitiveness

With a bleak decade just past, the natural question facing rural policy makers is how to enhance the rural economy's performance

in the decade ahead. A useful starting point is to establish the basis for policy intervention of any kind. There is considerable debate surrounding the role of public policy in encouraging economic activity in rural places. If policy efforts are undertaken, policy makers appear to have two broad strategies from which to choose: 1) making rural places more competitive business locations and 2) making rural industries more competitive in national and international markets.

Foundations for Rural Policy

Is there a reasonable foundation for embarking on policies to enhance rural competitiveness? The answer depends on the specific goal. One goal may be to encourage economic activity in rural places. In light of the stark conclusions drawn earlier, this policy would clearly lean against prevailing market winds. Economic activity is migrating to metropolitan areas for a multitude of reasons. National policies aimed at reversing this outcome would be extremely costly and might not succeed anyway.

But policies conducted at the state and local level may be appropriate. States that choose to enhance rural growth may be able to devise effective policies. But public support for such policies may be difficult to muster, even in states like Iowa and Nebraska that are thought to be predominantly rural but in fact have only a narrow majority of their population living in rural areas. By default, the policy burden may fall to the rural communities themselves. In the end, the responsibility for making rural places more competitive likely rests with the leadership of those places.

Another goal may be to make rural industries more competitive in national and international markets. This goal strikes more at the issue of improving the productivity of rural resources and making the rural economy more efficient. Such a goal may be easier to justify for the federal government and state governments. The nation has a long history, for example, of investments in agricultural technology and markets, all aimed at improving the productivity of rural resources. Such investments will almost certainly continue to be made. The question becomes one of choosing those investments that offer the greatest payback. Given the institutional momentum attached to past policy decisions, reallocating public investment is difficult.

Making Rural Places More Competitive

There appear to be two approaches to making rural America more competitive in attracting economic activity. One is to bolster rural education, thereby making the rural workforce more attractive to traditional and emerging businesses. The other is to make the rural business climate more conducive to business start-up and expansion, in short to encourage rural entrepreneurship.

Education. Persistent educational differentials between metro and nonmetro areas appear to hinder the ability of rural areas to attract businesses. In 1983, for instance, only 64 percent of nonmetro adults had completed four years of high school, as compared to 75 percent of metro adults (Bawden & Brown). In 1990, the divergence in completion of four years of college was even more dramatic: 13 percent for nonmetro versus 24 percent for metro (U.S. Department of Commerce). Moreover, younger and better-educated persons are highly mobile and migrate to metro areas in search of higher skilled and better paying jobs. In fact, nonmetro areas lost 2 percent of their college educated adults a year during the 1980s (Bawden & Brown).

Better education clearly affects the ability of rural communities to compete for economic activity. Where problems exist in recruiting workers with basic skills in math, English, and communication, existing employers often leave and potential new firms are discouraged (Pigg).

Education is often closely connected to other factors that encourage local growth. For example, the industry mix of rural areas often comprises industries requiring lower skill levels and thus paying lower wages (Killian & Parker). Improvements in education could help diversify the typical rural mix of routine manufacturing, lower-skilled services, and resource industries. Even if employment is merely shifted to higher technology industries with no net increase, rural real income increases in proportion to the higher wages of skilled labor.

To improve education levels, rural areas need to target their efforts. Because younger, better-educated persons tend to migrate out, rural areas should emphasize continued education and training programs for adults. Recent estimates suggest that rural areas are not receiving their proportionate share of federal funds for job training (Bawden & Brown). Nonmetro areas also need to place special emphasis on decreasing their high school dropout rate of 16- to 19-year-olds. While it is only less than 1 percent higher than the metro dropout rate, the migration of talented rural youth still has great impact on rural economic growth.

Entrepreneurship. Rural America has a strong tradition of entrepreneurship. Images come quickly to mind of farmers, bankers and coal miners winning against the odds through sheer determination. But economists and policy makers appear to have paid relatively little attention to the subject in the face of a severe slump in the rural economy.

States are in a position to have considerable impact on the rural business climate. State policy makers have control over two broad policy factors (Smith and Drabenstott).

Environmental factors determine the overall economic environment of a given location and include such things as access to mar-

kets, transportation, education, overall tax structure, and labor market conditions. These factors matter most in business location.

Discretionary factors are more narrow policy instruments like tax and financial incentives. States and communities often employ these special incentives to attract large firms. These discretionary factors have a much smaller effect on business location, but are more popular due to their wider recognition in public opinion.

Fortunately, most states appear to be recognizing that building a strong business climate is more vital to economic growth than chasing smokestacks. States are having difficulty, however, in consistently following a strategy of emphasizing the broad economic environment over a long period of time.

The question of tilting the business climate in favor of rural areas remains unanswered in most states. Few states, it seems, are overtly willing to encourage rural growth at the expense of metropolitan growth. That is probably explained by the fact that even in rural states like Nebraska, a bare majority of the population lives in rural areas.

Many policy makers express interest in boosting rural business activity through subsidized credit. The data do not support the assertion that there is a paucity of rural credit (Morris and Drabenstott). To the contrary, most rural community banks are flush with funds. In the 10th Federal Reserve District, for example, loan-deposit ratios currently stand at just 52 percent (Sheesley and Barkema). The problem is not the supply of credit, but rather the creditworthiness of rural borrowers. In large measure, rural borrowers are still adjusting to the realities of financial market deregulation. Rural interest rates now track money market rates closely, a departure from the insulation of rural markets in the past.

One prudent policy to encourage rural entrepreneurship is technical and management assistance. Often the biggest problem facing a rural entrepreneur is putting together a complete business plan. The owner may have production expertise, marketing expertise or financial expertise, but rarely all three. Technical assistance programs aim to supply the missing link and thereby help the business succeed. Even though management and technical assistance address a common need of rural businesses, they have generally not received much funding from rural policymakers. Though empirical analysis is unavailable to support the claim, they probably pay big dividends compared with low cost.

Making Rural Industries More Competitive

The second broad strategy to enhance rural competitiveness is to make rural industries more competitive. At heart, the strategy aims to improve the productivity of rural resources through improvements in technology, markets and infrastructure.

Agriculture. When the competitiveness of U.S. agriculture is viewed with an eye toward maintaining or enhancing rural economic growth, adding value to farm products becomes the leading policy candidate. Advancing technology coupled with a historic restructuring of U.S. agriculture pushed the industry toward bigger farms and bigger agribusinesses in the 1980s. Agriculture simply needs fewer farms, fewer input suppliers and fewer processors to turn out low-cost, efficient products. Thus, it is not surprising that farm recovery has not readily translated into economic recovery in farm-dependent rural places.

Quite apart from the development consequences, there is an important competitiveness question for U.S. agriculture related to high-value products. Growth in bulk farm products was stagnant in the 1980s, while growth in high-value consumer food products has grown fourfold since the early 1970s. The United States, therefore, continues to emphasize the slowest growing part of the market, while ignoring the fastest growing part. It is time to reorder priorities. High-value products are now 60 percent of the world food market: U.S. agriculture ought to pay attention to that.

A soft market for bulk grains will further the focus on adding value. Selling more grain to the world is likely to be a tough sell. Growth in trade will be slow and supplies are likely to be large. U.S. agriculture is most competitive when grain trade grows rapidly. Such growth plays into the strength of U.S. assets: efficient grain handling infrastructure and a large and elastic resource base. But world economic growth will probably not be strong enough to fuel rapid growth in trade, even if the Soviets find credit to finance their needs. Meanwhile, grain supplies seem likely to keep flowing onto the world market from all directions. With so many subsidies and with advancing technology worldwide, it is hard to imagine circumstances under which the United States will gain market share.

The most elementary value-added strategy is livestock. The Great Plains serves as a good case in point. The region derives more than half its gross farm income from cattle. Why? Because it is a long way from world grain markets and because producers can increase returns to marginal cropland and grazing land by walking forage to market (Drabenstott and Barkema).

The livestock strategy is gaining attention in many western Corn Belt and Plains states. Northwestern Iowa, for example, is seeing a renaissance in cattle feeding after a fifteen-year hiatus. Poultry processors are funding an expansion of turkey processing in southern Minnesota. In both cases, grain producers are at the tail end of the U.S. grain distribution system, so a switch to livestock makes sense. The livestock strategy will receive even more attention in the 1990s.

Such a strategy is not without problems. The U.S. meat market is mature and rapid expansion of meat supplies would lead to a sharp drop in prices. There are, however, clear opportunities to market

U.S. meat products abroad. The livestock industry is rapidly moving to vertical coordination through contracting and, in some cases, to vertical integration. This industry structure runs into opposition in some states that view family farming as the best model of economic structure. And there are environmental concerns about large scale commercial livestock feeding and processing.

Food processing is a second strategy for adding value to farm products while boosting local economic growth. The strategy offers some potential dividends, but it will not prove to be a rural panacea.

The rural opportunity in food processing arises out of the current mismatch in the location of farm and food output (Barkema and Drabenstott). Farm production is concentrated in the heartland and a few key Sun Belt states, California, Texas, and Florida. The nation's food processing occurs in essentially two places: the same three Sun Belt states and a food belt stretching from the Great Lakes to the Northeast. Roughly one-third of the food is processed in that northeastern food belt. The question is whether a dozen or so major farm states in the western Corn Belt and northern plains can entice the food processing to move west where the farm products are themselves produced. In that sense, the food processing strategy is a zero sum game: the farm belt's gain is the food belt's loss.

Finding new industrial uses for farm products is the brave new frontier of adding value. It is unclear how much promise this strategy holds for agriculture or the rural economy. Still, genetic engineering is giving producers more control over product characteristics. How those characteristics combine in commercial nonfood products is the question.

Notwithstanding the technical questions, it seems likely that the United States will have two types of grain production in the future (Barkema, Drabenstott, and Welch). The first will yield generic bulk grains, destined for domestic and international use. The second will yield high-value grains for very specific commercial uses. Bulk corn and soybeans, for example, are likely to dominate in the Corn Belt, but pockets of specialized grains may develop within that region. Over time, the pockets may expand and become more numerous.

Such pockets of specialization will offer economic boost to local communities, but the benefit may be less than expected. The firms controlling the processing and the contracts governing production will be large and probably will obtain inputs and credit from large urban centers. Thus, farm communities may increasingly resemble "branch plant" towns, or places dependent on economic decisions made elsewhere.

Manufacturing. Historically, manufacturing has been a mainstay of the rural economy. Rural places sold themselves on cheap land plus a hardworking, low-wage workforce. But the early 1980s brought a revolution to rural manufacturing. The strong dollar

squeezed manufacturing profits and put rural U.S. workers in direct competition with workers in other countries. Meanwhile, manufacturing was undergoing a technological revolution, encouraging a shift to flexible production systems and a clustering of firms in one place.

A crude review of manufacturing data suggest a mild turnaround in rural manufacturing in recent years. From 1986 to 1989, for example, rural manufacturing employment grew 2.5 percent a year versus just 0.3 percent a year in metro areas. But is that a positive sign?

Data for the past decade suggest improved gains in rural employment, but at the expense of little if any growth in wages. If the change in manufacturing jobs is arrayed by Beale categories, for example, job gains were highest in completely rural counties and job losses were greatest in urban centers. But manufacturing earnings tell almost the opposite story: big gains in urban centers and outright losses in the more rural areas.

With manufacturing and many other industries, therefore, policymakers must sort through goals. Is it jobs, income, or both? Given the competition in labor-intensive manufactures, rural workers face a stiff challenge. And if a North American Free Trade Agreement is reached, the intensity of competition will only increase.

As in agriculture, rural areas may have to move up the value ladder to remain viable in manufacturing. The difficulty is that they quickly run into stiff competition from many metropolitan areas, and may run counter to recent agglomeration tendencies in the industry. Universities may have a role in examining technologies appropriate to rural areas. Though not documented, more has probably been spent on agricultural research than on rural manufacturing, despite the fact that manufacturing-dependent counties have more than four times the population of farm-dependent rural counties.

Services. The explosion in the U.S. service sector has by-passed much of rural America, but there are a couple of highly notable exceptions. Retirement-based counties have been the star performers of the rural economy, largely because they have participated in a rush of new service jobs.

The success of rural retirement counties has given rise to a new growth policy that might be called *the amenities strategy*. Retirement counties base their success ultimately on the amenities they offer. In most cases, these are scenic and infrastructure attractions, as well as health care.

The success of retirement counties in generating jobs, and service jobs in particular, is impressive. Service job growth was higher in retirement counties than in metro areas by a slim margin and was higher than every other rural county type by a wide margin.

But starting with an environmental amenity seems critical. Colo-

rado offers a good case in point. The state's rural counties nestled along the Front Range or in the mountains offer obvious recreational opportunities. Not surprisingly, those recreation opportunities added greatly to economic growth in those counties. For example, employment growth in the 1980s averaged 0.5 percent a year in the state's eastern rural counties located in the plains. That is roughly equal to other rural counties scattered across the Great Plains. But the state's rural counties along the Front Range and in the mountains saw their job ranks grow an average 2.3 percent, nearly five times as fast.

To succeed with an amenities strategy, infrastructure investment must be sound. Health care, water and sewer, and roads all appear to be important. Financial and business services follow naturally if the infrastructure is in place. In short, an amenities strategy is a good approach for local policy makers. If the amenities are there to begin with, everything else is more or less under local control.

Energy. Energy is often overlooked as a rural development strategy, but the industry has profound effect on a broad swath of rural America. The rural economy in states such as Texas, Oklahoma and Wyoming underwent great turmoil after the oil collapse of 1986, a downturn that combined with the farm recession to lead to near-depression in some places. Mining-dependent (or energy-dependent) counties account for 3.7 percent of the rural population, roughly half the share of farming counties.

Two developments in the energy industry may combine into a major *de facto* competitiveness strategy for energy-dependent counties. The first is the National Energy Strategy. That policy is still in the making, but one of the results may be to spur development of U.S. fuels in general and natural gas in particular. The second is major breakthroughs in technology that have lowered the cost of exploration and development, making U.S. fuels more competitive in the world market. Horizontal drilling is the most important development, but it is being combined with improved management techniques and more efficient business organization (*Oil and Gas Journal*). Combined, these techniques may lead to development of many rural energy resources that had been written off in recent years. The building of new pipelines may encourage development of natural gas. A proposed pipeline from Wyoming to California, for example, could more than double Wyoming's gas production.

Conclusions

In conclusion, rural America faces a competitive challenge. By several broad economic indicators, economic growth has been weak in most parts of rural America. Intense competition in international markets has led to weak economic growth in rural places dependent on industries such as agriculture, energy and manufacturing. Meanwhile, economic growth has been migrating to metropolitan areas, a

signal that many rural places are not competitive locations for today's businesses.

Policy makers can address the rural competitive challenge in one of two ways. They can lean against the prevailing market winds and attempt to make rural places more competitive. Such a strategy will be costly and offers only small chances for success. The burden for such a strategy ultimately rests with rural leaders. The best approach appears to be one of encouraging entrepreneurship through a sound business climate.

Alternatively, policy makers can pursue programs that make rural industries more competitive in national and international markets. Agriculture will need to add value to its traditional bulk commodities, an approach that will encourage economic activity in some rural communities. Rural manufacturing will need to examine technologies that are suited to rural location. Many rural areas offer significant environmental amenities, an asset that may spur growth in services, especially when coupled with appropriate investments in infrastructure. Finally, developments in energy technology and national energy policy may spur new development of U.S. energy resources, offering new hope for rural areas with significant energy reserves.

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Table 1. Beale Code Definitions

CODE	
METROPOLITAN COUNTIES	
0	Central counties of metropolitan areas of 1 million population or more
1	Fringe counties of metropolitan areas of 1 million population or more
2	Counties in metropolitan areas of 250,000–1,000,000 population
3	Counties in metropolitan areas of less than 250,000 population
NONMETROPOLITAN COUNTIES	
4	Urban population of 20,000 or more, adjacent to a metropolitan area
5	Urban population of 20,000 or more, not adjacent to a metropolitan area
6	Urban population of 2,500–19,999, adjacent to a metropolitan area
7	Urban population of 2,500–19,999, not adjacent to a metropolitan area
8	Completely rural (no places with a population of 2,500 or more), adjacent to a metropolitan area
9	Completely rural (no places with a population of 2,500 or more), not adjacent to a metropolitan area

Source: Economic Research Service, U.S. Department of Agriculture.

Figure 1. U.S. Economic Regions



Chart 1. Real Income Growth by County Type

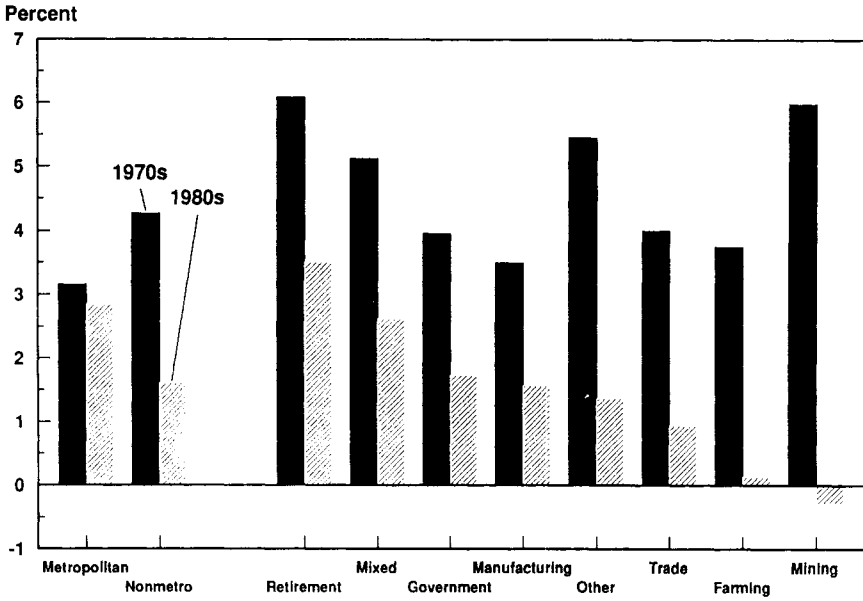


Chart 2. Employment Growth by County Type

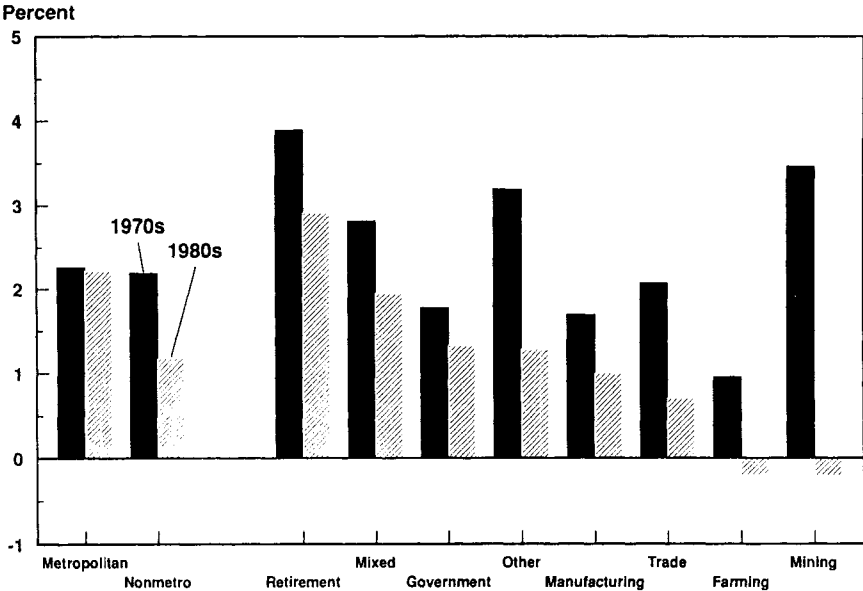


Chart 3. Average Annual Growth in Real Income 1980-1989

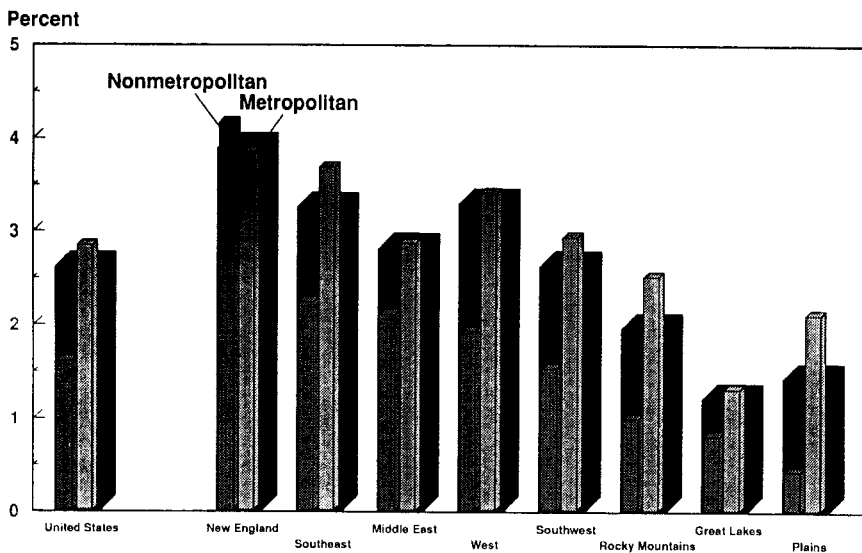


Chart 4. Average Annual Growth in Employment 1980-1989

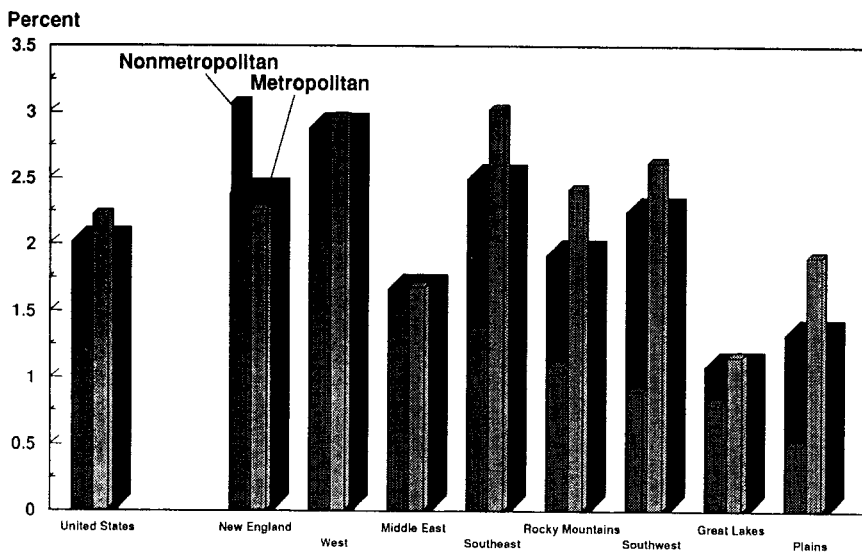


Chart 5. Rural-Urban Income Ratio

Ratio: Rural Growth / Urban Growth

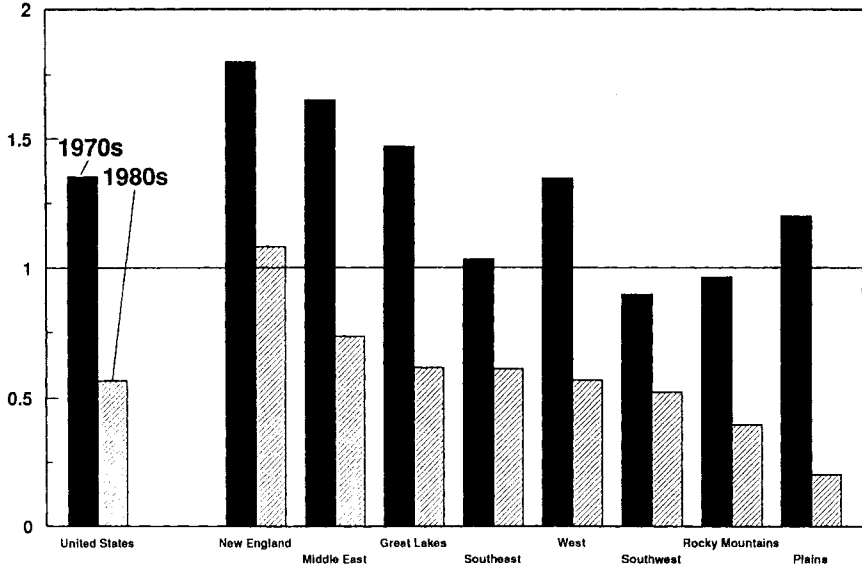


Chart 6. Rural-Urban Employment Ratio

Ratio: Rural Growth / Urban Growth

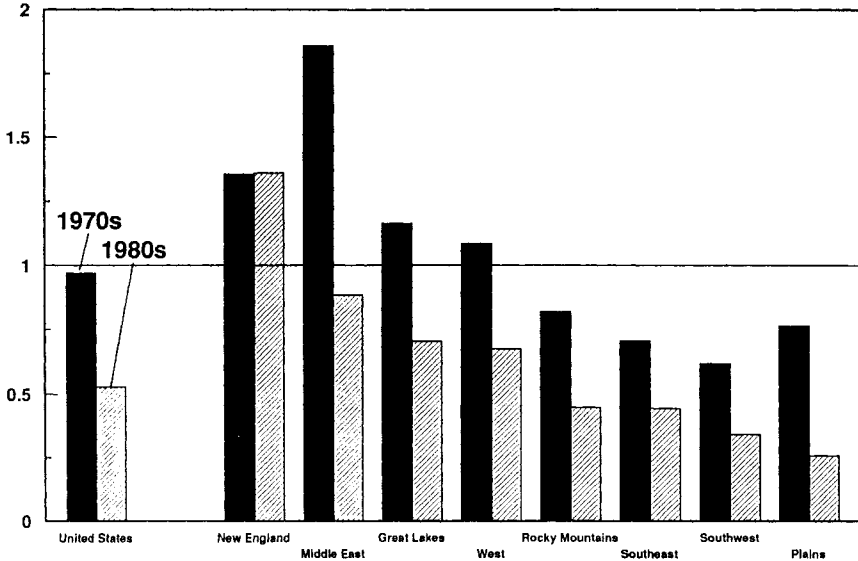


Chart 7. Real Income Growth by Beale Code

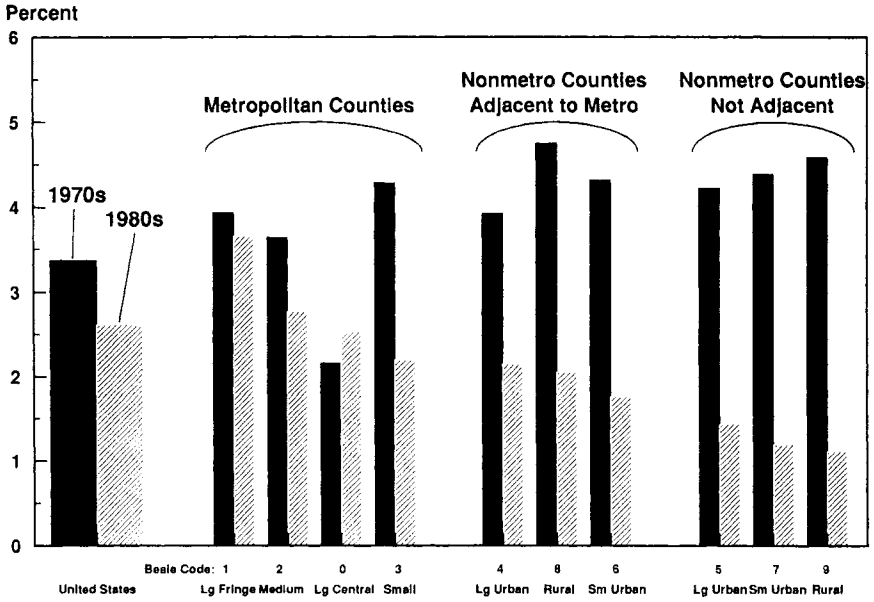


Chart 8. Employment Growth by Beale Code

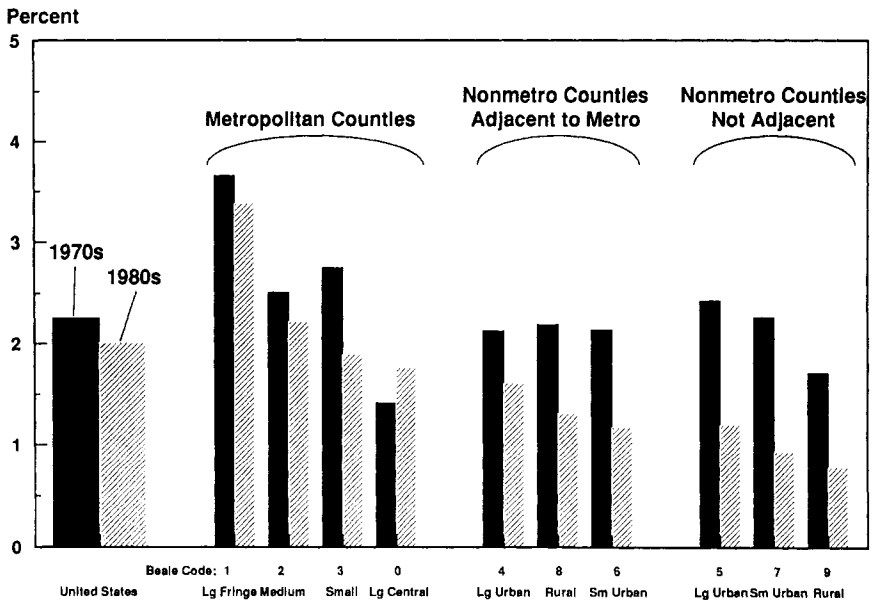


Chart 9. Average 1980s Manufacturing Employment Growth by Beale County Type

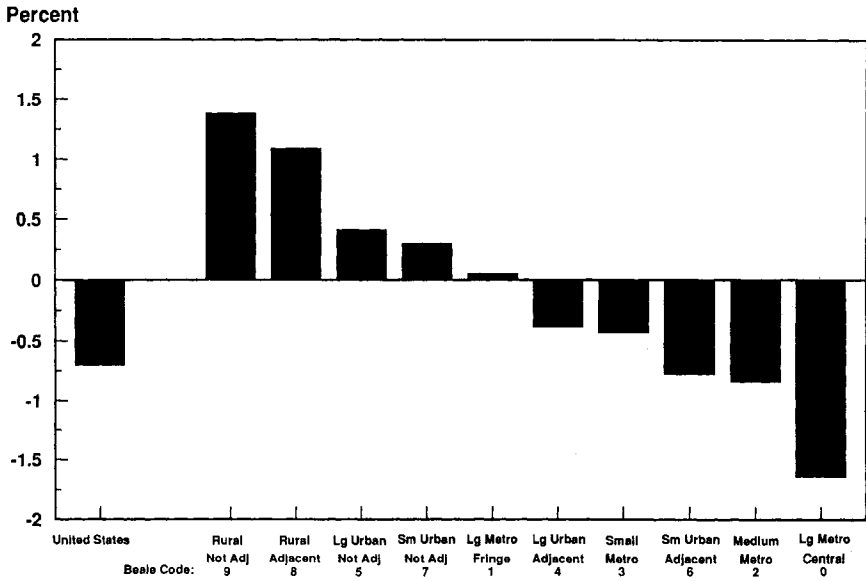


Chart 10. 1980s Average Annual Growth in Manufacturing Real Earnings per Worker

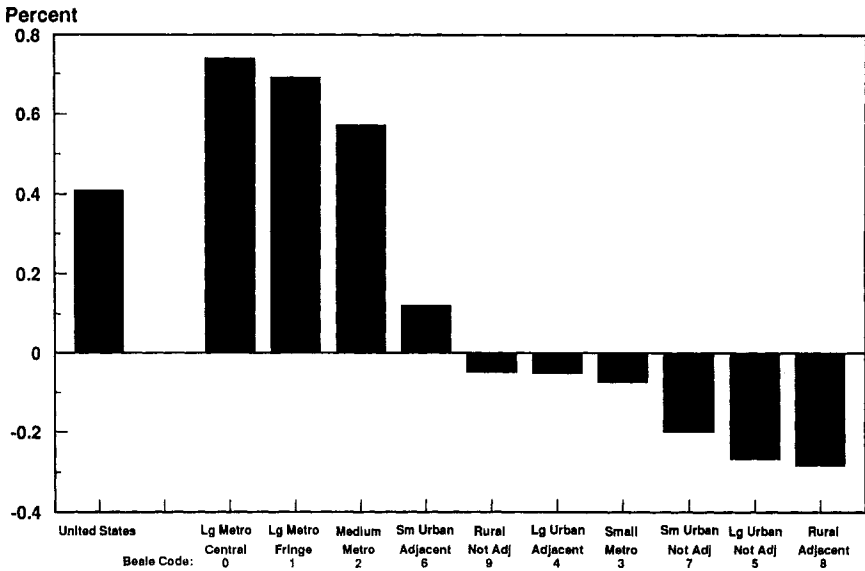
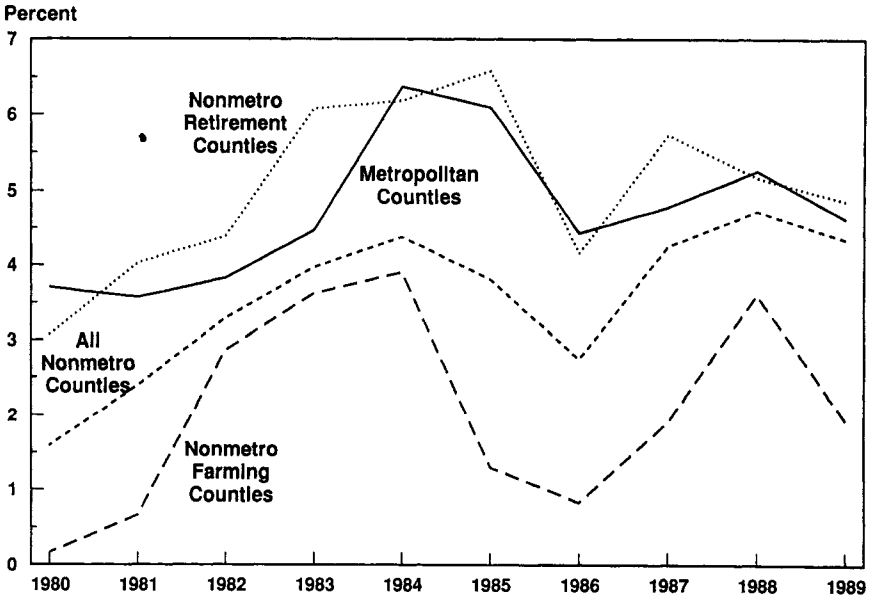


Chart 11. Service Employment Growth by County Type



Public Policy Education Methods

