Invited Presentation

Agriculture's Stake in Rural Economic Development

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Introduction

This paper considers the effect of economic progress in the nonfarm sectors of urban-industrial areas on the viability of the current farm structure in the United States. These urban-industrial areas may be located in nonmetropolitan counties that are often considered part of "rural America" (Bender, et al.) Furthermore, they are best defined as those areas of nonmetropolitan America that have clusters of employment opportunities. These clusters are increasingly dominated by an array of trade and service activities although they are of lower order in the central place hierarchy than found in metropolitan areas. For example, basic medical services may be provided but there is an insufficient local market to justify many specialized medical services.

What is meant by farm structure? Cochrane (1985, p. 1004) contends, "there no longer is any such thing as a typical family farm." Still, there is the notion that a dual structure of fanning is evolving with the demise of the mid-sized family farm. This concept is evident in the current farming structure described by Cochrane (see Table 1).

From the farm structure in Table 1, several types of relationships between rural economic development and agriculture are apparent. First, if we consider rural economic development in the narrow sense of job creation sufficient to employ fully the area work force, the need to provide off-farm employment opportunities for medium and small farm operators is obvious. Without these opportunities, the 400,000 medium sized farm units are likely to succumb to the economic canabalism noted by Cochrane. Here, the reference is to larger, aggressive farm units purchasing the land of medium sized farms that leave full time farming. To the extent that small and medium sized farms are located in nonmetropolitan counties, and especially those nonadjacent to metro areas, rural economic development will be important for their survival as farm enterprises.

A second linkage between rural economic development and agriculture is the role that the over 1.5 million small farms play in public attitudes toward agricultural policy. The contention here is that this group, while not important in terms of farm output, still provides a valuable source of political support for farm programs. Farm program specifics may be influenced primarily by the effectiveness of lobbyists for large scale commercial agriculture. Yet, political support for the programs is likely to be enhanced if the public perceives that these programs provide aid and sustenance to the small family farmer who is confronted with external forces beyond their control (Federal deficits, weak export markets, etc.). Again, to the extent that rural development, in the narrow jobs creation sense, provides the major employment options for these rural residents, it may maintain the population base needed for viable communities and thus an agriculture and rural area constituency. Without this constituency, the general public is less likely to support farm programs that provide most of their assistance to very large operators (see Cochrane, 1985 and Ahearn, et al., 1985.)

A recent article in the popular press (Wall Street Journal, June 17, 1986) illustrated the negative view of current farm programs. Its headline, "NEW FARM LAW RAISES FEDERAL COSTS AND FAILS TO SOLVE BIG PROBLEMS"-"IT WILL SHOWER FEDERAL MONEY ON PROSPEROUS FARMERS AND MAINTAIN SURPLUSES," both catches the reader's attention and influences public attitudes toward farm programs. Read-

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Table 1. 1985 Farming Structure.

Farmers Number	Share	Average Gross Receipts	Share	Status
Very Large: 110,000	4.5%	>$200,000	47.5%	"Wealthy, some expanding, a few over- leveraged and in trouble."
Large: 180,000	7.5%	$100K-$200K	19.0%	"'Many aggressive and innovative; Some in danger of losing entire operation."
Medium: 400,000	16%	$40K-$99K	20.0%	"Few making it; A good number failing; most struggling to survive; husband often working part-time in local off-farm job; wife often working full-time in local processing or manufacturing plant off-farm income of the average family exceeds net farm income."
Small: 1,500,000	70%	$1K-$39K	13.0%	"Families live on the land but do little farming; husband and/or wife commute to a nearby town or city; work in blue collar jobs, in service jobs, or as professionals."

Source: From Cochrane, 1985, pp. 1003-1004.

ing this article reinforces a negative view of farm program effectiveness. For example, an Iowa farmer, heavily in debt, indicated that idling land to get subsidies won't stop him from reaping a near record corn crop. "I'll idle the wet spots, the patches, the rocky ground that don't grow anything anyway," he says. "You just do whatever you can to outsmart them. It's not hard" (Wall Street Journal, June 17, 1986).

Agriculture has a political stake in rural economic development. Job creation and population growth in rural areas will maintain a constituency that is both rural and farm oriented. Importantly, it may also support a farm structure with mid-sized farms, i.e. a structure perhaps more likely to elicit public support for farm programs than a farming sector dominated by very large farms.

The third linkage from rural economic development to the farm sector is the role of urban-industrial growth on the opportunity cost of farm labor and the subsequent impact on the structure of agriculture. Here, the analysis follows the lines considered by Schultz (1950 and 1951), Nichols (1961) and to a lesser extent Kislev-Peterson (1982), and Runge (1985) in recent years.

This linkage affects both the efficiency within the farm sector as well as the relative well being between rural and metropolitan places. This link is important to the larger sized units but critical for the 400,000 medium sized units that Cochrane contends are in the most trouble. The following section takes up this issue.

Agriculture's Stake in Rural Economic Development: The Role of Factor Markets

While current financial stress in farming may be accelerating the exit of full time medium sized farms, the primary long run force behind the reduction in the number of medium sized units will be changes in the opportunity cost of farm labor. To the extent that economic development in rural counties generates more and higher paying jobs than currently exist in the rural area, the reduction in numbers of medium sized farms can be expected to accelerate from the higher opportunity costs to these farm operators of staying in farming. Thus, despite the important role that off-farm employment opportunities play in maintaining farm household incomes on medium sized farms, it is likely that these same opportunities will exert pressure on farm labor to exit from full time farming operations. This pressure will increase as the nonfarm wage rates increase relative to farm income and the closer that these opportunities are to the current farming areas.

Ratios of farm operator to average U.S. household income are listed in Table 2. They seem to parallel the rural population movements during the 1970's and 1980's. As the ratio increased during the 1970's, rural population was also increasing faster than in metre counties. Then as this ratio declined in the 1980's, metro area population has grown more rapidly so that rural areas are losing population share to metropolitan counties.

On a conceptual level, Schultz (1951) pro-

Table 2. Farm Operator Average Household Income, Average U.S. Household Income, and population Growth, Selected Periods, 1965-1984.___

	1965-69	1969-73	1973-79	1979-84
Average adjusted USDA farm operator income.*	$7,580	$12,369	$17,435	$21,45
Average U.S. money income*	$8,586	$10,957	$15,863	$24,20
Ratio of Farm to U.S. population income*	0.88	1.13	1.10	0.89
Average annual rate of population growth:** (percent)				
Metropolitan counties	3.3	1.1	0.9	1.0
Nonmetro counties	0.4	1.5	1.4	0.9

* Calculated from Table 2, Ahearn, 1986

** Calculated from unpublished data, Bureau of Economic Analysis, U.S. Department of Commerce. Metro designations are for 1974.

posed the "retardation hypothesis" to explain the impact of economic development on the agricultural sector. This was an explanation for ' 'why major parts of agriculture fall behind in the procession of economic progress" (Schultz, 1951, p.205). Despite the rather dramatic change in the size structure of agriculture over the past 35 years, his hypothesis is still helpful in understanding the interaction between rural economic development and the fortunes of agriculture. To explain the nature of the economic development process in the U.S. economy Schultz (1951, p.203-204) formulated a three part hypothesis:

1. Economic development occurs in a specific locationai matrix. There can be one or more such matrices in a particular economy. The process of economic development does not necessarily occur in the same way, at the same time, or at the same rate in different locationai matrices and at different locations in the particular matrix.
2. These locationai matrices are largely industrial-urban in composition; the centers of these matrices in which economic development occurs are mainly not out in farming or rural areas although some farming areas are more favorably situated than others.
3. Existing economic organizations work best at the center of these urban-industrial areas and farm areas closest to centers of such a matrix benefit relative to peripheral farm areas.

In sum, Shultz argues for a regional context for examining the vitality of agriculture and that those farm enterprises that are located near the urban-industrial complex in the locationai matrix will benefit relative to more isolated farm enterprise.

Nichols (1961) provided an empirical test of Schultz's hypothesis in a comprehensive study of the Tennessee Valley region over the first half of this century. He found evidence that persistent and increasing intercounty differences in farm income per worker can be attributed to differences in county rates of industrial urban development. Note that this is not total income per farm worker (which merely attributes an off-farm employment role to the urban-industrial complex). Rather,

> Local urban-industrial development transmits its effects on local agricultural productivity and incomes thru its impact on local factor and product markets, which function more efficiently the greater the level of nearby industrial-urban development. (Nichols, 1961, p. 326)

Capital Markets

First, consider the impact of urban-industrial complexes on local capital markets. In counties with well developed urban-industrial complexes, there was a high level of bank deposits per capita. Furthermore, much of this high per capita deposit effect was due to outside capital investment in nonfarm sectors which increased local income and savings. The enhanced credit availability had several direct beneficial effects on the area agriculture. First, there was an increase in available credit for farms which enhanced the level of investment in land improvements and capital spending per farm.

Second, this increased the level of the capital to labor ratio on these farms, and larger scale farms resulted in these counties relative to counties where urban-industrial development was slow. All of these effects worked to increase the level of farm income per worker. (Nichols, 1961, p. 331-332). Again note that there is no reference to the off-farm employment effects of raising total income to the farmer but only to the effects on enhanced farm productivity and farm income per worker.

There were indirect benefits as well. On the product market side, there was an increase in the number of local agricultural supply firms as well as food processing activities. A second indirect benefit was the enhanced local tax base which provided for an increase in the quality of public services (education, roads, health) to the rural population. A contemporary account of indirect costs to communities of troubled financial institutions in rural areas can be found in Ginder, Stone and Otto. (1985)

Local Labor Markets

When Nichols looked at the effects of urban-industrial development on local labor markets he emphasized that the availability of off-farm employment opportunities results in an increase in the efficiency of local labor markets. What he means by this is that the opportunity cost of farm labor rises with nearby urban-industry activity. This forces those who remain in farming "to reorganize their farms to raise labor productivity enough to cover the higher labor opportunity costs" (Nichols, 1961, p. 337).

Such a reorganization can take two forms: One, nearby uneconomical, small but full time farms can become part-time farms by family members taking off farm employment.

> This adjustment, which is obviously easiest to effect, will tend to raise the productivity of the residual farm labor to the level in the alternative. Small, full time farmers in the less industrial counties, on the other hand, lack both equal opportunities and comparable economic pressures to raise their productivity and incomes by part time farming (Nichols, 1961, p. 337).

A second form of economic reorganization in response to the higher opportunity costs of farm labor in urban-industrial counties is the enlargement of full time farms to raise the level of labor productivity to levels consistent with the new higher opportunity costs of labor. Because the land values in these counties might be driven up by nonfarm development relative to other counties, more intensive land use might also be expected in the urban-industrial counties.

Indeed, the emergence of a dual structure of farming is quite consistent with the notion of rising opportunity costs of farm labor in the urban-industrial counties. Nichols, of course described the evidence he found from the evolution of farming over the first half of the twentieth century for one region of the United States. Still, it appears that his conclusions regarding the evolution of the farm structure in the U.S. are consistent with more recent trends.

A Contemporary View

A more contemporary view of the impact of rural economic development on farming recognizes the increased mobility of farm labor and increased awareness of alternative opportunities for farm labor. Thus it is not surprising that a dual structure of farming consistent with the rising opportunity cost of farm labor should become increasingly prevalent. A major distinction between the current circumstances and those of 50 years ago is not any change in the economic forces behind the influence that urban-industrial development may have on the structure and efficiency of the farm sector (i.e. the labor opportunity costs of farm labor have increased). The difference between now and then is the vast improvement in rural communications, and especially transportation infrastructure that have made farm labor in marginal operations more keenly aware of higher return opportunities not only in the next county but throughout the locational matrix. Thus, now it is more a matter of regional economic development than development in a specific rural county that is providing the urban-industrial complex force to use labor resources more efficiently on the farms that remain.

In terms of capital markets, rural development impUes a new source of capital inflows and importantly a new source of portfolio diversification for smaller rural banks. The need to diversify loan portfolios to survive as rural bankers was amply illustrated by a tale of two banks in St. Joseph, Missouri. Last October, the First National Bank of St. Joseph became the largest bank to fail since the Great Depression in Missouri. Farm loans had

Table 3. Semi-Structural Equations for Total Employment and Population: Nonmetro Counties 1978 to 1984.

		1984 Log Employment	1984 Population
	Mean Value:	8.343	9.753
Intercept		-0.450*	-0.219*
Log of Population, (Pop) 1984		0.304*	—
Log of Employment, (Emp) 1984			-0.023*
Log of Lagged Pop, 1978			1.021*
Log of Lagged Emp., 1978		0.720*	
Interstate Highway Density, 1982 (miles per acre)		0.001*	0.0003*
State Primary Road Density, 1978 (miles per acre)		0.001	—
Right to Work State, 1978 (1 = yes; 0 = no)		0.008	
State Cumulative IDBS thru 1980 (Industrial Development Bonds in millions)		0.000	—
Share with High School Educ. 1980		-0.500*	—
Share of Pop with Some Post High School Educ., 1980.			0.270*
Mean Value of Farm Sales		0.000	_
pemand Deposits Per Capita, 1980		0.014*	
Log of Land Areas Acres		-0.012*	0.018*
Share Employment in Services, 1978		-0.147*	-0.054*
Nonmetro Adjacent County 1978		0.012*	0.015*
Percent of Population Black, 1980		-0.001*	-0.0001*
Crimes per 100,000 POP, 1980			0.0000*
Local Taxes per Capita, 1980		—	-0.002
Share of Farm Operators Working, 100-199 Days off the Farm, 1978		—	-0.019
Share of Farm Operators Working >than 100 Days off the Farm, 1978		—	0.139*
Number of counties: 2441	R^2:	0.98	0.99

* Significant at least at the .10 level.

been the cause of the failure. Meanwhile, Ameribank of St. Joseph's diversified in the early 1980*s by buying several smaller banks in some urban areas of the state. According to the bank's president, Mr. Sprong, the "move was tremendous for us because it gave Ameribank some nonfarm loans that helped offset some of the souring farm loans" (Kansas City Times, June 17, 1986.)

Of course, it is not novel to suggest the need to analyze the local county economy from a regional perspective. Whether they are called locational matrices, or functional economic areas, the idea has been around for a while. What may be interesting is to specify the linkages between regional labor markets and the performance and structure of agriculture. Some preliminary empirical work of employment change in nonmetropolitan counties of the United States is shown in Table 3. Here, a Carlino-Mills (1985) type of employment and population model was estimated for the nonmetropolitan counties of the United States for the 1978 to 1984 period.

Generally, the results suggest that counties that have small part time farm operations, where the operator spends most of their labor time off the farm, have faster population growth than those counties where less time is spent in off-farm employment. Though the location of the off-farm employment is not known from our data, it appears that those counties that are well situated relative to the urban-industrial complex where the off farm opportunities are located have prospered relative to other counties. Moreover, our preliminary results support the findings of Carlino-Mills that population change leads employment change. Thus, well situated (adjacent to a metropolitan area) rural counties with ample regional off-farm employment opportunities have fared well relative to other rural counties in terms of county population and employment change.

How might this affect the full time farming units of medium and large size? Drawing on the conclusions of Nichols, we might expect that capital markets will benefit and local credit availability be enhanced in counties that maintain their population base. Our results further indicate that the expansion of the per capita checking and time deposit base in a county will further enhance the employment growth in the local county. Accordingly, the indirect benefits accruing to larger scale agriculture mentioned by Nichols will be more likely. These are the increased tax base for higher quality public services and employment activity in the product markets linked to farming.

Of course, we have not specified the conceptual linkages between rural labor markets and the impact on large scale agriculture in our work. Our aggregate analysis is merely indicative of potential linkages and recognizes that rural labor markets are more important to farming at all size levels than is often recognized.

To summarize, I suggest the following paradigm of the linkages between rural economic development and the vitality of the farm sector. Increases in the opportunity cost of farm labor from enhanced rural economic development results in more part time farmers, larger scale farming and the well known disappearing middle size operator. (See Kislev-Peterson (1982) for a formal analyses and Runge (1985) for some recent implications of the role that external financial diseconomies of scale have played in the farm structure issue.) This factor market pressure will result in enhanced labor productivity levels on the farms that remain else the farm labor can not justify remaining in full time farming. While psychic income from farming may be important, this effect does not diminish the economic pressure to be efficient or to exit full time farming.

At the same time, rural economic development also tends to provide for a smoother transition for the middle size farmer as off-farm employment opportunities for family members are enhanced. Furthermore, rural development that provides off-farm employment for farmers serves to stabilize county population in rural areas which in turn leads to increased rural county employment levels. Increased deposits per capita from rural economic development has positive employment effects in the local economy as well. Direct benefits to those remaining in full time farming include an enhanced supply of credit while indirect benefits include higher quality public ^ services and enhanced product markets linked to agriculture.

Thus, the spatial identification of rural labor markets, how these markets work and analysis of the effectiveness of alternative policy tools in promoting rural economic development are important research issues not only for rural residents but for the analysis of the likely evolution of the structure and productivity of farming in the U.S. Given this hypothesis regarding agriculture's stake in rural economic development, where might rural development be expected to be most robust?

Where Is Rural Economic Development Underway?

Using the nonmetropolitan county designations in Bender, et al. (1985), the development process over the past 20 years in rural America has been analyzed (see Henry, Drabenstott and Gibson (1986). Several interesting trends emerge from this analysis that are pertinent to the role that rural economic development will play in determining the efficiency and structure in agriculture along the lines discussed above.

The average annual rates of growth in real per capita income, real personal income and population over the 1965 to 1984 period are listed in Table 4. The population and income components indicate the underlying strength over this period of two of the rural county groups. These are the retirement and government counties. In the 1979-1984 period, both groups had faster rates of income and population growth than all other nonmetro areas as well as faster growth than the metro counties. Thus, there is evidence that these rural areas have been able to compete effectively for jobs and income with the metropolitan areas even while most rural counties have fallen on hard times. However, rural counties with a farming, manufacturing or mining economic base have generally performed poorly over the most recent period. Unfortunately, this group of counties accounts for the vast majority of income and employment in rural America. Population and income growth have been particularly slow in the farm dependent counties over the most recent business cycle. Again, this indicates that the influence of rural economic development on farming is a regional

Table 4. Real Personal Income and Population Growth in the United States, Metropolitan and Nonmetropolitan Counties, Selected periods, 1965-84.

	Average Annual Growth Rates							
			1969-73		1973-79		1979-84	
Area	Personal Income	Population	Total Personal Income	Population	Total Personal Income	Population	Total Personal Income	Population
Metropolitan	7.0	3.3	3.4	1.1	1.9	0.9	1.8	1.0
Nonmetropolitan	4.6	0.4	6.2	1.5	2:2	1.4	1.2	0.9
Farm	3.7	-0.6	9.3	0.5	-0.2	0.7	0.5	0.6
Mining	3.8	-0.4	6.8	1.4	4.7	2.0	-0.1	1.4
Manufacturing	5.0	0.8	4.8	1.3	2.0	I.I	0.8	0.5
Government	5.2	1.1	5.9	2.1	2.7	1.8	2.1	1.2
Retirement	5.3	0.9	7.7	3.6	5.0	3.3	3.3	2.6
Trade	4.0	0.0	6.0	1.0	2.1	1.0	1.0	0.8
Mixed	5.4	1.3	6.2	1.2	1.6	1.2	0.9	0.8
Other	3.3	-0.3	7.0	1.3	3.4	1.8	0.7	1.2

Source: Calculated from unpublished data. Bureau of Economic Analysis, U.S. Department of Commerce.
See Henry, Draberistott and Gibson (1986) for explanation of the type of county designation.

concern. If rural economic development is to influence the efficiency of farming and to play a transitional role in supporting farm family incomes, it appears that this development will be largely outside the farm dependent counties.

What Sectors Are Growing?

At least during the 1980's, rural development has meant mostly the growth of the government and retirement communities. Why is this the case? Obviously, agriculture, labor-intensive, rural manufacturing and mining have lost foreign export markets. Also, increased competition from inexpensive imports have had a depressing effect on the growth of the traditional basic sectors of rural counties. However, the more fundamental shift to a services economy in the United States (see Table 5) has also had an influence on the spatial distribution of economic activity. It has generally favored metropolitan counties that have the market size needed to support a wide range of service specialties. The metro counties also have amenities and agglomeration economies that attract the more footloose industries (i.e., those not tied to a particular resource base). How have rural counties fared in this move to the service economy? And, are the jobs that

Table 5. Sectoral Jobs Growth 1955-1985.

	% Nonfarm Jobs		% Growth in Jobs
Sector	1955	1985	1955-1985
Miscellaneous Services	12.4	22.4	+ 250
State-Local Government	9.3	13.9	+ 188
FIRE	4.6	6.0	+ 154
Retail	15.3	17.8	+ 125
Wholesale	5.5	5.9	+ 106
Federal Government	4.3	2.9	+ 31
TCPU	8.2	5.4	+ 28
Total Services	59.6	74.3	+ 141
Construction	5.5	4.8	+ 66
Mining	1.6	1.0	+ 22
Manufacturing	33.3	19.9	+ 15
Total Goods	40.4	25.7	+ 22
Total Jobs (Mil)	50.7	97.8	+ 93

Source: The Economist, May 17, 1986, P. 75.

Table 6. Industry Division Employment Distribution by Type of Nonmetro County First Quarter 1985.

	County Type							
Shares	Metro	Normetro: Man.	Min.	Ag.	Retire.	Govt.	Mix.	Trade
Government								
Federal	3.17%	1.18%	1.96%	2.02%	1.60%	7.59%	4.27%	2.02%
State	3.27%	2.64%	3.17%	2.55%	3.60%	11.78%	6.81%	4.29%
Local	9.42%	12.23%	15.21%	20.38%	14.06%	13.21%	14.82%	14.49%
Private								
Agriculture	0.69%	0.55%	0.56%	6.24%	2.75%	1.27%	4.27%	0.83%
Mining	0.53%	0.51%	22.11%	0.83%	1.05%	0.57%	1.74%	2.46%
Manufacturing	19.38%	39.16%	8.21%	17.41%	16.22%	13.25%	26.70%	19.00%
Construction	4.49%	3.30%	3.82%	3.27%	6.01%	4.47%	3.34%	3.93%
TCPU	5.33%	3.72%	6.34%	4.22%	4.65%	3.61%	2.94%	5.66%
Wholesale	6.26%	3.62%	4.29%	6.65%	3.75%	3.08%	3.20%	5.41%
Retail	17.45%	16.45%	16.88%	17.83%	22.02%	19.86%	16.15%	19.80%
FIRE	6.79%	3.12%	3.36%	4.16%	4.60%	3.94%	2.94%	4.16%
Services	22.79%	13.51%	14.09%	14.44%	19.67%	17.36%	12.82%	17.95%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Calculated from Bureau of Labor Statistics, ES202 program.
TCPU = Transportation, Communication and Public Utilities.
FIRE = Finance, Insurance and Real Estate.

are being created by rural economic development likely to be attractive enough to accelerate the process of converting medium-sized farmers into part-time farmers? In what sectors have the nonmetro counties been able to generate new jobs? These questions may be addressed by looking at the relative sectoral growth in rural and urban areas.

The nonmetro service sector represents a smaller share of total employment in nonmetro counties than in metro counties as illustrated in Table 6. Given the small population base of most nonmetropolitan counties, it is not surprising that they are unable to support a wide range of services. This is apparent in the relatively low service employment shares in most nonmetro counties. However, again note the relatively large service shares of the retirement and government counties. This is consistent with the relatively strong performance of these counties in the 1980's despite the generally slow growing rural counties.

Furthermore, by using shift share analysis of the 1978-1985 period (see Table 7), we find that all the nonmetro counties lost competitive shares of employment in services to the metropolitan counties with the important exceptions of government and retirement counties. All other nonmetro counties, which comprise the vast majority of the total, lost share of service employment. This simply means that these nonmetro counties had employment growth in services slower than the national average while metro, nonmetro-retirement and nonmetro-government grew faster than the national average.

Preliminary analysis of the determinants of this change in competitive share for nonmetro counties for the 1978—1985 period indicates that agglomeration effects (proxied by employment per square mile in the county) was strongly associated with an increase in competitive share in the nonmetro counties. So it would seem that those counties with industrial-urban clusters in nonmetropolitan America have fared better than other parts of rural America in the participation of the national move to the service economy. We may ask some questions about these developments. First, if nonmetro counties are not fully participating in the service sector boom then what will fill the jobs gap in these counties? Second, are the jobs that are created in the service sectors likely to be attractive enough to accelerate the exit of medium-size farms from full-time farming? Or, will they only provide supplementary income to full-time farmers thus enabling them to remain in farming while foregoing more radical changes in lifestyle by moving to or commuting longer distances to higher paying jobs. These are interesting research questions because they will largely determine how fast and if the current structure of agriculture will change. Looking

Table 7. Regional Share (RS) Effect, First Quarter, 1978-1985. (thousands of employees)

Sector	County Type: Metro	Man.	Min.	Ag.	Retire.	Govt.	Mix.	Trade
Manufacturing	38	-101	-12	19	35	22	11	-12
Construction	141	-57	-14	-17	7	-4	0	-57
TCPU	- 8	-4	7	-4	12	-3	0	0
Wholesale	53	-17	-2	-23	8	1	-2	-17
Retail	66	-43	-9	-46	57	19	0	-43
FIRE	11	- 22	5	-4	11	2	-1	-2
Services	158	-87	-12	-33	22	12	1	-60
Other	10	-3	-25	-6	8	8	0	8
Federal	-32	4	5	6	2	2	1	7
State	-25	6	8	6	8	-9	2	5
Local	-105	-4	33	8	15	29	-1	25
Total	575	-684	16	-72	215	82	-6	-126

Source: Bureau of Labor Statistics, U.S. Dept. of Labor, ES202 program.

$$RS_i = e_i^o \left[\left(\frac{e_i^o}{e_i^o} \right) - \left(\frac{E_i^o}{E_i^o} \right) \right]$$

where: e_i^o = 1978 employment in county type in sector i.
e_i^o = 1985 employment in county type in sector i.
E_i^o = 1978 employment in U.S. type in sector i.
E_i^o = 1985 employment in U.S. type in sector i.
Note: Michigan data missing.

at the average wage levels for broad industry groups in the different types of counties in Table 8 indicates that the better paying service sector jobs are largely in metropolitan counties. Thus, it appears that most rural counties not only are growing more slowly in the services sector but that the service sector jobs in rural areas are at the lower end of the wage scale.

Summary and Policy Implications

Rural economic development in the narrow jobs creation sense takes place in a locational matrix. There are continuing factor market pressures to effect efficiency in the market for labor in rural areas. These pressures currently favor a move to fewer full time farmers and more part time farming. Ginder, Stone and Otto (1985) have illustrated for Iowa that most displaced fanners prefer to remain within 20 miles of their farm area. Yet many may leave for metro America because there is no viable urban-industrial cluster in their farming region. Thus, rural counties may lose population and eventually the rural constituency in many states will become highly skewed toward larger farms that may have little interaction with local community businesses.

Table 8. 1985 Average Annual Wages by County Type.

Sector	*County Type* Metro	Nonmetro: Man.	Min.	Ag.	Retire.	Govt.	Mix.	Trade
Manufacturing	$24,873	$19,012	$18,682	$15,563	$16,457	$17,102	$19,140	$17,650
Construction	$21,377	$15,782	$19,220	$18,109	$16,533	$15,303	$21,600	$17,528
TCPU	$26,174	$21,204	$22,176	$19,549	$21,634	$21,091	$21,273	$21,853
Wholesale	$24,684	$16,336	$19,478	$14,786	$15,893	$16,533	$16,667	$16,852
Retail	$10,972	$ 8,975	$ 9,326	$ 8,347	$ 9,345	$ 8,950	$ 9,124	$ 8,898
FIRE	$24,722	$15,416	$16,222	$14,971	$15,652	$15,750	$15,091	$15,877
Services	$17,610	$12,061	$13,086	$10,074	$13,048	$12,709	$12,875	$12,777
Federal	$26,011	$22,494	$22,476	$19,882	$23,000	$22,573	$22,375	$22,286
State	$20,146	$17,864	$18,588	$17,302	$19,056	$19,331	$19,137	$17,791
Local	$19,168	$14,120	$14,896	$13,178	$14,847	$15,068	$15,063	$14,040
Total	$19,850	$15,566	$18,116	$12,863	$14,131	$14,987	$16,011	$14,710

However, if off farm employment opportunities are generated in a urban-industrial cluster located in nonmetropolitan areas, this will serve to stabilize rural county population (and thus employment) and a rural constituency that will be more palatable to urban politicians than the notion of wealthy landowners at the Federal trough.

How might these urban-industrial clusters in nonmetro America be invigorated? A resurrection of growth center strategy within rural America seems appropriate. This would require that rural development location matrices be defined and the interaction within the rural matrix and the outside world be examined. As Mehra (1986) found for Japan, lagging regions can best be aided through a public policy of investment that complements private sector investment decisions in all regions but gives more favorable treatment to the lagging regions. This enhances national growth while giving more regional balance to the resulting spatial distribution of economic activity. Furthermore, Japan was able to obtain this regional balance in about a decade.

Regardless of the type of rural development policy used for stimulating urban-industrial development in rural areas, there will be a need to focus these efforts on a few places within the location matrix which might cross state lines as well as county lines. Such a regional development authority would best be a Federal agency that had authority and funding to implement a growth strategy. Perhaps a few mini versions of the Appalachian Regional Commission that would focus on development of industrial-urban complexes in nonmetro America would be appropriate.

Two further conclusions on the types of policy that might be effective can be gleaned from this discussion. First, traditional policy that attempts to attract industry to a rural area via tax and expenditure subsidies and or infrastructure improvements may be less successful in maintaining a viable local county population base than programs designed to keep and attract residents to an area. If the Carlino-Mills results and our findings are reasonable, it is population growth that attracts employers more than the converse. Enhanced quality of public services and improvements in environmental and cultural amenities may be more effective in ultimately maintaining a stable employment base than the current emphasis on industry hunting. In addition, government at all levels could play an important role in promoling stable employment opportunities by selecting rural sites for new or expanding offices or other installations. This, of course is not a new idea but with the reduction in the Federal role in rural development, a more aggressive role for the state government in this area may be needed. Our data reveal that government based nonmetro counties do fare better than most others and have even outperformed metro areas in many cases. So the role of government installations should not be overlooked in a state rural development policy.

The second perspective on rural development policy gleaned from our results involves the broader farm structure issue and its relationship to rural economic development. If the states were to undertake more intense manpower retraining and relocation assistance programs to meet the needs of new industry locating in or near rural counties, we expect to see an acceleration of the demise of the small full time farmer. As such aid to distressed farmers increases, his job mobility is enhanced and a lower offered non farm wage rate will be needed to result in a decision to exit full time farming. Moreover, this job mobility effect can be expected to be more pronounced for the younger operators who may be more technically advanced but lack the financial assets to offset the differences in income opportunities in the farm and nonfarm sectors. As Runge (1985) has noted, this age selectivity effect may have adverse long term consequences for the level of technical advancement of the farm sector and thus its competitive position in world markets.

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