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Shirley Porterfield

## Service Sector Offers More Jobs, Lower Pay

*The shift in employment from manufacturing to services in 1981-86 slowed the increase in the level of average annual pay of U.S. non-agricultural workers. The distribution of jobs among industries in the non-metro job market changed more than those in the metro job market, resulting in a slower increase in annual pay for nonmetro workers.*

Industry in the United States has been shifting from goods production to services since the late 1940's. An accelerating rate of shift after 1981 translated to a 1981-86 loss of about 1.2 million manufacturing jobs, while services-producing industries gained more than 12 million jobs. The Bureau of Labor Statistics projects that nearly all net job creation through the year 2000 will be in the service sector.

Manufacturing was a major non-agricultural rural employer in the 1960's and 1970's. The relatively low-skilled, assembly line jobs it provided fell victim to the recession of the early 1980's, forcing many rural manufacturers to streamline or close their operations. As a result, rural employment in manufacturing fell from 32.7 percent of the workforce in 1981 to 29.8 percent in 1986 (table 1). In both urban and rural areas, the share of employment in manufacturing, construction, and mining fell while the share of employment in services-producing industries rose.

This shift in industrial structure, represented in the rising importance of the service sector as an employer, has aroused some concern that relatively high-paying manufacturing jobs lost by nonmetro areas during the last

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recession are being replaced with low-paying services-producing jobs. However, this characterization overlooks the diversity of required skill levels and, therefore, wages within both the manufacturing and service sectors. This diversity, an important factor influencing the economic effect of structural change, is illustrated here through an ex-

amination of wage differentials in industries in which there were large gains or losses in employment during the 1980's.

Using this information on wages in industries which have grown or declined in employment since 1981, this article strives to answer two questions. First, if the industrial structure had been held constant during 1981-86, would the average worker be better or worse off in terms of annual pay than he or she actually was? Second, did the shift in industrial structure over this period contribute to a changing distribution of earned income?

**Table 1—The share of total nonagricultural employment by industry and region**

Region	Manufacturing		Services		Construction, mining	
	1981	1986	1981	1986	1981	1986
	<i>Percent<sup>1</sup></i>					
<b>United States</b>	25.7	21.6	66.7	70.6	6.8	6.3
Urban	24.3	20.0	68.9	72.7	6.4	6.1
Rural	32.7	29.8	55.7	59.4	8.9	7.3
<b>Rural</b>						
Northeast	35.1	28.2	56.8	61.9	5.4	5.9
Midwest	31.6	29.8	59.2	61.4	6.4	5.3
South	37.6	34.4	49.6	54.1	10.2	8.4
West	17.1	16.1	66.6	69.8	13.1	9.6

<sup>1</sup>Percentages do not add due to exclusion of agricultural services and administrative and auxiliary employment.

Rural employment in restaurants grew 20 percent between 1981 and 1986, despite the low wages generally paid.

Photo © J. Norman Reid



The concern over pay levels does seem to have some legitimacy. If we assume that the relative level of wages across industries did not change between 1981 and 1986, 1986 data on average annual pay for each industry suggest that the average rural worker's annual pay would have been higher in 1986 if there had been no shift in employment between industries during the 1981-86 period. Furthermore, the rural wage structure was affected more than the urban wage structure by industry shifts, because rural employment gains were more likely to be in services-producing industries with

relatively low pay, while rural employment losses were in natural resource-based industries and higher paying manufacturers of durable goods. Despite the overall lower wage level increases due to industrial shifts, the distribution of employment in high-, middle-, and low-paying jobs changed very little over the period.

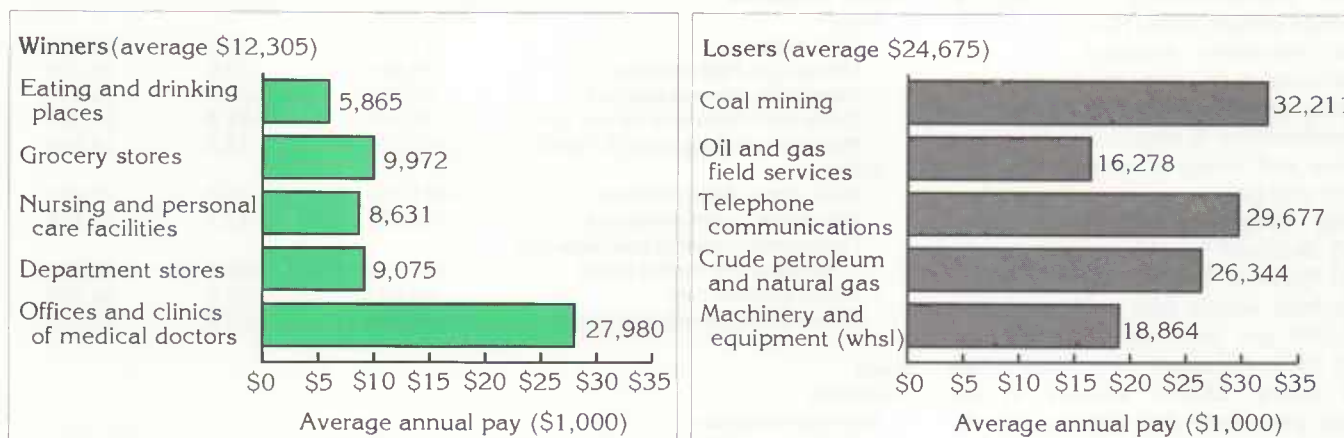
### What was Lost and What was Gained?

A look at the top gaining and losing industries in terms of number of workers over 1981-86 provides insight

into the impact of industrial shifts. Table 2 lists the top five losers by metro/nonmetro status, by region, showing absolute employment change, employment change as a percent of 1981 employment in the industry, and average annual pay in 1986. Note that average annual pay does not account for differences in the proportion of part-time employees among industries, adding to the difficulty of comparing service sector annual pay with annual pay in manufacturing industries. The largest absolute employment gains over the period in almost all county groups

Figure 1

**Growth industries in rural areas pay average wages half the level of leading job loss industries.**



### Industrial Shift Reduces Fringe Benefits, Increases Part-Time Employment

Perhaps the most heated debate associated with employment growth in the services-producing sector concerns the "quality" of employment. Manufacturing jobs are generally perceived as high quality, providing high-paying, relatively stable employment with good fringe benefits. Conversely, most services-producing positions are thought to be low skilled, low-paying, often part-time, with few, if any, fringe benefits. Fringe benefits aside, employment in the service sector is more likely to be part-time than manufacturing employment.

The proportion of the labor force employed in part-time (less than 35 hours per week) and temporary posi-

tions has increased dramatically since 1980. Over 1980-88, while the U.S. labor force increased 14 percent, part-time jobs increased by 21 percent. At the same time, the average number of weeks worked per year has increased since 1979 for part-time workers, and the average number of hours worked weekly has increased for both part-time and full-time employees. Thus, there are more part-time workers now than in the late 1970's, and they are working longer hours, on average, than did part-timers in the late 1970's. Part-time employment generally pays less per hour than does equivalent full-time work and often does not include any fringe benefits.

In 1985, approximately 25 percent of the labor force in the services-producing sector worked fewer than 35 hours per week, about twice the part-time component of the manufacturing

labor force. While the average high-technology manufacturing worker spends slightly more than 40 hours per week on the job, the work week of service employees varies from an average of 38.2 hours for business services workers to 25.6 hours for the average restaurant employee. This relatively larger proportion of part-time employees in the services-producing sector is considered an advantage by some researchers and a disadvantage by others depending on whether or not the move to part-time work is voluntary. If part-time employees are largely men or women with small children, the availability of "flex time" and shared work could be a benefit. A recent National Planning Association study estimates that 73 percent of part-time workers want part-time work. However, this still leaves 5.3 million part-timers who would prefer to be working at a full-time job.

were in eating and drinking places and grocery stores, both industries with low average annual pay (most pay less than \$10,000 per year, on average) and high proportions of part-time employees. Most rural counties also gained employment in nursing and personal care facilities and department stores, again industries characterized by low average annual pay and part-time work. Industries that lost employment during the 1980's were primarily manufacturing, natural resource-based, or construction, all with relatively high levels of average annual pay.

Regional specializations predominate. Rural counties in the Northeast lost more than half of their 1981 employment in computer and office equipment manufacturing (\$31,557 in average annual pay). However, Northeast nonmetro counties did gain employment in two relatively high-paying services-producing industries, miscellaneous business services and offices and clinics of medical doctors. Farm and garden machinery manufacturing (averaging \$22,216 in annual pay) declined by 40 percent in the rural Midwest. The petroleum and coal industries, whose jobs paid more than \$25,000 per year, on average, were hard hit in the South. The rural South lost nearly 23,500 workers in the crude petroleum and natural gas industry, 71 percent of the 1981 workforce in this industry. This is a large drop considering that by 1981 the Nation was already in the middle of a recession. Employment losses in the rural West were concentrated in the mining and wood products industries, whose jobs averaged pay of nearly \$30,000 per year in 1986.

The rural Midwest was the only area in which manufacturing industries appear among the top five gaining industries. Miscellaneous plastics products (with an average annual pay of \$19,265) grew by more than 20 percent while employment in motor vehicle manufacturing (\$28,705 in average annual pay) increased by nearly 15 percent.

The reduced increase in annual pay attributable to the 1981-86 shift in industrial structure varies by region and by metro/nonmetro status (table 3). The Nation's average annual pay would

**Table 2—Employment change by region: Top five gaining and losing industries, 1981 to 1986**

Region/industry	Employment change		Average annual pay, 1986
	Number	Percent	Dollars
<b>United States</b>			
<b>Gaining industries</b>			
<i>Rural—</i>			
Eating and drinking places	155,484	20.1	5,865
Grocery stores	74,995	16.2	9,972
Nursing and personal care facilities	53,717	19.2	8,631
Department stores	47,097	29.5	9,075
Offices and clinics of medical doctors	28,647	22.2	27,980
<i>Urban—</i>			
Eating and drinking places	870,734	23.3	6,940
Miscellaneous business services	509,386	41.3	18,813
Personnel supply services	392,523	72.7	10,864
Grocery stores	296,282	19.6	11,637
Computer services	224,584	72.3	29,229
<b>Losing industries</b>			
<i>Rural—</i>			
Coal mining	-41,645	-23.1	32,211
Oil and gas field services	-38,661	-33.9	16,278
Telephone communications	-33,297	-25.7	29,677
Crude petroleum and natural gas	-29,296	-61.8	26,344
Machinery and equipment (whsl)	-25,311	-16.4	18,864
<i>Urban—</i>			
Steel works, blast furnaces	-211,005	-46.7	29,486
Telephone communications	-156,625	-17.1	30,494
Construction, mining and materials handling machinery (mfg)	-144,140	-46.4	26,200
Heavy construction	-99,991	-20.4	26,786
Metalworking machinery (mfg)	-66,888	-22.9	26,755
<b>Rural Northeast</b>			
<b>Gaining industries—</b>			
Eating and drinking places	23,975	31.3	6,918
Grocery stores	8,512	17.0	9,554
Nursing and personal care facilities	7,552	26.9	10,104
Miscellaneous business services	5,358	69.7	16,259
Offices and clinics of medical doctors	4,288	34.6	26,706
<b>Losing industries—</b>			
Computer and office equipment (mfg)	-6,913	-59.8	31,557
Metalworking machinery (mfg)	-6,249	-34.4	24,249
Construction, mining and materials handling machinery (mfg)	-5,494	-40.9	24,893
Steel works, blast furnaces	-4,871	-36.2	29,204
Footwear, except rubber (mfg)	-4,410	-39.8	12,492

Continued on facing page

have been slightly higher, \$19,546 versus \$19,187, in 1986 if industrial structure had remained constant. This amounts to an average "loss" (actually a smaller increase) in pay of \$359 per worker in 1986. While the reduction in pay per worker appears low, it amounts to a national reduction of more than \$29 billion.

With the exception of the Midwest, the reduction in the level of average annual pay of nonmetro workers due to shifts in industrial structure was much

greater than that of metro workers. Workers in the nonmetro West were particularly hard hit, losing an average of \$757 in wages over the period.

### **Balance Among High, Low, Middle Earners Stays Steady, But Most High-Paying Jobs are in the City**

The potential loss of middle-class or middle-income jobs is one of the major concerns associated with the increasing role of services-producing in-

**Table 2--Employment change by region: Top five gaining and losing industries, 1981 to 1986--Continued**

Region/industry	Employment change		Average annual pay, 1986
	Number	Percent	Dollars
<b>Midwest</b>			
<i>Gaining industries—</i>			
Eating and drinking places	24,851	8.6	5,324
Nursing and personal care facilities	20,225	15.7	8,478
Department stores	14,029	26.6	8,780
Miscellaneous plastics products	11,819	22.2	19,265
Motor vehicles	8,265	14.9	28,705
<i>Losing industries—</i>			
Farm and garden machinery (mfg)	-16,389	-39.8	22,216
Machinery and equipment	-15,545	-23.7	18,563
General building contractors	-11,159	-23.4	22,095
Telephone communications	-10,339	-25.3	30,617
Electrical industrial apparatus	-7,591	-31.1	22,214
<b>South</b>			
<i>Gaining industries—</i>			
Eating and drinking places	83,443	31.9	5,996
Grocery stores	40,055	19.1	9,379
Department stores	24,142	36.1	9,115
Nursing and personal care facilities	20,433	20.6	8,239
Hospitals	14,267	11.8	17,033
<i>Losing industries—</i>			
Coal mining	-33,357	-28.4	31,176
Oil and gas field services	-28,664	-37.3	16,066
Crude petroleum and natural gas	-23,454	-70.9	27,049
Men's and boys' furnishings, work clothing, and allied garments	-18,526	-11.7	10,602
Telephone communications	-12,410	-22.9	29,128
<b>West</b>			
<i>Gaining industries—</i>			
Eating and drinking places	23,215	16.0	5,966
Hotels and motels	10,618	15.6	9,969
Grocery stores	10,356	16.2	13,099
Nursing and personal care facilities	5,507	23.2	9,224
Department stores	5,414	30.6	9,669
<i>Losing industries—</i>			
Copper ores (mining)	-10,368	-52.8	31,973
Miscellaneous metal ores (mining)	-9,222	-86.0	34,301
Telephone communications	-8,223	-36.1	28,778
Sawmills and planing mills	-7,040	-15.5	24,309
Oil and gas field services	-6,767	-34.4	16,819

industries. Several researchers have found a widening of the real wage gap between manufacturing and services-producing employment over 1973-87.

A study recently completed for the Joint Economic Committee of Congress, looking at shifts in employment shares among U.S. industries, found that industries that expanded (increased their share of total employment) between 1981 and 1987 paid an average of \$10,404 less per worker per year than industries that lost employment share over the period. This estimate represents a reduction of \$113 in annual pay per employee,

totaling \$9.3 billion per year for the entire U.S. workforce.

Table 4 shows the change in the distribution of employment among low-, medium-, and high-wage jobs over 1981-86. The proportion of all workers in the middle-pay class fell slightly, from 45.2 percent in 1981 to 44.9 percent in 1986. The loss in high-pay workers (1.6 percentage points) was more than offset by the gain in low-pay workers.

Results for the regions are similar, although there was a slight gain in the share of workers in the middle pay

group in the metro Midwest. With the exception of the rural Midwest, rural areas lost a larger share of high-paying jobs than did urban areas. Although these losses did not translate directly into larger gains in low-paying jobs, the increase in low-paying jobs was greater in rural than in urban areas except in the Midwest. For the Nation, the share of employment in high-pay jobs was 87.4 percent of the 1981 figure. The share of employment in high-pay jobs also declined in urban areas, but was a larger proportion of the 1981 share (93.7 percent). Low-paying jobs in urban areas increased by 5.4 percent, about 1 percentage point less than the increase in rural low-paying jobs.

### **Service Sector Offers More Jobs, Less Pay, at Least for Now, But Pay May Go Up**

Firms in the service sector were prolific job creators in the post-recessionary 1980's. Services were the main source of new jobs during the first half of the 1980's as employment in services-producing industries grew by 5.8 percent, and goods-producing employment declined by 14.2 percent. The Nation's metro and nonmetro counties both have gained back jobs lost during the recession of the early 1980's. But, as this analysis indicates, the jobs gained were in industries with lower average annual pay. An additional problem is that many workers in these services-producing industries are not employed full-time and may be accepting part-time work when they would rather work full-time.

The answer to the motivating question, are services-producing jobs "worse" than goods-producing jobs, is "yes" for the average worker. It is clear that average annual wages would have been higher (and presumably workers would have been paid more) if the shift in industrial structure had not occurred. However, the services-producing sector is quite diverse, including both high- and low-paying jobs. While most of the absolute employment increases were in relatively lower paying services-producing industries, the annual wages of some services-producing industries with the highest employment growth rates are relatively

## Data and Analysis

Data analyzed in this study were drawn from an unsuppressed version of County Business Patterns (ECBP). County Business Patterns is a data set compiled annually by the U.S. Census Bureau. If a county has one dominant establishment in an industry or there are too few establishments in an industry to ensure confidentiality, the Census Bureau omits or suppresses the data for that industry in the county. These suppressed numbers for county level employment and payroll data have been estimated by the National Planning Data Corporation of Ithaca, NY. Estimation of payroll data did not begin until 1985, eliminating the possibility of time-series analysis until a sufficient number of years have been estimated.

This study uses employment data for 1981 and 1986 and payroll data for 1986. All States except Alaska are included. Changes in county definitions over the study period make employment comparisons within each Alaska county between 1981 and 1986 virtually impossible. Wages are defined as average payroll and are drawn from employer-filed Social Security tax information. Prior to the 1983 amendments to the Social Security system, nonprofit institutions were not required to be part of the system and therefore were not counted in County Business Patterns employment data.

high. Despite the slowing of increases in average annual pay over the period, the distribution of workers earning low, middle, and high wages shifted downward only slightly, with little change in the proportion of workers falling into the middle pay bracket. With the exception of the rural Midwest, the impact of the shift in industrial structure was felt more by nonmetro workers, primarily due to losses in natural resource-based and durable manufacturing jobs. Most job increases in rural areas were in tourism-oriented industries, including eating and drinking places and hotels and motels.

One fact to be kept in mind in any comparison of industries and pay

Employment in educational services (SIC 82), social services (SIC 83), zoological and botanical gardens (SIC 84), and membership organizations (SIC 86) were adjusted to more accurately reflect actual 1981 employment. This adjustment avoids overcounting of employment gains in nonprofit industries, which would effectively bias 1986 wages downward.

Although it is generally agreed that data measuring annual income for full-year, full-time workers provide the most accurate portrayal of changes in job quality, the ECBP data include all workers, both full- and part-time, and do not distinguish between single and multiple job holders. This undoubtedly provides a downward bias on annual payroll figures. However, there is some indication that the average employee worked longer hours in 1986 than in 1981.

Because 1981 payroll data were not available, the wages in each industry in each county in 1986 were substituted to estimate the effect of the industrial shift, implicitly assuming that relative wages among industries were constant over the period. Costrell has tested this assumption at the national level, finding wage shifts among industries to account for little, if any, of the change in average earnings over 1981-87. An average wage was calculated for each county for 1981 and 1986 by summing the product of the share of employ-

during the 1980's is the tremendous increase in the size of the labor force. Nearly 11 million jobs were created, most in the service sector. Wages may have declined over 1981-86 because the supply of available labor increased so rapidly. This upward trend in the size of the labor force was further accentuated by growth in two-earner families. As the supply of available labor goes up without corresponding increases in labor productivity, the average annual pay earned by each worker goes down, according to neoclassical labor economic theory. This theory may, at least partially, explain low wages in the service sector, which has provided the bulk of the

ment in each two-digit SIC in each year by the average wage in the county in that industry in 1986. In industries in which there was employment in 1981 but not in 1986, the average wage for similar (metro or nonmetro) counties in the region was substituted.

$$W_j^{81} = \sum_i S_{ij}^{81} * W_{ij}$$

$$W_j^{86} = \sum_i S_{ij}^{86} * W_{ij}$$

where:

$W_j$  = the average wage in county  $j$  in 1981 or 1986,

$S_{ij}$  = the share of employment in industry  $i$  in county  $j$  in 1981 or 1986,

$W_{ij}$  = the average wage in industry  $i$  in county  $j$  in 1986.

The difference between the average county wage in 1986 and 1981 provides an estimate of the value attributable to the shift in industrial structure over the period.

Since this data set is industry rather than individual based, it is impossible to know how many workers are employed at two or more part-time jobs, earning the equivalent of a full-time salary. However, even if working multiple jobs, part-time employees are rarely covered by fringe benefit packages, a loss equivalent to up to 20 percent in additional pay. When health and retirement benefits are not included as part of the overall salary package, the burden of these costs is likely to be transferred to society as a whole.

jobs for a rapidly expanding workforce. The most likely alternative scenario to growth in services-producing employment is one of little or no new job growth, in which case literally millions of people would be out of work. Given a choice between a job in the service sector and unemployment, most workers would presumably choose to have a job, even at somewhat lower pay.

As the baby boomers age, the number of retirees increases, and the number of new workers declines over the next decade, the lower pay associated with many services-producing jobs will likely begin to rise (assuming no large increases in immigration). We are al-

Figure 2

Wage distributions show slight drop at high end of scale. Rural areas continue to trail in share of high-wage jobs, lead in share of low-wage jobs.

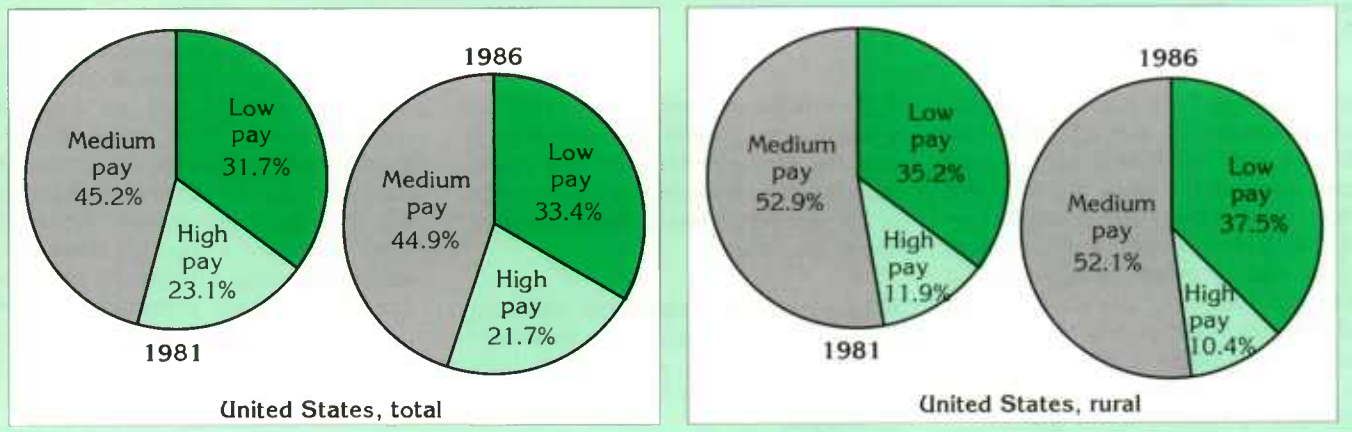


Table 3—The impact of change in industrial structure on average annual pay

Region	Average pay, 1986, with industrial structure of <sup>1</sup> —		Decline due to industrial shift	Change
	1981	1986		
	----- Dollars -----			Percent
United States	19,546	19,187	359	-1.8
Urban	20,177	19,796	381	-1.9
Rural	16,477	15,996	481	-2.9
Northeast				
Urban	21,173	20,895	278	-1.3
Rural	17,454	16,807	647	-3.7
Midwest				
Urban	20,708	20,209	499	-2.4
Rural	16,850	16,461	389	-2.3
South				
Urban	18,501	18,197	304	-1.6
Rural	15,959	15,543	416	-2.6
West				
Urban	20,641	20,258	383	-1.9
Rural	16,467	15,710	757	-4.6

<sup>1</sup>Data are from an unsuppressed version of U.S. Department of Commerce, Bureau of the Census, *County Business Patterns*, 1981 and 1986. Average pay is calculated from 1986 data.

ready seeing the beginning of this trend as employers bid up wages for entry level jobs to attract a diminishing pool of teen and young adult workers.

Low pay in many services-producing jobs may also be due to relatively low labor productivity. Many services activities, such as direct sales or food and beverage service, require face-to-face contact with customers, a task that has been difficult to automate. However, increased use of computers and new information technology have allowed many low-skill functions, such as answering telephones and routing

Table 4—The distribution of employment by average annual pay

Region	Low pay		Middle pay <sup>1</sup>		High pay	
	1981	1986	1981	1986	1981	1986
	Percent					
United States	31.7	33.4	45.2	44.9	23.1	21.7
Urban	31.2	32.9	43.3	43.3	25.4	23.8
Rural	35.2	37.5	52.9	52.1	11.9	10.4
Northeast						
Urban	26.5	27.9	44.9	44.2	28.7	27.9
Rural	34.0	35.9	51.9	51.7	14.2	12.4
Midwest						
Urban	30.5	32.1	37.3	38.5	32.2	29.4
Rural	34.9	36.4	51.8	51.4	13.3	12.2
South						
Urban	32.1	34.3	49.1	47.6	18.8	18.1
Rural	35.1	37.6	53.5	52.9	11.4	9.5
West						
Urban	28.7	29.7	44.9	45.4	26.4	24.9
Rural	37.6	40.4	50.4	49.7	12.0	10.0

<sup>1</sup>Defined as between two-thirds and four-thirds the U.S. annual average wage shown in table 1.

calls, to be automated. This substitution of capital equipment for labor in the service sector will certainly continue to grow and should eventually lead to higher wages in many services-producing jobs.

Whether or not services-producing industries in rural areas are able and willing to make use of information technology to increase labor productivity and, ultimately, the wages of service workers remains to be seen. Additional research at a disaggregated industry or occupational level is needed to assess the ability of non-

metro areas to attract these higher wage services. While services-producing industries are not the only answer for rural economic development, it seems reasonable for policymakers to make use of all available opportunities to induce development, including those offered by the services sector.

RDP

For Additional Reading...

R.M. Costrell, *The Effects of Industry Employment Shifts on Wage Growth: 1948-1987*. Study prepared for the Joint Economic Committee of the U.S. Congress, 1988.