Washington State Employment Security Department

LABOR MARKET INFORMATION

REVIEW

A Quarterly Review of Washington State Labor Market and Economic Trends

In this issue:

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The *LMI Review* is published by the Labor Market and Economic Analysis Branch of the Washington State Employment Security Department.

The purpose of the *LMI Review* is to provide timely information and analysis of the state labor market conditions in support of public and private activities that expand employment opportunities and reduce unemployment.

Questions and comments concerning any aspect of the publication may be directed to *Director*, Labor Market and Economic Analysis Branch (LMEA), Employment Security Department, P.O. Box 9046, Mail Stop: 46000, Olympia, WA 98507-9046, telephone (360) 438-4800.

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- *homepage at* ***www.wa.gov/esd/lmea***
- *On-line database (WILMA) at* ***www.wilma.org***
- *Labor Market Information Center (LMIC) at* ***1-800-215-1617***

Labor Market Information is More Than Unemployment

Commissioner
Carver Gayton

COMMENTARY

Those who track the unemployment rate both on the national and state level have been hearing new concerns added to the monthly tallies of job increases and unemployment rate declines. An unemployment rate that is a 30-year low draws yawns from reporters and no longer makes headlines.

The recent low unemployment rate sent analysts scurrying to the dusty records only to find the state rate had never been that low in March since the Employment Security Department started keeping records in 1947.

Economic reporters and business writers have tired of searching for new ways to portray statistics for reports on the economy. They caution that the tight job market increases worker demand for higher wages and threatens to set us on an upward spiral of inflation.

Wall street waits anxiously on the first Friday of the month for the national unemployment rate and pundits speculate whether the Federal Reserve's Alan Greenspan will boost the interest rate to stave off inflation. There is more to labor market information than the monthly report on the number of new jobs and the unemployment rate.

The Quarterly Analysis in this issue of the *LMI Review* takes a look back at the 1990s, a decade of heightened job opportunities. The net gain of 600,000 workers made it the greatest job generating decade in Washington State history.

The index of leading indicators rose in the last quarter of 1999, a clear sign that the record breaking economic expansion will continue into 2000. The impact of the economy on wages will continue to make headlines.

Income distribution is another issue of much interest. The article "Low Income and the Working Poor" estimates that 18.7 percent of all individuals in Washington State live in households where the income falls below 175 percent of the federal poverty level, which would be $28,788 for a family of four.

Even in this time of high employment there has been an emergence of the working poor, those who have difficulty making ends meet because of low wages and lack of advancement potential or opportunity.

The next time you hear the report on the unemployment rate, keep in mind that there is much more information on the more than 2 million people that make up the labor force in Washington State. Most of it is available 24 hours a day on the Employment Security Website at www.wa.gov/esd/lmea or call the Labor Market Information Center at 1-800-215-1617. ■

Growth Moderates as Economy Moves Forward

Fourth Quarter 1999 *QUARTERLY ANALYSIS*

The 1990s—A Decade of Change

The decade just ended was notable economically on several fronts. Environmental issues relating to timber and salmon took center stage. Restructuring in many key industries—including lumber and wood products, primary metals, shipbuilding, commercial banking, and aircraft and parts—led to increased efficiencies and, in turn, a greater competitive edge in regional and national markets. Legally mandated changes in the national welfare system channeled tens of thousands of former Washington recipients onto the active job rolls. High tech manufacturing, computer software, and Internet startups became major drivers of the economy. And services growth assumed a life of its own.

First and foremost, the 1990s were a time of heightened job opportunities. Wage and salary employment expanded by a rousing 30 percent on average from 1989 to 1999 compared to 19 percent nationally. The net gain of 600,000 workers over the ten years contrasted sharply with 460,000 in both the 1970s and the 1980s making it the greatest job-generating decade in history. Labor force growth shot up strongly early in the decade as net migration into the state ballooned, attracted by a rising area economy sitting in the midst of a national recession. But labor force growth slowed as the national economy picked up speed, labor markets progressively tightened, and statewide unemployment dropped to 30-year lows in late-1999.

Cyclical Swings in Aircraft and Parts

As is often the case, wide cyclical swings in aircraft and parts dominated much of the tone in manufacturing. From a high of 118,600 in January 1990, employment in aircraft and parts fell by 38,800 in the subsequent five years to a low of 79,800 in December 1995. A sharp turnaround in airline profitability drove up the ordering pace for Boeing aircraft and production took off. Employment shot up by 33,600 to a high of 113,400 in July 1998. Two large acquisitions in 1996—Rockwell International and McDonnell Douglas—effectively redefined the Boeing Company. But in a concerted effort to drive down costs, employment scaled back by 22,100 in the 18 months to December 1999 with more yet to come.

Meanwhile, the rest of the economy built up strongly. Machinery and electronics manufacturing added 13,000 net new jobs in the 1990s representing a 42 percent increase. And its share of the manufacturing jumped from 9 percent to 12 percent. Further losses in lumber and wood products were basically offset by equal gains in food processing over the decade keeping resource-based manufacturing unchanged at 20 percent. But it was the growth in services—especially business services—that led the economy in the 1990s. Services payrolls leaped by 264,000 or 56 percent with business services more than doubling and computer data processing and software surging four-fold over the decade to 56,000.

Services Take a Bigger Share

Significant shifts took place in terms of weight. Aircraft and parts moved from 5.5 percent of the total economy in 1990 to roughly 3.5 percent in 1999. And the ratio of aircraft jobs to computer services jobs in Washington shifted from 8-to-1 in 1990 to 2-to-1 in 1999 as the divergent trends crossed. Services as a group gained five percentage points over the decade going from 23 percent to 28 percent of total employment. Meanwhile, manufacturing's share of the total economy drifted lower from 20 percent in 1979 and 18

percent in 1989 to 14 percent in 1999—roughly the same as the U.S. average. Trade was constant at 24 percent; government held firm at 18 percent; and construction inched up slightly from 5.4 percent to 6.0 percent.

LABOR FORCE AND UNEMPLOYMENT

Year-end Labor Markets Remain Tight

Washington's seasonally adjusted unemployment rate fell four-tenths of a percentage point between the summer and fall quarters to 4.3 percent of the work force as the economy continued moving ahead. Labor markets, nonetheless, remained tight with the rate for the quarter measuring better than half a percentage point below a year ago. In comparison, the nation's jobless rate ratcheted down one-tenth of a percentage point to 4.1 percent between the third and fourth quarters.

For the year as a whole, Washington's unemployment rate averaged 4.7 percent in 1999—down a tenth of a percent from the 4.8 percent average in 1997-98. The nation's annual unemployment rate fell for the seventh year in a row, reaching 4.2 percent.

The 1990s began and ended with unemployment at historic lows punctuated by some ratcheting up at the center. Unemployment dropped sharply from 12.1 percent in 1982 to 4.9 percent in 1990—a shift from well above to well below the national average in eight years. But as the economy slowed, statewide joblessness began creeping up to 6.4 percent in 1991 and 7.6 percent in 1992-93. A pickup in the job pace in 1994-96, however, pulled the rate back down into the 6.4 percent range. And strong growth in 1997-98 tightened labor markets further dropping unemployment in the state to 4.8 percent in 1997-98 and 4.7 percent in 1999—the lowest in 30 years.

INDUSTRY DEVELOPMENTS

Quarterly Gains Centered in Trade and Services

Total nonfarm wage and salary employment grew by 11,300 workers between the third and fourth quarters—a slower pace than the 14,700 recorded twixt the second and third quarters and not much different than the 12,100 of the same period a year earlier. Wage and salary jobs increased by 41,400 over the year for a growth rate of 1.6 percent.

Is That Why It's Called FALL?

Manufacturing payrolls fell by 3,900 workers in the fall quarter led by the ongoing cutbacks in aircraft and parts (-4,100). From the fourth quarter of 1998 to the fourth quarter of 1999 total aircraft and parts payrolls were down by 18,400. The state Office of the Forecast Council is projecting a further 5,000-worker cutback through the second quarter of 2001 with perhaps a modest upturn starting in the second half of next year.

New Economy Old Economy

Other manufacturing cutbacks occurred at opposite ends of the technology spectrum. Computer and office equipment jobs were down 200 between the summer and fall quarters, and preserved fruits and vegetable payrolls fell 400. Several sectors posted modest declines: lumber and wood products; textiles, apparel, and leather; and paper and allied products; all inched lower by 100.

New Economy Old Patterns

Computer equipment manufacturers, whose products are now commonplace in business and the home, have been subject to the peak production dynamics that are common in faster-growing highly productive industries. Call it the *over-*

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subscribed franchise effect; early high profit margins and ease of entry quickly attracts new players into the field. The new players boost the competition, driving down prices and profit margins. Inevitably the gains in technology and productivity result in the market being glutted with comparable products. As a result, marginal producers are pared from the field and employment falls. While a decidedly uncomfortable position for employers and their workers, it has proved to be a boon for consumers. In addition to the quarterly employment declines, over-the-year losses were of a similar magnitude.

Even the Ups were Down

There was an up side to manufacturing employment in the fourth quarter of 1999, though it had a somewhat sour flavor to it. Payrolls at primary metals producers, particularly aluminum manufacturers rose 600. Over-the-year gains were on the order of 1,100 as well. This was all related to replacement hires at the Kaiser operations in Spokane.

The Wealth Effect

Even though there were several interest rate boosts during the fourth quarter, they were not so severe as to constrain new construction activity. They actually may have spurred home building by laying the groundwork for the possibility of future rate increases. Many consumers were likely engaging in the *buy now before the price goes up* principle. Construction employment jumped by 3,300 jobs in the fourth quarter; that was an annualized increase of 8.9 percent—over five times the average pace. Over-the-year growth in construction was up 6.4 percent, so it is obvious that growth had accelerated over this period.

Holiday Season

After several years of meager quarterly gains, and consumer penny-pinching, the 1999 holiday shopping season appeared to be a standout. Wholesale and retail trade jumped by 6,400 in the fourth quarter. Normally a seasonally adjusted series winnows out the highs and lows of the year to reveal the underlying trend. That may not have been the case this last year. Because the seasonal dynamic and seasonal factors were suppressed during the earlier part of this business cycle, the return to a more typical jump in hiring proved to be pleasantly visible. Christmas hiring proceeded in general merchandising (+2,100). Eating and drinking places also added 2,900—a percentage pace four times the norm—as consumers reveled in their gains in personal income.

Retail comparisons between the fourth quarter of 1998 and the fourth quarter of 1999 were not as glowing as the more recent trend, though were still respectable. The rate of over-the-year growth was less than half of the fourth quarter pace, but was still above the state average. Long term forecasts for retail trade show growth at only the total employment average.

B2B Booming

Services employment continued its upward trajectory by advancing 8,000 in the fourth quarter. The two sectors instrumental in setting this torrid pace were business services and engineering and management services. These two industries are among those recently tagged with the B2B label (business to business) and are the core of what has been called *producer services*. Together they were responsible for well over two-thirds of the quarterly gain in the entire services division. The other significant quarterly job increase was in health care (+1,000).

Year over year comparisons in both business services and engineering and management services were similarly impressive. Business services increase a remarkable 9.4 percent in the year over year measure. Engineering and management services grew at a 7.5 percent pace.

Inhospitable

The hospitality sector was the principal negative in the services division during the last quarter of 1999. The industry had been experiencing the downside of a surge in new hotel

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Figure 1

Nonagricultural Wage and Salary Workers [1]

Washington State, Seasonally Adjusted, In Thousands, Benchmarked: March 1998

Source: *Employment Security and Office of the Forecast Council*

				Numeric Change	
	4th Qtr 1999	3rd Qtr 1999	4th Qtr 1998	3rd Qtr 1999 to 4th Qtr 1999	4th Qtr 1998 to 4th Qtr 1999
TOTAL NONAGRICULTURAL EMPLOYMENT	2,658.0	2,646.7	2,616.6	11.3	41.4
MANUFACTURING	356.9	360.8	375.1	-3.9	-18.2
Durable Goods	249.4	253.2	266.8	-3.7	-17.4
Lumber & Wood Products	33.7 [2]	33.8 [2]	34.1	-0.1	-0.4
Logging	7.6	7.5	7.6	0.1	-0.1
Sawmills & Plywood	22.5	22.6	22.5	-0.1	0.0
Furniture & Fixtures	4.8	4.7	4.8	0.1	0.0
Stone, Clay, & Glass	8.8	8.8	8.8	0.0	0.1
Primary Metals	12.3	11.7	11.2	0.6	1.1
Aluminum	7.8 [2]	7.2 [2]	6.7 [2]	0.6	1.1
Fabricated Metals	14.6	14.6	14.7	0.0	-0.1
Industrial Machinery & Equipment	25.4	25.5	25.2	-0.1	0.2
Computer & Office Equipment	6.6	6.8	6.8	-0.2	-0.2
Electronic & Other Electrical Equipment	18.5	18.4	18.6	0.1	-0.1
Transportation Equipment	108.0	112.3	126.3	-4.3	-18.3
Aircraft & Parts	91.9	96.0	110.3	-4.1	-18.4
Instruments & Related	14.8	14.8	14.8	0.0	0.1
Miscellaneous Manufacturing	8.6	8.6	8.5	0.0	0.1
Nondurable Goods	107.5	107.6	108.3	-0.1	-0.8
Food & Kindred Products	40.5	40.7	41.0	-0.2	-0.5
Preserved Fruits & Vegetables	13.6	14.0	13.3	-0.4	0.2
Textiles, Apparel, & Leather	8.7	8.8	9.0	-0.1	-0.3
Paper & Allied Products	15.6	15.7	16.0	-0.1	-0.4
Printing & Publishing	24.1	24.1	24.3	0.1	-0.1
Chemicals & Allied Products	6.2	6.1	6.0	0.1	0.2
Petroleum, Coal, Plastics	12.4	12.3	12.0	0.1	0.4
MINING & QUARRYING	3.3	3.3	3.3	0.0	0.1
CONSTRUCTION	157.3	154.0	147.9	3.3	9.4
General Building Contractors	43.4	42.6	42.0	0.8	1.4
Heavy Construction, ex. Buildings	20.5	20.3	19.2	0.2	1.4
Special Trade Contractors	93.3	91.0	86.7	2.3	6.6
TRANSPORTATION, COMMUNICATION & UTILITIES	140.6	140.3	137.3	0.3	3.3
Transportation	90.8	91.7	90.9	-0.8	-0.1
Trucking & Warehousing	32.5	32.8	32.3	-0.2	0.3
Water Transportation	8.2	8.3	9.2	-0.1	-1.0
Transportation by Air	26.6	26.8	25.5	-0.2	1.1
Communications	33.9	32.5	30.8	1.3	3.1
Electric, Gas & Sanitary Services	15.9	16.1	15.6	-0.2	0.3
WHOLESALE & RETAIL TRADE	640.4	634.0	627.7	6.4	12.8
Wholesale Trade	154.2	154.2	153.4	0.0	0.9
Retail Trade	486.2	479.8	474.3	6.4	11.9
General Merchandise	51.2	49.1	48.9	2.1	2.3
Food Stores	70.9	70.3	69.8	0.6	1.1
Eating & Drinking	180.3	177.4	175.7	2.9	4.6
FINANCE, INSURANCE, & REAL ESTATE	138.9	137.8	137.1	1.1	1.8
Finance	61.5	61.3	59.9	0.2	1.7
Insurance & real estate	77.3	76.4	77.2	0.9	0.1
SERVICES	746.5	738.5	720.1	8.0	26.3
Hotels & Lodging	28.1	28.4	28.7	-0.3	-0.6
Personal Services	23.1	23.0	23.3	0.2	-0.2
Business Services	172.6	169.4	157.7	3.2	14.9
Health Services	188.5	187.5	187.9	1.0	0.6
Educational Services	35.8	35.7	34.6	0.2	1.2
Social Services	60.0	59.7	58.7	0.2	1.3
Engineering & Management Services	68.6	66.3	63.9	2.4	4.8
GOVERNMENT	474.1	478.0	468.2	-3.9	5.9
Federal	65.7	65.9	67.5	-0.1	-1.7
State	138.6	139.1	135.4	-0.6	3.1
State Education	73.7	74.5	71.8	-0.8	1.8
Local	269.8	273.1	265.3	-3.2	4.5
Local Education	141.7	147.0	139.7	-5.3	2.1
Workers in Labor-Management Disputes	2.2	2.1	2.3	0.1	-0.1

1/ Excludes proprietors, self-employed, members of the armed forces, and private household employees. Includes all full- and part-time wage and salary workers receiving pay during the period that includes the 12th of the month. 2/ Excludes workers on strike.

Labor Market And Economic Indicators

Figure 2
Total Nonagricultural Employment Change
Washington State & Nation, Seasonally Adjusted
Source: *Employment Security Department*

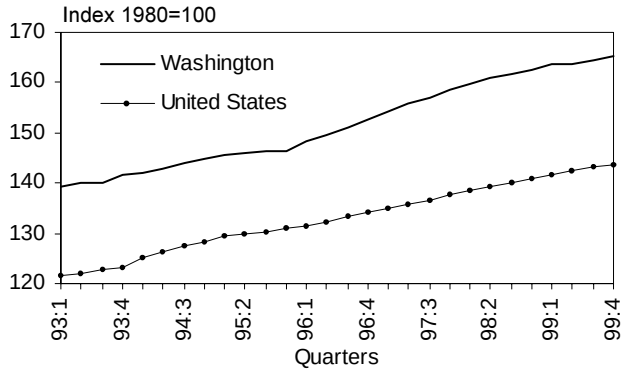


Figure 3
Manufacturing & Nonmanufacturing Employment Change
Washington State, Seasonally Adjusted
Source: *Employment Security Department*

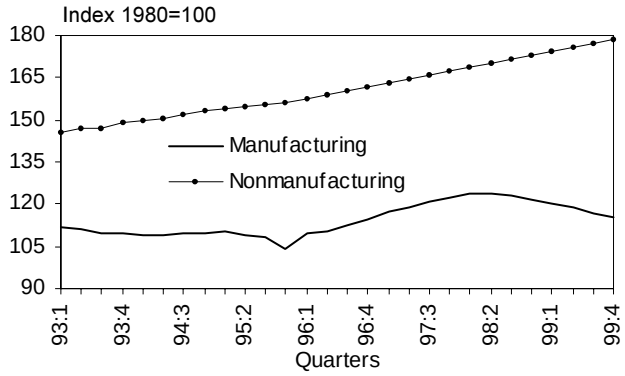


Figure 4
Unemployment Rates
Washington State & Nation, Seasonally Adjusted
Source: *Employment Security Dept., U.S. Dept. of Labor*

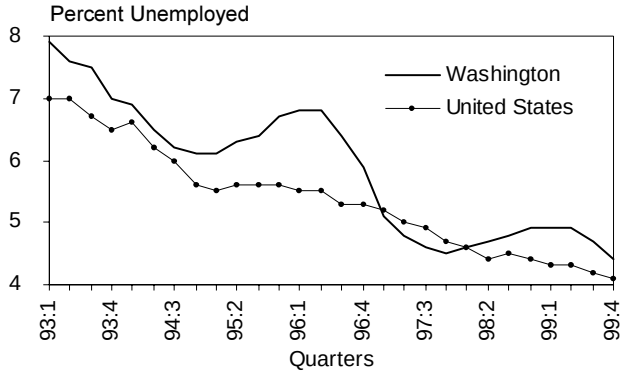


Figure 5
New Housing Units Authorized
Washington State, Seasonally Adjusted
Source: *U.S. Department of Commerce*

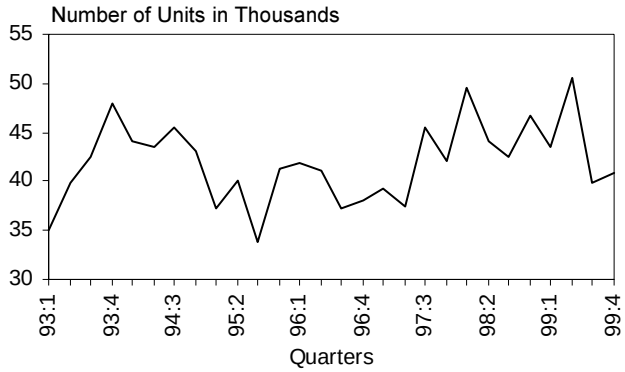


Figure 6
Consumer Price Index
All Urban Customers
Source: *Bureau of Labor Statistics*

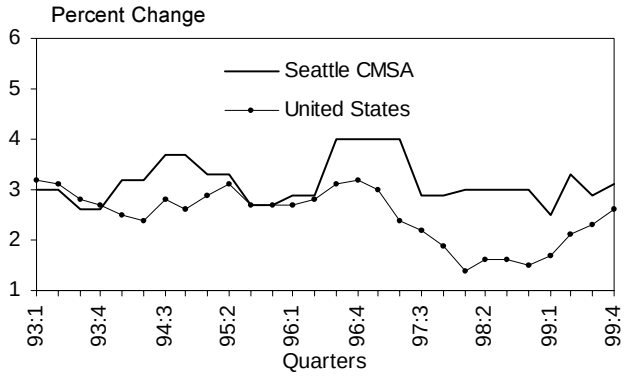
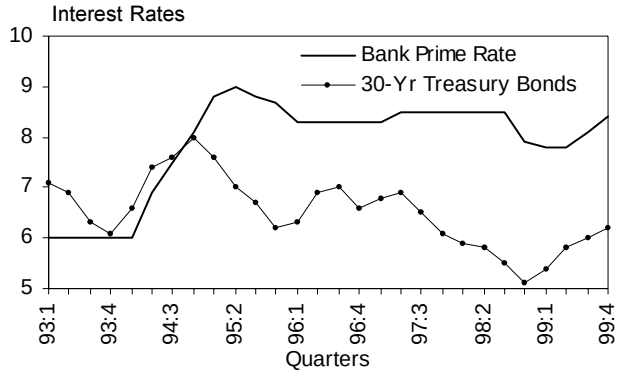


Figure 7
Selected Interest Rates
Percent Annual Rate
Source: *Federal Reserve Board*



construction during most of last year. The over-abundance of vacant hotel rooms has resulted in a paring of excess workers from the sector. As a result, hotel and motel payrolls were down 300 over the quarter and 600 over the year.

INDUSTRY NOTES

Go Ahead on Long-Range 777s

Boeing is set to launch development of two new long-range versions of the big two-engine 777 jetliner—the 777-200X and the 777-300X. This will expand Boeing's offerings in one of the hottest segments of the global market: long distance Trans-Pacific aircraft carrying 300 to 375 passengers. Rival Airbus Industrie currently markets a long-range version of its four-engine A-340. Industry officials indicate that Boeing is moving ahead on the strength of 30 orders valued at roughly $5.5 billion. Orders are expected to build to 50 planes valued at $9 billion. The 777 is Boeing's most technologically advanced new aircraft and longer-range versions are critical to Boeing's growth strategy of serving point-to-point international flights. Deliveries are expected to begin in September 2003.

New Ethanol Plant for Central Washington

Spokane-based Pacific Rim Ethanol hopes to begin construction on a new $122 million ethanol plant in Moses Lake some time in June if financing and final production agreements can be worked out. The plant would distill wheat and barley to produce 40 million gallons of ethanol a year along with some alcohol, gluten, and carbon dioxide. Moses Lake was selected because of its central location in the grain-producing belt of the state and very competitive natural gas and electrical rates. The plant will buy about $50 million worth of wheat and barley a year from local growers. If all goes as planned, the plant could be up and running by the end of next year with an employment base of between 400 and 500 workers.

Then There was One

National Frozen Foods closed its Burlington plant effective December 1st. In addition, the company's frozen pea processing plant in Chehalis will also be phased out and both will be absorbed into its newly expanded Moses Lake facility. Low commodity prices and high production costs were cited as the reasons for the move. The company has national contracts for about 6,000 acres of peas a year from farmers in Skagit, Whatcom, Island, and Snohomish counties valued at $5 million, plus smaller amounts of carrots and corn. A dozen vegetable processing plants were located in Skagit County a generation ago; now only one—Twin City Foods in Stanwood—will be left. National employs about 100 workers with another 250 added seasonally in Skagit County generating $5 million in annual payroll.

Puget Sound Looking Good

President Clinton's proposed 2001 fiscal year budget focuses on some top Puget Sound priorities. Included in the Administration's proposals are $35 million for light rail transport in the Puget Sound corridor, $100 million for new military base construction, and $178 million for a new federal courthouse in downtown Seattle. In addition, roughly $15 billion is targeted for Boeing's defense and space programs and more than $160 million for coastal salmon programs and implementation of the salmon treaty with Canada. Further enhancing salmon recovery, $31 million is earmarked for removing two dams on the Elwah River in the Olympic Peninsula. And $2 billion would go to programs at Hanford including $450 million for the proposed vitrification project to convert nuclear waste into glasslike material.

NATIONAL INDICATORS

Even as the nation's labor markets struggled to meet the supply needs of employers during the fourth quarter of 1999, the economy continued to surge ahead. The economy was able to grow rapidly because of the flexibility inherent in this dynamic system. As a matter of fact, the trade-offs

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exhibited in the national economy are similar to those exhibited by individual firms.

The Economy as the Firm

In a classic profile of the firm, one finds an entity made up of varying quantities of capital, equipment, and labor. The needs of the firm are met by a flow of these basic elements. But if one of these elements becomes scarce—relatively speaking—then the needs of the firm must be met by increasing the flow of the other elements to substitute for the scarce one. Such has happened during this business cycle.

As the labor markets have become increasingly tight, and as labor has become evermore scarce, the increased use of new capital and equipment has occurred. Gross private domestic investment for equipment and software has increased at double-digit rates for the last three calendar years. That is the substitution effect in full swing. It is good news for consumers and workers alike; in the long run, the only real gains made in both wages and standard of living come when there are real advances in productivity. Those advances are made through increased capital investment per worker.

Was the economy only able to grow based on the increase of its labor inputs, GDP would have advanced but 1.5 percent during 1999; that was the annual increase in civilian employment. Instead, the economy grew 4.2 percent for all of 1999, almost triple the growth in employment.

Strong Fourth Quarter Performance

Gross domestic product posted a rip-roaring 7.3 percent annualized growth rate for the fourth quarter of 1999. That was the fastest quarterly growth since the first quarter of 1984. Annualized growth, on the other hand, was a mere one-tenth of a percent lower in 1999 compared to 1998 and matched 1997. Inflation, meanwhile, held relatively flat over the quarter with the GDP implicit price deflator rising 2.3 percent after a 1.7 percent uptick in the previous three months. Excluding food and oil, the "core" inflation rate came in at 1.9 percent.

Durable Goods Orders Swell

Continuing the long string of favorable economic news, orders for durable goods—those manufactured products expected to last three years or more—rose a heady 4.1 percent in December. This followed a 1 percent rise in November and signaled further strong expansion heading into 2000. Orders for transportation equipment registered the biggest boost, jumping 16.2 percent over the month after a 3.8 percent decline in November. Non-defense capital goods—considered a key harbinger of business investment plans—rose a strong 8.6 percent. The backlog of unfilled orders jumped for the sixth consecutive month. Overall durable-goods orders in 1999 came in 7.3 percent higher than in 1998.

Signs of Continued Growth Ahead

The index of leading indicators rose in the last quarter of 1999—a clear sign that the record-breaking U.S. economic expansion will continue into 2000. The composite index—designed to foretell the state of the economy three to six months out—rose 0.4 percent in December and 0.3 percent in November. Nine of the ten indicators rose; one showed no change. This reading concurs with the National Association of Business Economists consensus forecast for 2000 that looks to a relatively healthy 3.8 percent real GDP growth, relatively flat 2.5 percent inflation as measured by the Consumer Price Index, and exceptionally low 4.1 percent average annual unemployment in the year ahead.

■ *Dennis Fusco*
Chief Economist

Low Income and the Working Poor: *A Profile*

LABOR FORCE DEVELOPMENTS

It is estimated that 18.7 percent of the state's population live in households where the income falls below 175 percent of the federal poverty guidelines. Many households have low incomes because the residents have no work force attachment; they may be retired or ill or beset with other circumstances that prevent them from working. But if low income households happen to include wage earners, they are considered among the working poor.

Income distribution has long been an issue of much interest. One of the ways in which this issue has been illustrated in this business cycle has been through the emergence of the working poor. The working poor are those who, despite their work force attachment, have difficulty making ends meet because of low wages and lack of advancement potential or opportunity.

Poverty and Poor

Note that the term used in this analysis is *poor*, not *poverty*, or *impoverished*. While poor and poverty are similarly defined in the *Webster's II,* it is through the federal government that the term poverty has been quantified *(see Figure 8)*. Because of the Federal Poverty guidelines, poverty has become a very proscribed income situation based on family size. More recently, at least in this state's public arena, poor has become a variation of those poverty guidelines wherein persons in families with income less than 175 percent of the federal poverty guidelines have been so categorized. This is not a universally recognized criterion, but it has acquired a large following among Washington State advocacy groups and state agencies.

> poor *adj* 1.a. Having little or no money and few or no possessions. b. *Law*. Dependent on charity or public funds : DESTITUTE. c. Lacking in financial or other resources.
>
> poverty *n*. 1. Lack of the means of providing material needs or comforts. 2. Deficiency in amount : SCANTINESS.

Through the recent State Population Survey (SPS) for 1998, a profile of the working poor, as defined here, is possible. As a result, this article will make some general comparisons of all those falling within this income category; this would include all those working as well as not working. Then this article will contrast those who are working and falling into what will be called the working poor income grouping and the remainder of the working population. These comparisons will encompass employment sectors, industrial activity, occupations, and geography.

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Figure 8
Poverty and Working Poor Family Income Guidelines
Washington State, 1998
Source: *Department of Health and Human Services*

Size of Family Unit	Poverty	175% of Poverty	Full Time Hourly Equivalent
1	$8,050	$14,088	$6.77
2	$10,850	$18,988	$9.13
3	$13,650	$23,888	$11.48
4	$16,450	$28,788	$13.84
5	$19,250	$33,688	$16.20
6	$22,050	$38,588	$18.55
7	$24,850	$43,488	$20.91
8	$27,650	$48,388	$23.26
For each additional family member:	$2,800	$4,900	$2.36

Wages Vs. Household Income

What makes this analysis unusual is that wages are only a tangential subject. And while wages constitute the majority of income, other components can add significantly—interest, dividends, rents, transfer payments and so on. The other element that pushes this beyond just wages is family size. A young, single, new-entrant earning $8.00 per hour might be content with that wage, but to support a family of four on that wage would be decidedly difficult. And as with many families today, two wage earners may be contributing to the household income further distancing this analysis from a descriptive on wages.

How Many

According to the State Population Survey, 18.7 percent of all individuals in Washington State live in households where the income falls below 175 percent of the federal poverty level. Notably, the ratio of individuals in households within this income stratum is not a constant across Washington State *(see Figure 9)*. The eight regions covered in the SPS show distinct differences in concentrations of individuals in these lower income households. It should be no surprise that there are heavier concentrations of this low-income population in the rural nonmetropolitan regions. These areas have the highest unemployment due to their seasonal industry mix and natural resource dependence. The ratio of these lower income households ranges from a high of 35.1 percent in the East Balance of State region to a low of 12.6 percent in King County.

Race

There were dramatically different concentrations of lower income population when stratified by race. Both Whites and Asian and Pacific Islanders had near identical shares of persons in low-income households *(see Figure 10)*. Income differences in these populations are almost

Figure 9
Individuals in Households with Income Below 175% of the Federal Poverty Guidelines by Region
Washington State, 1998
Source: *State Population Survey*

Household Income Thresholds	Total	Below 175% of FPL	Percent
State Total	5,684,971	1,063,755	18.7%
North Puget Sound	344,309	70,628	20.5%
West Balance	428,908	102,558	23.9%
King County	1,664,200	210,496	12.6%
Other Puget Sound Metro	1,677,832	275,071	16.4%
Clark County	328,099	52,026	15.9%
East Balance	439,988	154,634	35.1%
Spokane County	409,928	79,487	19.4%
Tri-Cities	391,707	118,855	30.3%

Figure 10
Lower Income Population by Race
Washington State, 1998
Source: *State Population Survey*

				Distribution	
	Total	Below 175% of FPL	% of Total	Total	Below 175% of FPL
Total	5,684,971	1,063,755	18.7%	100.0%	100.0%
White	5,046,997	884,800	17.5%	88.8%	83.2%
Black	192,601	75,243	39.1%	3.4%	7.1%
American Indian, Aleut or Eskimo	109,750	44,687	40.7%	1.9%	4.2%
Asian or Pacific Islander	335,623	59,025	17.6%	5.9%	5.5%

nonexistent, thanks primarily to occupational and educational parity. On the other end of the scale were Blacks and American Indian, Aleut, or Eskimos: these populations had similarly high ratios of individuals in low-income households. Lower levels of educational attainment and occupational clustering in the low-skilled sectors partially explains this phenomenon.

Hispanic Origin

Most recent estimates show those of Hispanic origin constituting 6.0 percent of Washington State's population. According to the SPS, almost half of all Hispanics in Washington live in households that can be considered low income *(see Figure 11)*. That was the highest of the race/ethnic groups. A few of the reasons for such a high incidence of lower income status include the geographic concentration of the Hispanic population in the agricultural regions of this state, and the seasonal/low-wage nature of the economy in those regions.

Sex

It should come as no surprise that women are more likely to be among the low-income population than men *(see Figure 12)*. Statewide, over 20 percent of females fell into this income grouping compared to 17 percent of males. One significant factor in this difference is that women are more likely to hold part-time jobs than men, thus widening any income comparisons.

At the regional level the higher ratio of women among the lower income population tends to be the norm. But the Tri-Cities area is the notable exception. In Benton and Franklin counties the ratios of lower income for men and women are nearly identical. In this region, the industry mix contains an inordinately large share of agricultural and food processing. These industries are characteristically seasonal, with large swings in employment. Outside of the technology-related occupations at the Hanford site, the labor supply in the Tri-Cities includes a high share of low-skilled and semi-skilled workers. As a result, the wages are typically low.

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Figure 11
Lower Income Population by Hispanic Origin
Washington State, 1998
Source: *State Population Survey*

				Distribution	
	Total	**Below 175% of FPL**	**% of Total**	**Total**	**Below 175% of FPL**
Total	5,684,971	1,063,755	18.7%	100.0%	100.0%
Hispanic	343,225	168,324	49.0%	6.0%	15.8%
Not Hispanic	5,341,746	895,431	16.8%	94.0%	84.2%

Figure 12
Lower Income Population by Sex and Region
Washington State, 1998
Source: *State Population Survey*

	Male			Female		
	Total	**Below 175% of FPL**	**%**	**Total**	**Below 175% of FPL**	**%**
State Total	2,820,676	478,327	17.0%	2,864,295	585,428	20.4%
North Puget Sound	170,590	31,508	18.5%	173,719	39,120	22.5%
West Balance	213,630	46,000	21.5%	215,278	56,558	26.3%
King County	825,820	93,103	11.3%	838,380	117,393	14.0%
Other Puget Sound Metro	835,250	120,173	14.4%	842,582	154,898	18.4%
Clark County	161,209	22,614	14.0%	166,890	29,412	17.6%
East Balance	218,723	71,807	32.8%	221,265	82,827	37.4%
Spokane County	201,356	34,903	17.3%	208,572	44,584	21.4%
Tri-Cities	194,098	58,219	30.0%	197,609	60,636	30.7%

Educational Attainment

Has there ever been a similar survey that didn't confirm the old nostrum "to get ahead, get a good education?" According to the SPS, one out of eight Washingtonians had less than a high school education, but one in three of the lower income population did not have a high school diploma *(see Figure 13)*.

One bit of a surprise is the higher ratio of the low-income group among those having received a doctoral degree than among those with a professional degree. Most likely this is a result of those in academia that have yet to move into tenured or professorship positions. There are also a number of instances where specific subject doctoral candidates are in oversupply.

The preceding sections dealt with the total population. As a result, it includes those not working and therefore the ratios will be higher than the subsequent sections that deal with those active in the labor force. The following sections can be considered a descriptive of the working poor.

Sectors

It has long been recognized that the public sector pays good wages. So why is it that almost one in twelve government workers are considered among the working poor? Again, wages tell us nothing about an individual's family or household situation. So, while a worker may be earning a reasonable wage based on an occupational standard, that may come up short based on their family or household size. Of the major sectors, however, government workers do have the lowest ratio of working poor *(see Figure 14)*.

The second lowest incidence of working poor is found among the self-employed. Only 8.7 percent of the self-employed fell within these incomes.

The highest ratio of working poor is found in those working for a private company. Some 11 percent of those in private companies are considered working poor based on this standard.

Industries

The average ratio of working poor for all industries was 10.0 percent *(see Figure 15)*. This ratio more than tripled for those working in the agriculture, forestry, and fishing industry. Most likely it was those in the agriculture component of that cluster that experienced the lowest wages. Also more than double the overall average were those employed in apparel stores. Apparel stores have long been considered one of the principal

Continued page 14

Figure 13
Lower Income Population by Highest Level of School Completed
Washington State, 1998
Source: *State Population Survey*

				Distribution	
Education level	**Total**	**Below 175% of FPL**	**% of Total**	**Total**	**Below 175% of FPL**
Total	4,223,541	675,926	16.0%	100.0%	100.0%
Less than 9th grade	98,939	53,489	54.1%	2.3%	7.9%
9th grade-12th grade (no diploma)	399,861	108,932	27.2%	9.5%	16.1%
GED	1,126,131	202,860	18.0%	26.7%	30.0%
High school grad (with diploma)	72,622	24,860	34.2%	1.7%	3.7%
Some college, no degree	148,603	21,731	14.6%	3.5%	3.2%
Vocational certificate	826,647	150,105	18.2%	19.6%	22.2%
Associate degree	333,350	52,048	15.6%	7.9%	7.7%
Bachelor's degree	807,239	50,501	6.3%	19.1%	7.5%
Master's degree	292,171	8,494	2.9%	6.9%	1.3%
Professional school degree	61,288	188	0.3%	1.5%	0.0%
Doctorate degree	56,690	2,718	4.8%	1.3%	0.4%

Figure 14
Individuals Main Job, Sector Employed by Working Poor and Income Thresholds
Washington State, 1998
Source: *State Population Survey*

Main Job, Sector	Total	Below 175% of FPL	% of Total	Distribution	
				Total	Below 175% of FPL
Total	2,607,351	262,502	10.1%	100.0%	100.0%
Government	462,195	37,440	8.1%	14.3%	14.3%
Private Company	1,600,882	175,445	11.0%	66.8%	66.8%
Nonprofit Organization	162,949	16,208	9.9%	6.2%	6.2%
Self-employed	324,958	28,243	8.7%	10.8%	10.8%
Working in the Family business	56,367	5,166	9.2%	2.0%	2.0%

Figure 15
Working Poor by Industry
Washington State, 1998
Source: *State Population Survey*

Industry	Total	Below 175% of FPL	% of Total	Distribution	
				Total	Below 175% of FPL
Total	2,096,644	209,780	10.0%	100.0%	100.0%
Agriculture, Forestry, Fishing	43,234	13,058	30.2%	2.1%	6.2%
Lumber and Wood	48,720	6,189	12.7%	2.3%	3.0%
Metals	17,652	1,668	9.4%	0.8%	0.8%
Industrial Machinery	20,719	2,206	10.6%	1.0%	1.1%
Electronic	10,934	1,718	15.7%	0.5%	0.8%
Aircraft & Parts	102,886	666	0.6%	4.9%	0.3%
Other Transportation	29,093	3,077	10.6%	1.4%	1.5%
Food Products	29,047	5,831	20.1%	1.4%	2.8%
Paper Products	30,623	2,529	8.3%	1.5%	1.2%
Printing & Publishing	13,372	1,020	7.6%	0.6%	0.5%
Other Manufacturing	32,766	3,077	9.4%	1.6%	1.5%
Construction & Mining	165,196	15,539	9.4%	7.9%	7.4%
Transportation	85,029	5,614	6.6%	4.1%	2.7%
Communication	32,631	2,515	7.7%	1.6%	1.2%
Utilities	19,960	1,121	5.6%	1.0%	0.5%
Wholesale Trade	71,271	6,676	9.4%	3.4%	3.2%
General Merchandising	10,268	1,441	14.0%	0.5%	0.7%
Food Stores	44,636	5,692	12.8%	2.1%	2.7%
Apparel	13,528	3,747	27.7%	0.6%	1.8%
Eating & Drinking	124,965	29,874	23.9%	6.0%	14.2%
Other Retail	93,643	9,304	9.9%	4.5%	4.4%
Finance	62,069	1,363	2.2%	3.0%	0.6%
Insurance	33,753	1,111	3.3%	1.6%	0.5%
Real Estate	50,506	3,367	6.7%	2.4%	1.6%
Hotels & Lodging	20,582	2,809	13.6%	1.0%	1.3%
Personal Services	34,048	2,772	8.1%	1.6%	1.3%
Computer Data Software	68,282	2,342	3.4%	3.3%	1.1%
Other Business Services	44,518	5,892	13.2%	2.1%	2.8%
Amusement & Recreation	36,732	3,461	9.4%	1.8%	1.6%
Health Care	242,015	19,454	8.0%	11.5%	9.3%
Legal Services	25,693	452	1.8%	1.2%	0.2%
Educational Services	184,655	11,105	6.0%	8.8%	5.3%
Social Services	81,900	13,917	17.0%	3.9%	6.6%
Engineering Services	71,543	2,611	3.6%	3.4%	1.2%
Other Services	100,175	16,562	16.5%	4.8%	7.9%

entry portals into the work force for new-entrants and re-entrants, and the wages have been low. In addition, the use of part-time workers in the apparel industry is quite common.

Among the other industry sectors with high ratios of working poor were eating and drinking places, food products manufacturing, and social services.

The lowest ratios of working poor were found in the higher paying industries. Even though there were some quite specific industries scattered throughout the mostly general list within the survey, no industry category escaped the inclusion of some working poor. With all the recent press about the wages of its machinists and engineers, even the aircraft and parts sector includes workers who fall within the criteria for working poor. Despite the fact that larger law firms are now paying first-year associates $100,000 and over, even legal services is included. And if that didn't beat all, computer data processing and software also are found among these industries. For temporary workers without the wondrous stock options, software may just be another job. Other computer data processing and software workers may be employed at small

Figure 16
Working Poor by Occupation
Washington State, 1998
Source: *State Population Survey*

Occupation	Total	Below 175% of FPL	% of Total	Distribution	
				Total	Below 175% of FPL
Total	2,467,797	240,854	9.8%	100.0%	100.0%
Managerial & Administrative	168,394	4,040	2.4%	6.8%	1.7%
Management Support	113,226	2,739	2.4%	4.6%	1.1%
Engineer	88,441	1,027	1.2%	3.6%	0.4%
Natural Scientists	9,829	423	4.3%	0.4%	0.2%
Computer Occupations	90,093	4,986	5.5%	3.7%	2.1%
Social Scientists	47,736	4,670	9.8%	1.9%	1.9%
Law Occupations	40,463	508	1.3%	1.6%	0.2%
Teachers/Librarians	173,546	9,511	5.5%	7.0%	3.9%
Health Practitioners	145,311	6,058	4.2%	5.9%	2.5%
Writers, etc.	40,083	1,913	4.8%	1.6%	0.8%
Other Professional	46,173	2,095	4.5%	1.9%	0.9%
Sales	225,338	29,470	13.1%	9.1%	12.2%
Clerical	317,971	26,526	8.3%	12.9%	11.0%
Services Supervisor	28,187	2,658	9.4%	1.1%	1.1%
Protective Services	31,156	2,756	8.8%	1.3%	1.1%
Food Preparation & Services	109,850	27,568	25.1%	4.5%	11.4%
Health Services	41,186	13,763	33.4%	1.7%	5.7%
Cleaning	50,644	10,661	21.1%	2.1%	4.4%
Personal Services	48,882	10,216	20.9%	2.0%	4.2%
Other Services	34,154	5,603	16.4%	1.4%	2.3%
Agriculture, Forestry, Fishing Supervisor	16,828	1,963	11.7%	0.7%	0.8%
Timber Worker	11,940	400	3.4%	0.5%	0.2%
Other Ag, Forestry, Fishing Services	47,082	13,572	28.8%	1.9%	5.6%
Production Craft Maint. Supervisor	53,528	2,636	4.9%	2.2%	1.1%
Inspector	22,511	3,287	14.6%	0.9%	1.4%
Mechanic	111,432	12,300	11.0%	4.5%	5.1%
Construction	81,708	9,093	11.1%	3.3%	3.8%
Precision Production	28,527	3,194	11.2%	1.2%	1.3%
Machine Setters	36,011	3,522	9.8%	1.5%	1.5%
Hand Working	38,153	4,532	11.9%	1.5%	1.9%
Plant and System	3,994	659	16.5%	0.2%	0.3%
Transportation	104,207	8,351	8.0%	4.2%	3.5%
Helper, Laborer	61,213	10,154	16.6%	2.5%	4.2%

companies or start-ups with only fleeting hope of writing some break-through code and being on board for the next big IPO.

Occupations

One of the sectors experiencing significant disruption during the last business cycle was health care. The demand for ever-greater levels of care from an increasingly large, aging population has helped re-mix the services being offered. Within this mix of services are chore services; these are services performed in the home by health care workers. Many times these are very basic services that can be provided by low-skilled workers. It is probably for this reason that health care occupations had the highest ratio of workers falling under the working poor income level *(see Figure 16)*.

Other occupations that had high proportions of workers falling in the working poor income group included: agriculture, food preparation, cleaning, personal service, and laborer/helper.

But even the higher skilled occupations included some of the working poor. Some 1.2 percent of engineers fall within the working poor criteria, as do 1.3 percent of those working in law occupations, and in increasing amounts among management support, managerial and administrative, natural scientists, and health practitioners to name just a few.

Admittedly these occupational categories are general in nature. Were a more detailed examination possible, it would likely result in many occupations with no working poor. But surveys being as they are, the more general occupational groupings are necessary to expedite results.

Conclusion

The working poor. The phrase conjures an almost unending collage of mental images—rural Appalachia, migrant farm workers, tenement houses, sweat shops, hollow-eyed spouseless immigrants, shabby shoeless children gripping their mother's threadbare dress as she balances an infant on one hip and prepares a meager meal. That may be a bit over-dramatic, but no doubt the point has been made. Words can be powerful. Poor is one of those words. It would be a real yawner to profile the populace in *the first quintile of income distribution*. More exact, certainly… but considerably less enticing. But to label someone poor is to invoke an almost universal feeling of sympathy.

The profile of the working poor is rather familiar: young, female, high school graduate or less, employed in services, manufacturing, or retail trade, and working in a low-skilled health care, food preparation, agriculture, or cleaning occupations.

Possibly the only surprise of this analysis is that no industry, occupation, or educational group was spared inclusion in this definition of the working poor. Admittedly the level of detail available through the SPS is rather general, and the income criterion was well above the poverty income standard generally used in analysis of this type. Nevertheless, because of the ever-increasing pace of economic change, and the accompanying dislocations that result, the working poor are a continuing concern for public officials and policy makers in that they represent a population just one missed paycheck away from the need for public services.

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Measuring Economic Similarity Using Earnings by Industry

REGIONAL DEVELOPMENTS

Did you know that in comparisons of industry earnings by state, Washington State is the second most similar to the national average. These were the findings in a recent study comparing 1998 data by the U.S. Department of Commerce, Bureau of Economic Analysis. OK… for those who really want to know, California was the most similar.

One of the fairly regular questions regional economic observers ask themselves is, "How similar is our state to the nation?" This can be in regards to the unemployment rate, industry concentration, or income. A complementary question is, "Has our state become more or less similar over time?"

Underlying these questions is the concept of economic convergence. Convergence theory states that economic differences between regions diminish over time, and these economic regions—the states in this instance—become more like the aggregation of those regions—the nation.

Several well-used statistical methods are based on comparing the state or region with the national norm—location quotients and various shift-share analyses, to name a few. In this recent analysis, the U.S. Department of the Census, Bureau of Economic Analysis attempted to answer the question of similarity for each state in the nation using the distribution industry earnings as its base *(see Figure 17)*. Industry earnings are a major component of Gross Domestic Product (GDP) and Gross State Product (GSP). As a result, industry earnings are a very comprehensive and comparable data series.

Is Larger More Similar?

As stated in the introduction, California is the state that most resembles the nation in terms of industry earnings *(see Figure 18 on page 18)*. One might think that this similarity is purely a function of size—the larger the state, the closer the degrees of similarity. While that may be true in a very general sense, it is not a hard and fast rule. Were sizes a factor, then all the largest states would be the most similar to the national norm. Yet New York, the third largest state in the nation in terms of population, was one of the least similar states. And Michigan, the eighth largest state, was also in the lowest quintile of similarity.

Ranking the states by population shows that the top ten states had an average similarity index of 83.7. Yet when the states are ranked by similarity, the top ten states have an average similarity index of 89.7. So while size is important, other elements, such as industry mix, can have a significant bearing on similarity.

Is Smaller Less Similar?

The size/similarity corollary would posit that the smaller the state, the lower the level of similarity. Again, while generally accurate, this is also not a rule chiseled in stone. The smallest state in the nation in terms of population was Wyoming. It was also the least similar state to the national earnings by industry average. The District of Columbia was the least similar geographic entity, but since it is not a state… what the hey! But Vermont, with a population of less than 600,000 had a greater index of similarity than did Ohio which was almost 25-times the size.

Again, ranking the states by population, the smallest states, including the District of Columbia, had an average similarity index of 61.1. And again when ranking the states by similarity, the ten least similar states had an average similarity index of just 51.4.

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Figure 17
Industry Shares of Earnings
by State and Nation, 1998
Source: *Bureau of Economic Analysis*

	Farms	Agricultural services, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and Public Utilities	Wholesale Trade	Retail Trade	Finance, Insurance, and Real Estate	Services	Government
United States	0.8	0.7	0.9	5.9	17.4	6.8	6.4	9.1	8.9	28.8	14.4
Alabama	1.8	0.6	1.0	6.4	21.1	6.5	5.8	9.6	5.9	23.6	17.7
Alaska	0.1	1.7	7.6	7.5	4.6	10.7	3.1	9.7	4.1	21.9	28.9
Arizona	0.9	1.0	0.9	7.5	13.9	5.8	6.5	10.8	9.1	29.2	14.5
Arkansas	4.2	0.8	0.5	5.9	22.3	8.2	5.2	11.4	5.0	21.6	14.8
California	1.2	1.1	0.3	5.4	15.7	6.2	6.2	8.9	8.7	32.3	14.0
Colorado	1.0	0.7	1.8	7.9	11.5	9.6	6.0	9.4	8.4	29.7	14.0
Connecticut	0.2	0.5	0.1	4.7	20.2	5.3	6.5	7.8	13.8	30.3	10.6
Delaware	0.8	0.4	0.0	6.8	25.7	4.4	3.8	8.2	14.2	23.7	11.8
District of Columbia	0.0	0.8	0.0	1.2	2.8	3.3	0.9	2.5	6.2	43.2	39.1
Florida	0.9	1.0	0.2	6.1	8.6	6.6	6.7	11.4	9.6	34.0	14.8
Georgia	1.5	0.6	0.3	5.9	15.8	9.6	8.9	9.2	7.6	26.3	14.3
Hawaii	0.8	0.7	0.1	6.2	3.6	8.3	3.7	12.0	8.2	31.1	25.3
Idaho	3.5	1.4	1.0	8.5	17.5	6.9	5.6	10.9	5.2	23.4	16.1
Illinois	0.4	0.5	0.3	5.5	19.1	7.3	7.2	8.0	10.3	29.4	11.9
Indiana	0.7	0.5	0.4	6.8	31.2	6.0	5.7	9.2	6.0	21.8	11.7
Iowa	4.3	0.8	0.2	6.4	21.4	6.2	6.9	9.4	7.7	22.3	14.5
Kansas	2.7	0.7	1.0	6.2	18.8	7.7	7.4	9.9	6.1	23.9	15.7
Kentucky	2.4	0.7	2.3	6.0	21.6	7.7	5.5	10.2	5.1	22.7	15.7
Louisiana	0.6	0.5	5.3	8.1	13.6	7.8	5.7	9.4	5.4	26.9	16.7
Maine	0.5	1.1	0.0	6.8	17.9	6.0	5.3	12.0	6.8	27.7	16.0
Maryland	0.4	0.6	0.1	6.9	9.0	5.7	5.6	9.4	8.3	33.3	20.8
Massachusetts	0.1	0.5	0.1	4.9	16.8	5.4	6.8	8.4	10.5	35.5	11.0
Michigan	0.2	0.5	0.2	5.6	31.3	5.0	6.5	8.4	5.6	24.3	12.3
Minnesota	0.8	0.5	0.5	6.1	20.8	6.4	7.9	9.2	8.8	26.7	12.2
Mississippi	2.4	0.7	0.9	6.6	21.5	6.5	4.9	10.2	4.6	23.0	18.7
Missouri	0.3	0.5	0.3	6.6	19.0	8.4	6.9	9.5	7.8	27.2	13.5
Montana	0.8	0.9	2.4	8.3	8.1	8.0	5.3	12.7	5.9	28.0	19.4
Nebraska	5.5	1.1	0.2	6.2	14.0	9.0	6.6	9.0	7.4	25.5	15.5
Nevada	0.3	0.7	2.2	11.8	4.7	5.7	4.4	9.8	7.4	40.3	12.7
New Hampshire	0.2	0.6	0.1	6.3	22.5	6.0	7.1	11.7	7.2	27.7	10.7
New Jersey	0.1	0.4	0.1	4.4	15.2	8.5	9.0	7.8	9.6	31.1	13.7
New Mexico	1.5	0.7	3.3	7.1	7.8	6.0	4.2	11.4	5.2	28.3	24.5
New York	0.1	0.3	0.1	3.7	11.9	5.9	5.8	6.7	20.1	31.8	13.6
North Carolina	1.9	0.6	0.2	6.9	23.1	6.1	6.1	9.6	6.8	22.9	15.7
North Dakota	6.0	0.8	2.0	7.0	8.2	8.4	8.2	10.0	5.7	25.5	18.2
Ohio	0.5	0.5	0.4	5.7	26.2	5.7	6.8	9.4	6.8	25.3	12.7
Oklahoma	0.7	0.5	4.7	5.1	16.2	8.3	5.2	10.0	5.4	25.6	18.2
Oregon	1.0	0.9	0.1	7.4	19.2	6.3	7.4	10.9	6.9	25.8	14.1
Pennsylvania	0.4	0.5	0.7	5.7	20.4	6.9	5.8	9.2	8.0	30.4	12.1
Rhode Island	0.2	0.7	0.1	5.0	18.3	5.2	5.0	9.3	8.2	32.2	15.8
South Carolina	0.6	0.7	0.1	7.3	23.6	5.4	5.2	11.1	5.7	22.4	17.8
South Dakota	7.4	1.2	0.8	6.4	14.2	6.4	6.1	10.6	6.9	24.8	15.0
Tennessee	0.2	0.5	0.3	6.4	21.0	7.7	6.6	10.7	6.6	27.5	12.5
Texas	0.7	0.6	4.3	6.4	16.2	9.1	6.9	8.9	7.2	26.4	13.3
Utah	0.7	0.4	1.3	8.1	14.3	7.4	5.9	10.7	7.8	27.5	16.0
Vermont	1.7	0.7	0.3	7.3	20.2	5.8	4.9	10.4	5.6	28.4	14.7
Virginia	0.3	0.5	0.5	6.1	12.7	7.0	5.4	8.6	7.3	30.7	20.9
Washington	1.1	1.0	0.2	6.4	16.4	7.0	6.1	9.3	6.4	30.3	15.7
West Virginia	0.0	0.4	6.5	6.2	15.5	7.8	4.9	10.0	4.2	25.7	18.8
Wisconsin	0.5	0.6	0.2	6.5	27.8	5.9	6.3	9.0	6.9	23.4	13.0
Wyoming	–.4	0.8	15.8	8.6	5.6	8.9	3.6	10.4	4.7	19.4	22.4

Does Growth = More Similar?

One of the intriguing trends in this system of measurement is the degree to which regions became more or less similar. The principal of economic convergence would be fully realized were all states moving towards greater degrees of similarity… but that is not proved by these data. Nine states and the District of Columbia were actually less similar to the nation in 1998 than they were in 1958 *(see Figure 19)*. As noted by G. Andrew Bernat, Jr. and Eric S. Repice, authors of the BEA study,

> "In contrast to the view that convergence in industrial composition inevitably results from economic growth and integration, certain conditions may lead economies to specialize in particular industries, and this specialization results in a divergence in industrial compositions over time. Positive geographic externalities, especially in the presence of increasing returns to scale, can lead to the clustering of economic activity. This effect is self-reinforcing because the competitive advantage gained by local establishments increases as the number of establishments in the area increases. Therefore, once a cluster is established, additional economic growth will result in further clustering and specialization and thus in divergence in industrial composition."

That can explain the divergence of New York. While New York State has a population of over 18 million, so does the metropolitan region that encompasses New York City (many metro areas cross state borders.) As New York City evolved into a national and international center of media, finance, and law, so too did its growing divergence from the national norm.

In comparison, Washington State increased its similarity with the nation by 5.8 points during the 1958-1998 period. The state whose index advanced the most was South Dakota with a jump of 41.2 points. Indices for Alaska and North Dakota both advanced by over 30 points.

All in All

The industrial composition of earnings across states varied substantially in 1998, but less

Figure 18
Index of Similarity
by State, 1998
Source: *Bureau of Economic Analysis*

	1998 Similarity Index	Population
California	91.5	32,682,794
Washington	91.3	5,687,832
Arizona	91.0	4,667,277
Pennsylvania	90.7	12,002,329
Missouri	90.3	5,437,562
Illinois	90.0	12,069,774
Minnesota	89.3	4,726,411
Rhode Island	88.2	987,704
Georgia	87.9	7,636,522
Maine	87.2	1,247,554
Utah	87.0	2,100,562
Oregon	86.8	3,282,055
Texas	86.4	19,712,389
Tennessee	86.3	5,432,679
Vermont	86.3	590,579
Colorado	85.8	3,968,967
New Jersey	85.4	8,095,542
Kansas	84.6	2,638,667
Virginia	82.5	6,789,225
Massachusetts	82.4	6,144,407
Nebraska	82.3	1,660,772
New Hampshire	82.3	1,185,823
Iowa	81.9	2,861,025
Alabama	81.6	4,351,037
Connecticut	81.5	3,272,563
Ohio	80.8	11,237,752
North Carolina	80.7	7,545,828
Florida	80.5	14,908,230
Idaho	80.3	1,230,923
South Dakota	80.3	730,789
Oklahoma	79.9	3,339,478
Louisiana	79.6	4,362,758
Kentucky	78.3	3,934,310
Wisconsin	78.0	5,222,124
Mississippi	76.1	2,751,335
Maryland	75.7	5,130,072
West Virginia	75.4	1,811,688
Arkansas	74.7	2,538,202
South Carolina	73.8	3,839,578
Michigan	72.0	9,820,231
Montana	71.8	879,533
New York	71.6	18,159,175
Delaware	70.7	744,066
Indiana	70.3	5,907,617
North Dakota	68.5	637,808
New Mexico	66.3	1,733,535
Hawaii	64.1	1,190,472
Nevada	60.9	1,743,772
Alaska	42.9	615,205
Wyoming	41.6	480,045
District of Columbia	21.6	521,426

Figure 19
Change in Similarity Index
by State, 1958-1998
Source: *Bureau of Economic Analysis*

	Change in the similarity index
South Dakota	41.2
Alaska	34.8
North Dakota	30.7
Arizona	26.1
Nebraska	20.8
Nevada	19.9
New Mexico	19.9
Montana	19.6
Iowa	18.8
Idaho	17.2
Utah	17.1
Oklahoma	16.0
Florida	15.8
Kansas	14.0
Colorado	13.3
Hawaii	12.7
Connecticut	12.6
Rhode Island	12.4
Pennsylvania	11.0
Virginia	10.3
Texas	10.2
Minnesota	10.0
West Virginia	9.6
Washington	5.8
Ohio	5.3
New Jersey	5.2
Arkansas	4.4
Louisiana	4.3
Missouri	4.2
California	4.1
Illinois	3.8
Georgia	3.4
Maine	2.9
Mississippi	2.8
New Hampshire	1.9
Wisconsin	1.3
Michigan	1.2
Kentucky	0.9
Massachusetts	0.6
Vermont	0.4
Delaware	0.2
District of Columbia	–1.1
Alabama	–2.2
Oregon	–2.4
North Carolina	–2.7
Wyoming	–3.1
Indiana	–4.8
South Carolina	–5.1
Tennessee	–6.5
Maryland	–7.1
New York	–7.7

than in 1958. The states with the most variation in 1998 had small populations, relatively little manufacturing, and in some cases, relatively large government and large resource-based industries.

The convergence in state industrial compositions in 1958-98 is primarily attributable to substantial growth in services and to declines in farming and manufacturing.

In the states that converged the most, the manufacturing share of state earnings tended to rise toward its U.S. average and the farm and government shares tended to fall toward their U.S. averages.

Continued Convergence?

In a nutshell economic convergence results in the parts looking more like the whole. What this means is that the natural or comparative advantage of regions tend to diminish over time. And as regional economies grow beyond self-sufficiency towards greater levels of trade with national and international partners, national and international forces will shape the regional economies similarly. It is likely that convergence is proportionate to the pace of economic growth; not to say that convergence would disappear in a slow-growth or no-growth economy, only that the process would be more protracted.

In the past, primitive transportation and communication technologies were elemental in regional economic specialization. As those technologies improved, the need for such specialization waned. Modern transportation eased the movement of all goods, whether across the state, nation, or overseas. Modern communication helped facilitate the progress of services, so much so that geography has become less and less a consideration in economic characteristics of regions.

Within this dynamic environment divergence can still occur because of new industrial innovations and the resultant clustering of those industries. Nevertheless, with greater advances in communication, the prospect of more diminished economic differences are likely. This current "information" economy, be it totally new or simply the next logical stage of economic evolu-

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tion, has immense potential to bring people even closer. The ease at which this communication technology is dispersed will play a major role in the continued convergence of regional and national economies.

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Senior Economic Analyst

With excerpts from the February 2000 SURVEY OF CURRENT BUSINESS, Industrial Composition of State Earnings in 1958-98 By G. Andrew Bernat, Jr. and Eric S. Repice found at the Bureau of Economic Analysis web-site at www.bea.doc.gov

The Aging of Farm Operators and Participation of Beginning Producers in Farming

AGRICULTURAL DEVELOPMENTS

The following article, written by Robert Hoppe of the U.S. Department of Agriculture, Economic Research Service, has significant implications for Washington because of this state's pronounced dependence on agriculture. During this business cycle, the state and national economy have experienced growing labor supply constraints. This situation has been felt in all corners of the economy, including agriculture. But the agricultural dynamic is being felt at the top end among farm operators as well. This trend means that the outlook for the number of farms and the competitive environment within agriculture are diminished. Mr. Hoppe explains this and some of the programs the USDA is sponsoring to try and counter these trends.

The average age of farmers is 54.3 years and the proportion of farmers age 55 and over has risen from 37 percent in 1954 to 61 percent in 1997 *(see Figure 20)*. Farmers are older, on average, than others in the civilian labor force for several reasons. As self-employed workers, farmers can continue to farm—often at a reduced scale—after wage and salary earners have retired. The average life span in the United States has increased, meaning self-employed elderly farmers can farm to an advanced age. The mechanization of agriculture also has helped older farmers continue to farm by substituting machinery for some physical labor.

While a larger share of older operators has long characterized U.S. agriculture, the future of farming in America depends on continued entry by new farm operators. The share of farmers less

Figure 20
Farm Operators by Age and Civilian Labor Force by Selected Age Categories
1910-1997
Source: *U.S. Department of Agriculture*

		Percent Distribution by Age of Operator						Average	Labor Force Distribution	
	Number of Farms	Under 25	25-34	35-44	45-54	55-64	65 and over	Operator Age	55-64	65 and over
1997	1,911,859	1.1%	3.7%	19.2%	12.2%	34.6%	26.0%	54.3	9.3%	2.4%
1992	1,925,300	1.4%	9.3%	19.8%	22.3%	22.3%	24.8%	53.3	9.3%	2.8%
1987	2,087,759	1.7%	11.6%	19.7%	21.8%	23.7%	21.4%	52.0	9.9%	2.6%
1982	2,240,976	2.8%	13.1%	19.8%	22.6%	23.9%	17.8%	50.5	10.9%	2.7%
1978	2,257,775	2.9%	12.6%	19.2%	24.3%	24.5%	16.4%	50.3	11.5%	3.0%
1974	2,314,013	2.3%	10.5%	17.6%	25.3%	25.8%	18.5%	51.7	12.3%	3.2%
1969	2,730,250	1.9%	10.0%	19.1%	26.5%	25.8%	16.6%	51.2	13.8%	4.0%
1964	3,157,857	1.7%	9.8%	20.7%	27.0%	23.5%	17.4%	51.3	13.9%	4.2%
1959	3,710,503	1.7%	11.0%	22.0%	26.7%	21.9%	16.8%	50.5	13.5%	4.6%
1954	4,783,021	1.9%	13.2%	23.4%	24.6%	20.3%	16.6%	49.6	13.0%	5.0%
1950	5,285,525	3.2%	15.7%	23.5%	22.9%	19.8%	14.8%	48.3	12.3%	4.9%
1945	5,858,889	2.5%	14.7%	22.8%	24.7%	20.2%	15.0%	48.7	na	4.5%
1940	6,102,417	4.0%	16.3%	21.4%	24.5%	19.7%	14.2%	48.0	na	4.0%
1930	6,288,648	6.1%	17.3%	23.9%	24.0%	17.5%	11.1%	na	na	4.3%
1920	6,448,343	6.0%	20.9%	24.9%	23.3%	15.6%	9.2%	na	na	3.9%
1910	6,361,502	6.6%	22.3%	24.8%	22.6%	14.9%	8.7%	na	na	na

than 35 years old has declined from 15 percent in 1954 to 8 percent in 1997.

Federal and state legislation and programs have recently been enacted favoring beginning farmers (those with less than 10 years experience) and young farmers. Yet, beyond entry, new farmers are faced with the same competitive challenges as their more established counterparts in gaining access to expanding global markets and remaining viable in a market economy. All farmers need management savvy, as well as access to diverse types of capital resources.

Understanding the potential constraints on entry into farming is important when formulating agricultural credit and commerce policies. Accurate statistics on those in farming and those considering farming are also critical to determining needs for policy formation.

Background

The agricultural census reveals that the average age of U.S. farmers has slowly risen, with relatively fewer younger people than in the past *(see Figure 21)*. The number of entrants into farming has fallen over time. The traditional pool of new entrants into farming—white males in their twenties growing up on family farms—is shrinking, from about 700,000 in 1990 to perhaps 365,000 today. This shrinkage is attributable both to the decline in farm numbers and to the fact that farm families have fewer children than in the past.

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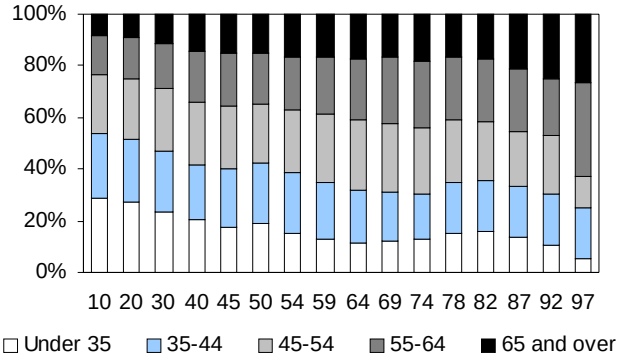
Figure 21
Farm Operators by Age Categories
1910-1997
Source: *USDA, ERS*



Maybe Not So Bad

Some of the observed trends in aging of the farm population, however, may be overstated because the Census of Agriculture counts only one operator per farm, usually the eldest member of a farming family. Excluding adult children who operate the family farm thus biases the calculation of average age upward and understates the number of people in farming. This is confirmed by labor force participation data from the Department of Labor that shows more young farmers than does the Census. These data provide a less dire picture of the rising age of farmers; nevertheless, they do show a steady decline in the number of young farmers during the 1990s.

Family Origins

The typical path to farming is entry through the family farm business. One less frequently observed alternative path is through what is known as the "agricultural ladder," in which a hired farm worker becomes a tenant and ultimately owner-operator. The fairly recent increase in the number of some groups of minority farmers may suggest that the agricultural ladder is making a comeback.

Rational Decisions

A person's decision to enter farming is conditioned by the relative attractiveness of farm versus non-farm earning opportunities and by the ease of entry into farming as a business. When the non-farm economy is robust, as it has been for the past decade, young people may opt for the higher, more stable incomes available off the farm. On the other hand, boom times in the non-farm economy may actually encourage entry into farming. Like their non-farm counterparts, the majority of U.S. farm households have two earners and off-farm income can supplement and buffer swings in income from the farm operation. When off-farm-earning opportunities are promising, a household may decide it can better absorb the risks of having one earner engaged in farming.

Capital Critical

Access to financial capital and to specialized farming knowledge are also factors that figure prominently in the decision to farm. Experience suggests that it takes an average of $500,000 in assets to fully support a farm household. A new farmer can use his own capital, have it provided by others, or borrow it. Young (under 40) commercial farmers whose primary occupation is farming can be divided into those who entered with capital, usually inherited from family, and those who did not. These two groups differ sharply with respect to financial structure, performance, and sources of credit. Young commercial farmers with more than $150,000 in net worth operate about 5 percent (100,000) of all U.S. farms and are less likely to display financial stress than those with fewer resources. These farmers are also more likely to use commercial rather than subsidized credit. In contrast, young, low-resource farmers, who operate about 2 percent of all U.S. farms (40,000), must either borrow more or find other sources of equity. There appear to be considerably fewer young, low-resource farmers than young established farmers, suggesting the importance of the capital requirement as a barrier to entry into farming.

Tax Relief

Federal and state policies also influence the entry of both established and low-resource farmers. The Taxpayer Relief Act of 1997, for example, helped farmers whose capital comes from their family by substantially increasing the size of farms or other small businesses that can be transferred tax-free. The act also made important changes to special valuation and installment payment provisions. These changes will make it easier to transfer the family farm across generations by reducing the likelihood that the farm or some of its assets will need to be sold to pay estate taxes. Such estate tax provisions may also encourage older farmers to stay in business longer, which has the effect of raising the age of the farm population even as the objective of passing the farm to the next generation is being met.

Beginners Buoyed

The Agricultural Credit Improvement Act of 1992 (1992 Act) created a beginning farmer down payment farm ownership loan program and required USDA's Farm Service Agency (FSA) to target a percentage of its direct and guaranteed farm operating and farm ownership loans to beginning farmers and ranchers. Between fiscal years 1994 and 1999, FSA provided loans totaling $2.5 billion to more than 34,000 beginning farmers and ranchers. USDA has entered into memoranda of understanding with 16 states to provide joint financing to beginning farmers and ranchers under a Federal-state partnership, as directed by the 1992 Act.

Many state governments operate beginning farmer assistance programs, though these programs are usually limited in size. The state programs are often funded using tax-exempt "aggie bonds" with proceeds used to back private farm loans or contract sales. Because the interest payments to the bondholders are exempt from Federal income taxes, interest rates charged to the borrower can be lower than commercial bank rates.

While access to capital is important, a new farmer must also know how to farm and how to manage a farm business in the current regulatory environment. Those who grew up in the farm business can obtain this specialized knowledge from their family experience as well as from outside education. For those not from farms, this expertise must be acquired through hired work on farms or education. Technical assistance through Federal or state extension programs may also be targeted to beginning farmers.

What's Ahead?

The net result of entry and exit into the farm sector over decades has been fewer farmers. Increases in labor productivity, however, have been rapid enough to maintain farm output even in the face of fairly strong declines in the number of farmers. As a result, changes in the age composition of the farm population or in its overall size have not and will not likely have adverse implications for the Nation's food security, especially in the near future. However, these shifts may raise concerns about the structure of farming and the concentration of agricultural production.

The Secretary of Agriculture is currently considering the recommendations of the Advisory Committee on Beginning Farmers and Ranchers. The Committee was mandated by the 1992 Act, to advise the Secretary on ways to administer the program of coordinated financial assistance (Federal and state programs) to beginning farmers and ranchers, encourage state participation, maximize the number of new farming and ranching opportunities through the partnership, and on other methods to create new farming and ranching opportunities.

The Committee submitted six recommendations to the Secretary:

1. Provide adequate funding for Farm Service Agency (FSA) loans;
2. Support changes in tax law concerning state "Aggie Bonds" programs;
3. Conduct a comprehensive assessment of FSA's beginning farmer and rancher programs;
4. Promote Federal/state beginning farmer and rancher partnerships;
5. Assure that adequately trained staff are available to process loans; and
6. Support funding of the Small Farmer Outreach Training and Technical Assistance (Section 2501) program.

■ *For more information*
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Related Web-sites

U.S. Department of Agriculture:
www.usda.gov
USDA Economic Research Service:
www.econ.ag.gov

Related Articles

How many minority farmers are there, and what are their characteristics? in the Farm Structure Briefing Room on *www.econ.ag.gov*

The Taxpayer Relief Act of 1997: Provisions for Farmers and Rural Communities, an ERS report published in 1998

Loans for Beginning Farmers and Ranchers, an FSA fact sheet, published in August 1999

Concentration and Structural Change in U.S. Agriculture, in the Issues Center on *www.econ.ag.gov*

Glickman Names Members of Beginning Farmers Advisory Committee, a February 22, 1999, USDA news release

Farewell to Bob Baker

Robert William Baker, editor of the quarterly *LMI Review* for the past 10 years, has moved on to another job in state government. This is his last publication for the Employment Security Department. Bob was a gifted writer and analyst with a deep sense of commitment to others. He viewed his work pretty much as a crusade to get the word out on labor market and economic issues to all who would benefit. During his tenure, the *LMI Review* received national recognition as one of the finest labor market publications of its kind in the nation. We know you—our readers—share this sentiment and all of us at LMEA wish Bob well on his new adventure.

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