A Quarterly Review of Washington State Labor Market Information

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Fourth Quarter 1997 May 1998 Issue

Washington State Employment Security Department
Carver Gayton, *Commissioner*

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.

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Technology, Humanity, and Employment Security

Commissioner
Carver Gayton

COMMENTARY

Technology advances are not just happening to speed up information processing, but in all communications. These advances bring us a positive and a negative side. The positive is obvious—more information can be shared more quickly, and the time to perform tasks is minimized.

Labor Market Information is truly at our fingertips today when you tap into the Internet. Economic indicators and labor force supply and demand data, are instantly available. Job seekers' resumes can be browsed with ease. With this kind of technology, filing unemployment insurance taxes electronically certainly will make a distasteful process less burdensome in the future.

Yet the downside must also be considered. The fast pace of information processing and communications is considered an added value in and of itself. Is faster necessarily better? Not necessarily so. Technology is a tool, not the end.

The old saying, garbage in, garbage out, is as applicable today as in the past. It can be argued that bad information processed at 300 megahertz is worse than bad information processed at 30 megahertz. The danger is not that the information deteriorates at a high processing speed, but that the information will quickly receive wider distribution.

Employment Security is proud of its award-winning Labor Market Information homepage *(www.wa.gov/esd/lmea)*. The Internet is an extraordinarily valuable tool for the sharing of information. The accuracy of that information is even more important today than any time in the past.

The Employment Security Department is using new technology to move to call centers. Unemployed workers will need only a phone to file an unemployment insurance claim. The required visit to the local Job Service Center to file a claim will be a distant memory.

In our quest to make these processes faster, easier and more convenient, we must retain a high quality of communication. While call centers are more convenient and accessible, removal of face-to-face contact must not result in a real or perceived distancing of this agency from its customers, particularly for those workers experiencing dislocation—the most severe kind of joblessness.

We must not forget the human qualities in the race to technology. I can assure you the staff at Employment Security will continue to be sensitive to those they serve. Caring staff will be at the heart of Call Centers and One-Stop Career Center Systems. ■

Reaching the Peak

Fourth Quarter 1997 *QUARTERLY ANALYSIS*

Employment growth during the fourth quarter of 1997 eased up from the torrid pace set in the preceding five quarters. From the third quarter of 1996 through the third quarter of 1997, the annualized rate of job growth was above 4.0 percent. Job growth in the last quarter of 1997 was a more tepid 1.1 percent. Despite the easing in the fourth quarter, 1997 turned in the strongest economic performance in eight years. Employment growth averaged on the order of 98,000 net new jobs between calendar year 1996 and calendar year 1997. That tally was the highest since 1989 at the peak of the 1984-90 upcycle. The pace was running nearly double the national average and well above the average of the previous five years. Unemployment in the final quarter of 1997 came in at 4.4 percent seasonally adjusted, the lowest level in 31 years; more recent data for the first quarter of 1998 show the lowest March unemployment rate on record, a seasonally adjusted 4.1 percent. Labor shortages are cropping up at both the top and the bottom ends of the skill range. And statewide personal income growth in the first half ranked third highest in the nation.

Manufacturing and services—specifically aircraft production and business services including computer data processing and software—have been essentially driving the economy during this business cycle. These two industries combined constitute about 10 percent of the state's total employment base but accounted for over a third of the total job growth for 1997. Average wages in both cases stand at the high end of the range—$55,000 a year in aircraft and parts and $101,000 in computer data processing and software in 1996—generating substantial secondary impacts in the economy as that income makes its way through the typical spending stream. Construction, trade, and services, in particular, have been prime beneficiaries.

The outlook for 1998 assumes some slowing. The good news is that a slower job pace should relieve some of the tightness in the labor markets, particularly in the Seattle area, and, in turn, accompanying wage pressure. Boeing's announcement of a likely 12,000-worker reduction companywide in the second half signals an end to the high-profile buildup of workers over the past two years in the aircraft and parts industry which added 30,000 to area payrolls. Laid-off workers should face very strong demand given that the Seattle area monthly unemployment rate is presently hovering around 3 percent. And with a flat first half and staged reductions in the second half, Washington's aircraft and parts industry is expected to still average 109,000 workers in 1998—up 4 percent from 1997.

LABOR FORCE AND UNEMPLOYMENT

Fall: The Season and the Trend

Labor markets tightened progressively throughout 1997. Statewide unemployment dropped sharply in the first quarter, drifted lower through the spring and summer, and then plunged abruptly again in the final quarter of 1997. The state's jobless rate edged down from 6.1 percent in the fourth quarter of 1996 to 5.4 percent in the first quarter of 1997, 4.9 percent in the second quarter, 4.7 in the third, and 4.5 percent during the fall.

On top of these exceptional trends, the jobless rate in Washington finally fell below the national average during the third quarter of 1997. While this is an unusual happenstance, it is becoming frequent enough that most eyebrows have shown nary a quiver. In the past, this state's jobless rate has fallen below the national average, the last time being in 1990. It was then that the national economy was moving into recession and the state was still moving forward. Last year was distinct from this earlier period in that most recently both the state and national economies were expanding in unison.

The unemployment rate in Washington has historically maintained a distinct gap above the

national average owing to seasonal and structural differences, but that gap is narrowing.

As of the fourth quarter of 1997, Washington State's jobless rate stood at 4.5 percent, two-tenths of a percentage point below the national average. Just as Washington's unemployment rate ended the year lower that when it started, so has the nation. In the first quarter of 1997, the nation's unemployment stood at 5.3 percent of the work force. Clearly, the strength of the economy tightened labor markets across a broad front.

QUARTERLY INDUSTRY DEVELOPMENTS

Was it El Niño or the Asian Crisis?

Washington's total nonfarm wage and salary employment increased by 7,000 workers in the last quarter of 1997. That is a marked slowdown from the 25,000 average gain for each of the preceding four quarters. No particular sector was solely responsible for this slowing. Industry employment trends appeared to moderate across the board, at least at the major division level.

Growth in manufacturing employment continued to out-pace the overall average. Total manufacturing jobs grew at a 2.0 percent annual rate in the fourth quarter. There were wide-ranging differences between durable and non-durable goods however; job gains in the durable goods sectors averaged a 4.4 percent annual rate while nondurable goods jobs declined at a 3.6 percent rate.

Durable goods job growth has been driven by the significant gains in aerospace, electronic and electrical equipment, primary metals, and fabricated metals. Other plusses were in stone, clay, and glass; instruments; and miscellaneous manufacturing.

Nondurable goods employment changes were decidedly negative. Of all the published sectors, only chemicals and petroleum were positive. The remaining sectors—food, textiles, paper, and printing—experienced job losses.

Could this be somehow related to the Asian financial crisis? Recent analysis from the Oregon Employment Department may provide some clarity on this possibility. According to the analysts in Oregon, about 2.1 percent of the nation's GDP is related to exports to the East Asian region. Some 10.0 percent of the exports from Washington head to East Asia, as do 8.6 percent of Alaskan exports, and 4.4 percent of Oregon exports.

While the higher level of exports to East Asia would seem to place Washington at greater risk, the reality of the situation is a bit different. What is critical to the element of risk is the mix of exports. Washington exports aircraft, machinery and equipment, electronic and electrical equipment, and various natural resource and agricultural products. Some of these industries are risky—lumber and wood products in particular—but aircraft provides a buffer of sorts. Apparently losing place in the long queue of aircraft orders is unpleasant enough that cancellations are rare—orders are more likely to be postponed. But this merely re-orders the queue, and disruptions in production and employment are negligible.

Oregon analysts feel that their state's dependence on high technology exports to East Asia places them at greater risk. High technology has been the recent economic and employment driver in Oregon. This, they feel, makes the state more vulnerable to reduced Asian demand for high tech exports and to cancellation or postponement of expansion by Asian firms.

When Down is Not Down

There was some unusual employment patterns disrupting the seasonally adjusted trends in the fourth quarter. Government employment was atypically weak, but that was only because it was uncharacteristically strong in the third quarter. This was most evident in local education where summertime employment did not experience its usual drop-off.

Construction employment was essentially unchanged between the third and fourth quarters. Building activity had been strong throughout 1997. It started the year with a bang and continued banging away into the fourth quarter. The net result was that construction employment appeared flat across the calendar year when in reality it started at an elevated level and remained there.

Continued page 4

When Up is Not Up

Employment patterns in air transportation services were also a bit muddled for both economic and non-economic reasons. The UPS strike depressed employment in the third quarter and resulted in a large increase in the fourth. On top of that, the reclassification of a major package delivery firm into air transportation further obscured real growth trends.

ANNUAL DEVELOPMENTS

Are the Bulls Getting Winded?

While there were a substantial number of industries reporting weak employment over the quarter, over-the-year changes were decidedly more positive. Total nonagricultural jobs increased by 79,100—a still healthy 3.2 percent annual pace.

Leading the divisional pack in over-the-year change was manufacturing. Aircraft and electronics drove the 6.7 percent change; both grew at double-digit rates *(see Figure 1)*. Other manufacturing sectors recording above average growth were stone, clay, and glass; primary metals; fabricated metals; industrial machinery; instruments; preserved fruits and vegetables; and miscellaneous manufacturing.

Carrying Coals to Newcastle

Not everything was upbeat in manufacturing. Over-the-year employment changes in several important sectors were negative. Logging jobs were off by 1.1 percent and parts of the lumber and wood products sector are beset with an over-supply problem. The export of lumber from Washington has been quite weak because of the slumbering Japanese housing market and the availability of cheaper logs from elsewhere. As a result, U.S. and Canadian lumber production last year was the highest since 1989. Such is the situation that lumber prices are down over the year. While profitability for some lumber concerns has been a problem, new homebuyers have benefited.

Another manufacturing sector that is weakening on the employment side is computer and office equipment. The introduction of faster and cheaper computers has come at break-neck speed. So far the decline in prices of computers and office equipment has been a result of the big drop in component costs and the ensuing competition. But, there comes a point where the decline in prices overwhelms the profit margins and shakeouts occur.

Trade Even Steven

The last quarter of the year has traditionally been *make-or-break* time for the retail trade sector. This may no longer be the norm, however. During this business cycle, the build-up in retail trade has been much less pronounced in the final quarter of the year. It may well be that the retail sector is much more pragmatic this go-round. Employment seems to carry further into the first quarter of the year thanks to the expectation of post-holiday sales and the postponement of purchases beforehand. So while third quarter to fourth quarter job gains were a paltry 0.1 percent, over the year gains were a more reasonable 1.5 percent.

The Business of America is Business

If one wanted to amend the famous statement by Calvin Coolidge, it might read, "The business of America is *business services*." With over-the-year job growth at 12.0 percent, business services represented 64 percent of over-the-year job gains in the services division. Just as remarkable, business services accounted for over 20 percent of new nonfarm jobs generated in the labor market overall. The drivers have been temporary help services and computer data processing and software.

In contrast to business services, there were some less than vibrant facets in the services sector. Employment in hotels and lodging places was down 1.5 percent over the year, and personal services jobs also went south at about half that rate.

Continued page 7

Figure 1
Nonagricultural Wage and Salary Workers
Washington State, Seasonally Adjusted, In Thousands, Benchmarked: March 1997
Source: *Employment Security, Revenue Forecast Council, & Office of Financial Management*

				Numeric Change	
	4th Qtr 1997	3rd Qtr 1997	4th Qtr 1996	3rd Qtr 1997 to 4th Qtr 1997	4th Qtr 1996 to 4th Qtr 1997
TOTAL NONAGRICULTURAL EMPLOYMENT	2,534.3	2,527.2	2,455.2	7.0	79.1
MANUFACTURING	375.9	374.0	352.3	1.9	23.6
Durable Goods	268.2	265.3	243.1	2.9	25.0
Lumber & Wood Products	35.4	35.5	35.2	-0.1	0.2
Logging	7.8	7.7	7.9	0.1	-0.1
Sawmills & Plywood	23.9	24.1	23.8	-0.2	0.2
Furniture & Fixtures	4.0	4.1	3.8	-0.1	0.1
Stone, Clay & Glass	9.7	9.6	9.2	0.1	0.6
Primary Metals	12.0	11.7	11.4	0.3	0.6
Aluminum	7.7	7.8	7.5	0.0	0.2
Fabricated Metals	14.5	14.2	13.5	0.3	1.0
Industrial Machinery & Equipment	26.9	27.0	25.5	-0.1	1.5
Computer & Office Equipment	8.2	8.4	8.0	-0.2	0.2
Electronic & Other Electrical Equipment	17.6	17.1	15.6	0.4	2.0
Transportation Equipment	124.9	123.0	106.9	1.9	18.0
Aircraft & Parts	110.2	108.3	93.2	1.9	17.0
Instruments & Related	14.5	14.4	13.9	0.1	0.6
Miscellaneous Manufacturing	8.7	8.6	8.1	0.1	0.6
Nondurable Goods	107.7	108.7	109.1	-1.0	-1.4
Food & Kindred Products	40.9	41.3	42.0	-0.5	-1.1
Preserved Fruits & Vegetables	13.8	13.9	13.3	-0.1	0.5
Textiles, Apparel & Leather	9.7	10.0	9.7	-0.3	0.0
Paper & Allied Products	16.1	16.2	16.6	-0.1	-0.5
Printing & Publishing	24.1	24.4	24.2	-0.2	0.0
Chemicals & Allied Products	5.6	5.6	5.5	0.1	0.1
Petroleum, Coal, Plastics	11.2	11.2	11.2	0.0	0.1
MINING & QUARRYING	3.5	3.5	3.4	-0.1	0.0
CONSTRUCTION	135.5	135.6	130.4	0.0	5.2
General Building Contractors	38.2	38.2	36.7	0.0	1.5
Heavy Construction, ex. Buildings	18.7	18.6	19.1	0.1	-0.4
Special Trade Contractors	78.7	78.8	74.6	-0.1	4.1
TRANSPORTATION, COMMUNICATION & UTILITIES	133.4	131.6	132.3	1.9	1.2
Transportation	89.4	87.5	88.2	1.9	1.1
Trucking & Warehousing	30.9	31.0	30.3	-0.1	0.6
Water Transportation	9.3	9.2	9.5	0.1	-0.2
Transportation by Air	24.7	22.8	25.1	1.9	-0.4
Communications	28.6	28.5	28.0	0.1	0.6
Electric, Gas & Sanitary Services	15.5	15.6	16.1	-0.1	-0.6
WHOLESALE & RETAIL TRADE	610.1	608.1	598.6	2.1	11.6
Wholesale Trade	152.9	151.0	148.0	1.9	5.0
Retail Trade	457.2	457.1	450.6	0.1	6.6
General Merchandise	45.3	45.5	46.4	-0.1	-1.0
Food Stores	71.7	71.6	71.1	0.1	0.6
Eating & Drinking	166.7	167.3	165.5	-0.7	1.2
FINANCE, INSURANCE & REAL ESTATE	129.7	128.8	125.0	0.9	4.7
Finance	55.9	55.5	53.8	0.3	2.0
Insurance & Real Estate	73.8	73.2	71.2	0.6	2.6
SERVICES	685.9	681.8	660.8	4.1	25.1
Hotels & Lodging	27.7	28.4	28.1	-0.7	-0.4
Personal Services	22.2	22.3	22.4	-0.1	-0.2
Business Services	149.5	145.8	133.4	3.7	16.1
Health Services	179.0	178.4	177.6	0.6	1.4
Educational Services	33.8	33.2	31.4	0.6	2.4
Social Services	57.2	57.7	55.8	-0.5	1.4
Engineering & Management Services	58.3	57.4	56.5	0.9	1.8
GOVERNMENT	460.2	463.9	452.4	-3.7	7.8
Federal	68.4	68.1	68.0	0.4	0.5
State	132.8	133.7	129.7	-1.0	3.0
State Education	71.0	72.2	68.4	-1.2	2.6
Local	259.0	262.2	254.7	-3.2	4.3
Local Education	136.0	140.5	135.0	-4.4	1.0
Workers in Labor-Management Disputes	0.0	1.2	0.0	-1.2	0.0

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.

Labor Market And Economic Indicators

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

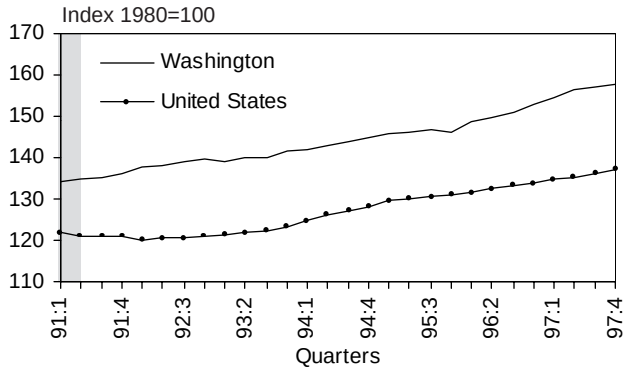


Figure 3
Manufacturing & Nonmanufacturing Employment Change
Washington State, Seasonally Adjusted
Source: *Employment Security Department*

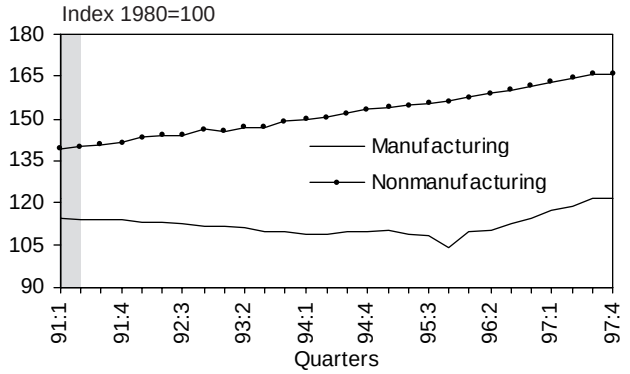


Figure 4
Unemployment Rates
Washington State & Nation, Seasonally Adjusted
Source: *Employment Security Dept., U.S. Dept. of Labor*

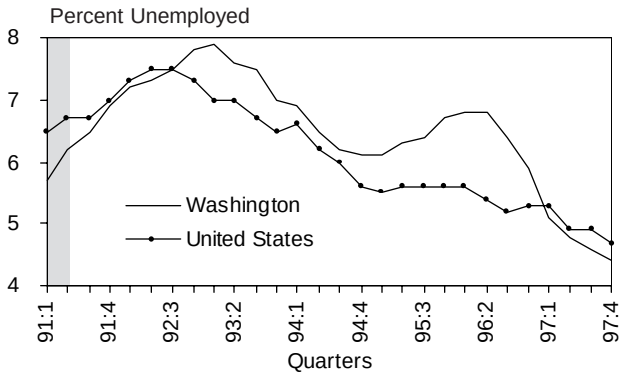


Figure 5
New Housing Units Authorized
Washington State, Seasonally Adjusted
Source: *U.S. Department of Commerce*

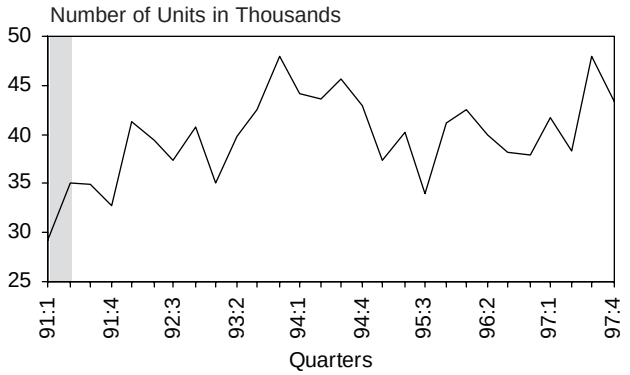


Figure 6
Consumer Price Index
All Urban Customers
Source: *Bureau of Labor Statistics*

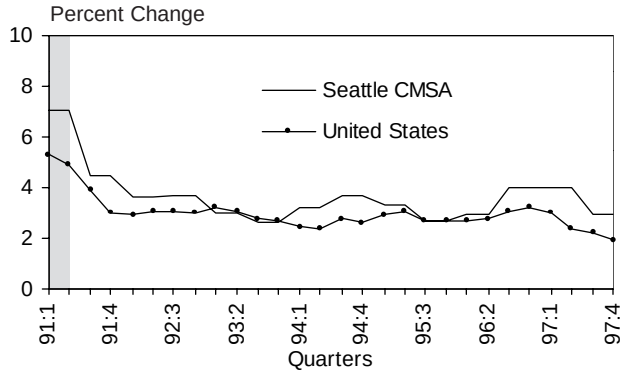
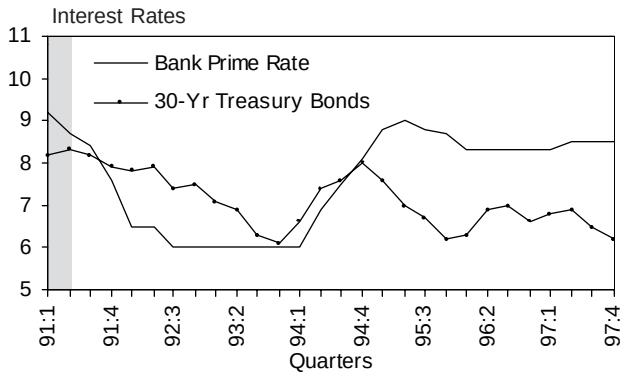


Figure 7
Selected Interest Rates
Percent Annual Rate
Source: *Federal Reserve Board*



NOTE: Shaded areas represent national economic recessions as designated by the National Bureau of Economic Research

Government

For most of this business cycle education has been the center of job growth in state and local government. Between the fourth quarter of 1996 and the fourth quarter of 1997 that was only half true. In state government that trend held—state education employment grew at a 3.8 percent pace compared to 2.3 percent for state government jobs overall. So during that period, state education services captured almost 86 percent of new state government jobs.

On the other hand, local education employment lagged the growth of total local government jobs. In the four quarter period ending with the fourth quarter of 1997, local education jobs grew a modest 0.7 percent, a full percentage point less than the rate of local government job growth. This appears to be a bit of a turnabout in trend, but it may be more a statistical quirk. Third quarter local employment data may have been overstated by a change in reporting weight. If employment didn't decline by a typical amount in the summer months, the seasonal adjustment would overstate employment. And then in the fourth quarter, employment would not have rebounded in a typical pattern resulting in an understated figure following seasonal adjustment.

NATIONAL INDICATORS

Fourth Quarter GDP Underscores a Strong Economy

Revised fourth quarter gross domestic product showed an economy ending 1997 on a tremendous uptick. Inflation-adjusted real growth was revised down slightly from 4.3 percent to 3.9 percent but the annual average for the year was unchanged at 3.8 percent—the best performance in nine years. Most of the revision reflected higher estimates for imports over the period, which are expected to continue into 1998. Estimated inventory accumulations also heightened in the final three months. Collaterally, the implicit price deflator—which measures the relative movement of prices for all goods and services purchased by U.S. consumers—rose 1.4 percent in the October-December period and 1.7 percent for the year—the lowest since 1964.

Output Per Worker Jumped Sharply in 1997

Worker productivity in the U.S. economy rose at a 1.7 percent annual clip in 1997 following a 1.9 percent jump in 1996. The two-year upsurge marks a sharp acceleration from the 0.8 percent annual gains registered from 1990 through 1995 and the 1.1 percent annual average since the early 1970s. Manufacturing, in particular, made solid advances—notching a 4.4 percent increase last year and 3.7 percent a year earlier. Structural improvements in the economy are now coming to the fore. And businesses are using the new efficiencies to offset wage hikes. Unit labor costs rose only 2.1 percent in 1997 and were flat when adjusted for inflation.

Industrial Production Swells Without Bottlenecks

The nation's industrial production index surged at a seasonally adjusted 0.5 percent in December after climbing 0.8 percent a month before. Output for the year rose 5.0 percent following a 3.5 percent increase in 1996 and at year-end was running 5.9 percent above the pace of the previous December. Manufacturing capacity utilization rates rose 5.3 percent to 83.4 percent in December—the highest since September 1995. However, the level still remains below the 85 percent flash point that the Federal Reserve considers a harbinger of inflation. Financial troubles in Southeast Asia are expected to chip away at the U.S. industrial base in 1998. Still, the U.S. economy remains extremely strong heading into the year.

Wholesale Prices on a Downdraft

Prices paid by wholesalers fell 1.2 percent in 1997—the sharpest drop since the oil collapse in 1986. And excluding food and energy, the core producer price index inched up just 0.1 percent

Continued page 8

last year making it the most inflation-free year since the Labor Department began collecting data in 1974. Many analysts expect the good price performance on the wholesale front to continue in 1998 given a strong dollar and weakening Asian currencies that will depress the price of imports. Prices of raw industrial materials have dropped 10 percent since fall.

■ *Dennis Fusco*
Chief Economist

Dislocated Workers

FEATURE ARTICLE

The Challenges and Complexities of Worker Dislocation

Who or what constitutes a *dislocated* worker, and how many are there? There are perhaps as many responses to this question as there are dislocated workers. Defining dislocation alone makes this an exceptionally complex and challenging issue. Ironically, this issue has surfaced in the midst of a largely booming state economy within which adverse impacts from dislocation would be thought to be minimal at best. Some of the irony dissipates, however, as regional disparities continue to be a factor (i.e., the *Two Washingtons* phenomenon).

There is uncertainty over the number of dislocated workers in Washington. Uncertainty over how many workers are *currently* dislocated—estimates range from 32,000 to over 60,000—and over how many workers may be dislocated in the future. This study attempts to answer both questions through a review of four distinct methodologies. While the information may not answer all the questions, it should provide a relatively solid foundation or guide of currently available data.

Who or What is a Dislocated Worker?

In programs administered by the Washington State Employment Security Department, dislocated workers must:

- have been terminated or received notice of termination
- be eligible for or has exhausted Unemployment Insurance (UI) benefits
- be unlikely to return to work in his/her industry or occupation due to diminished demand for his/her skills

Two other programs using this definition are the federal Job Training Partnership Act (JTPA) and Trade Adjustment Assistance (TAA). The JTPA definition includes individuals who were part of a permanent plant closure (whether or not they have employment opportunities with other firms within the same industry or occupation) as well as some self-employed individuals. The federal Trade Adjustment Assistance (TAA) targets workers who lose their jobs or experienced wage reductions due to foreign import competition so long as they have worked for at least 26 weeks of the prior year in trade affected employment. A more recent expansion of the TAA program was the NAFTA Trade Adjustment Assistance program, which was specific to jobs impacted by trade with Canada and Mexico.

The definition of worker dislocation in the report on *Natural Resource Harvest Variation in Rural Communities* applies to unemployed individuals who worked in declining industries that are located in counties with unemployment rates significantly higher than the state average. The latter qualification closely resembles the definition of *economically distressed* counties, which requires a three-year average annual unemployment rate that is 20 percent or higher than the state average.

FOUR APPROACHES TO ESTIMATING WORKER DISLOCATION

There are many other definitions of worker dislocation. The following describes four approaches or methodologies to estimating the number of dislocated workers in Washington. They are among the most statistically rigorous and quantifiable approaches available to date.

Current Population Survey

Displaced Workers. The *Current Population Survey (CPS)* is a monthly, national survey of 50,000 households conducted by the Bureau of the Census, U.S. Department of Commerce that provides comprehensive data on the nation's labor force. Since 1984, the CPS has collected displaced worker data for the U.S. Department of Labor.

Displaced workers are defined as those 20 years of age and older who lost their jobs over the prior three calendar years because their plant or company closed or moved, there was insufficient work for them to do, or their position or shift was abolished. Those individuals must have worked for their employer for at least three years. The actual question asked is:

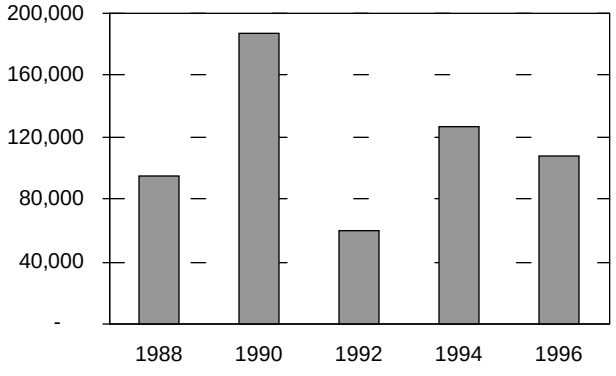
"During the last 3 calendar years, that is, (for example) January 1993 through December 1995, did you lose a job or leave one because: your plant or company closed or moved, your position or shift was abolished, insufficient work, or another similar reason?"

Individuals who answer "yes" are counted as displaced. Those individuals are then asked whether they were employed, unemployed, or not in the labor force in the week prior to the survey. Displaced workers can be and often are re-employed by the time they participate in the survey.

The 1996 CPS estimated the number of displaced workers in Washington at 108,000 (*see Figure 8*). This means that from January 1993 to December 1995, 108,000 workers in Washington lost jobs they had held for at least three years. That was considerably lower than the 127,000 workers displaced between January 1991 and December 1993 identified in the 1994 survey and the 187,000 workers displaced between January 1987 and December 1989 identified in the 1990 survey.

Continued page 10

Figure 8
Displaced Workers
Washington State, Selected Years
Source: *Bureau of Labor Statistics*



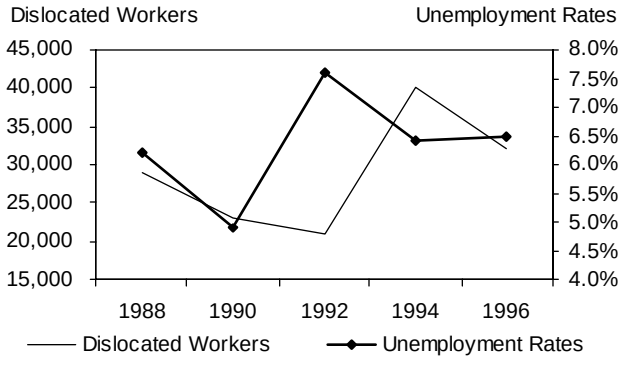
[This discussion of *displaced* workers is necessary to lay the groundwork for the subsequent discussion of *dislocated* workers. The two terms are often used interchangeably. However, for the purposes of this analysis, they are viewed as separate and distinct.]

Dislocated Workers. As noted, the CPS estimate of displaced workers counted those who were employed, unemployed, and not in the labor force. This may be overly inclusive. By counting only those who were unemployed and not in the labor force, there were 32,000 dislocated workers in Washington in 1996 (*see Figure 9*). Though down significantly from 40,000 in 1994, a period during which a number of industries in Washington were restructuring, it was nevertheless higher than it had been in the late 1980s and early 1990s. The present period (which will be captured in the CPS-derived February 1998 estimate of dislocated workers over the period from January 1995 through December 1997) is expected to represent a cyclical low in terms of dislocation.

Local Declining Industries and Occupations

The number of dislocated workers in Washington was estimated using a combination of Unemployment Insurance beneficiary data, Occupational Employment Statistics data, and Covered Employment and Wage data. These data helped identify industries and occupations that had experienced declining demand at the *county* level and subsequently identify unemployed individuals who had been separated from those particular industries and occupations.

Figure 9
Dislocated Workers and Unemployment Rates
Washington State, Selected Years
Source: *Employment Security & Bureau of Labor Statistics*



This method assumes that dislocated workers are unlikely to return to their previous industry or occupation or that they have limited employment opportunities in the same or similar work in the area in which they previously worked. The emphasis in this approach is on *locally observed* industry and occupational decline; the same industries and occupations may not similarly be in decline statewide or in other areas. This raises the issue of a dislocated worker's option to relocate to an area of the state where his or her industry or occupation is not in decline.

Study Results. Some 77,700 of the 245,300 UI beneficiaries in 1995 (or nearly one-third) were identified as having been separated from either a declining industry or occupation. These 77,700 were broadly categorized as dislocated workers.

Of the 77,700 UI beneficiaries, industry and occupational analysis revealed that:

- 43,400 were in declining industries, but their occupation was still growing
- 27,100 were in growing industries, but their occupation was declining
- 7,200 were in both declining industries and declining occupations

The 43,400 might actually have had fair to good employment opportunities because they could conceivably be re-employed in the same occupation but a different industry. On somewhat the same note, 27,100 individuals might have employment opportunities because employment in their industry was increasing despite the fact that employment in their occupation was declining. That nevertheless left nearly 7,200 in the much more serious situation of having both their industry and occupation in decline.

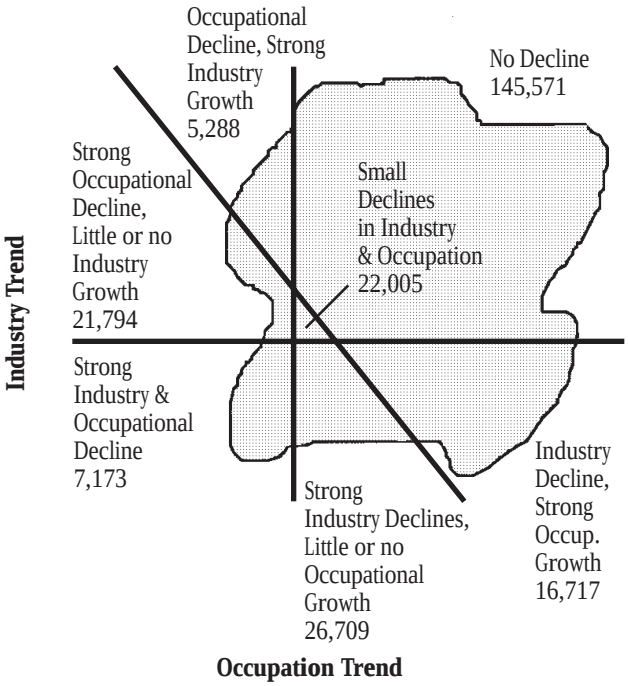
Further analysis of the 77,700 UI beneficiaries measuring the degree of change in both

industrial and occupational employment trends (*see Figure 10*) revealed:

- 26,700 were in industries with strong decline, and occupations with little or no growth
- 21,800 were in occupations with strong decline, and industries with little or no growth
- 16,700 were in declining industries, and occupations with strong growth
- 5,300 were in declining occupations, and industries with strong growth
- 7,200 were in industries and occupations, both of which were in strong decline.

This detail strongly suggests that not all of the 77,700 workers labeled as dislocated are equally vulnerable to prolonged dislocation. The 7,200 separated from industries and occupations that were both in strong decline are certainly dislocated. Beyond that, those with strong occupational and industry decline and little or no growth on their respective flip sides may also suffer significant periods of unemployment. When summed, this more narrowly defined group totals 55,700.

Figure 10
Classification of UI Beneficiaries
Calendar Year 1995
Source: *Employment Security Department*



This figure is a schematic which only approximates the actual data. The density of recipients within the shaded area varies dramatically, with the highest density near the center.

Demographic Characteristics. At the statewide level, dislocated workers were very much like other unemployed workers, save the fact that they may face more difficulties in finding re-employment in their past industry or occupation (*see Figure 11*). This is viewed as both a positive and a negative. On the upside, there does not appear to be evidence of bias in comparing dislocated workers against other unemployed workers. On the downside, because there is little or no distinction between dislocated workers and other unemployed workers, the former would appear to be difficult to target. Still, there *are* statistical differences between dislocated workers and all other unemployed workers that become more pronounced at the local level. The key point is that worker dislocation is ultimately a local event.

The profile data show that roughly two-thirds of dislocated workers in Washington were male, their average age was close to 38 years, and their average educational attainment was about 12 years (high school). This was virtually identical to the profile for other unemployed workers. As for UI benefits, dislocated workers averaged $225 in weekly benefits and $3,561 in total UI payments over a duration of close to 16 weeks with an exhaustion rate of about 34 percent. This was

Continued page 12

Figure 11
Demographic Characteristics of Dislocated Workers
vs. Other Unemployed Workers, Washington, CY 1995
Source: *Employment Security Department*

	Dislocated Workers	**Oth. Unemp Workers**
Gender (% Female)	35.7%	35.3%
Education (Years)	11.92	11.96
Age (Years)	37.92	37.72
WBA ($)	$224.94	$218.66
Total UI ($)	$3,560.74	$3,412.99
Duration (Weeks)	15.87	15.65
Exhaustion (Rate)	34.0%	32.8%

only slightly higher than the averages for other unemployed workers.

Though there is scant difference between dislocated workers and all other unemployed workers, differences in demographic characteristics do emerge when dislocated workers are split into those from declining industries, declining occupations, or both (*see Figure 12*). Those from declining occupations are more likely to be female and have more education.

In addition, those from both declining industries and declining occupations are more likely to have higher weekly benefit amounts and total UI benefits, as well as longer duration of unemployment and a greater likelihood of exhausting.

Worker Profiling/ Re-employment System

As a result of the Unemployment Compensation Amendments of 1993, states are *required* to profile and track through re-employment services all new claimants for regular unemployment compensation. One purpose of worker profiling is to identify those individuals who are likely to both exhaust their benefits and be in need of re-employment services. A second purpose is to identify those displaced permanently from their previous jobs who are likely to experience difficulties finding re-employment and who could benefit from job assistance to make a successful transition to new employment.

The Worker Profiling and Re-employment Services System uses a number of variables or indicators to generate an estimate of dislocated workers. Those variables or indicators include:

- Work history/tenure (hours from base year of employment)
- Years of education
- Estimated duration of unemployment (22 week minimum)
- Annual average unemployment rate in county of residence
- Industry and occupational employment trends
- Individual's Dictionary of Occupational Titles (DOT) code
- Regional/geographic identifier

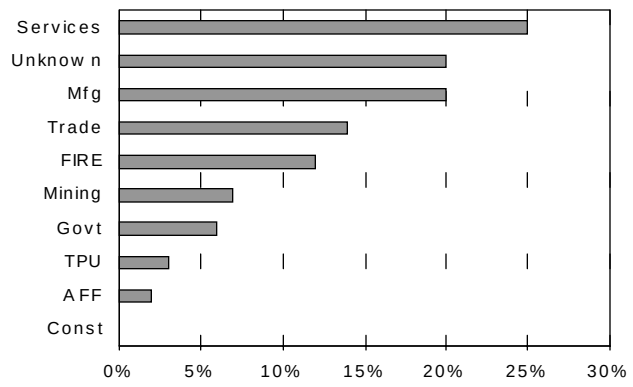
Dislocated Workers. From the third quarter of 1995 through the fourth quarter of 1997, this method identified 50,176 individuals who were likely to exhaust their UI benefits and become dislocated workers. Though data were not available for the first and second quarters of 1995, it is evident that the number of dislocated workers has eased in each subsequent calendar year—23,168 were identified in 1996 and 13,848 in 1997.

Approximately 30 percent of the 50,176 dislocated workers were separated from goods-producing sectors, mostly manufacturing, while 60 percent were from services-producing sectors, mainly services, and 10 percent had no known industry designation (*see Figure 13*). This indus-

Figure 12
Demographic Characteristics of Dislocated Workers by Type
Washington, Calendar Year 1995
Source: *Employment Security Department*

	Declining Industries	Declining Occupations	Declining Ind. & Occ.
Gender (% Female)	31.2%	41.7%	39.7%
Education (Years)	11.56	12.39	12.32
Age (Years)	38.42	37.06	38.09
WBA ($)	$233.13	$208.75	$236.44
Total UI ($)	$3,711.67	$3,224.76	$3,915.50
Duration (Weeks)	16.00	15.54	16.36
Exhaustion (Rate)	34.6%	32.5%	35.8%

Figure 13
Dislocated Workers by Industry
as Identified by the Worker Profiling System
Source: *Employment Security Department*



try distribution remained relatively constant over the 1995-97 period.

Just over half of the 50,176 dislocated workers were separated from white-collar occupations, just over a third were separated from blue-collar occupations, and the balance were from agriculture, forestry and fishing and miscellaneous occupations (*see Figure 14*). Unlike the industry composition, which was generally consistent over time, the occupational distribution has shifted considerably. White-collar occupations produced a greater share of dislocated workers in 1995 than in 1996 and 1997. Conversely, blue-collar occupations generated a much larger share of dislocated workers in 1997 than in 1996 and 1995.

Cyclicality, Restructuring and Dislocated Workers

Cyclicality and restructuring are concepts important to a discussion of dislocated workers because they tend to foster higher than average unemployment in the industries in which they are present. This has historically been the case in Washington where cyclicality and restructuring have contributed to jobless rates that are higher and more volatile than nationally. It is also important to recognize that an industry can be both cyclical and restructuring, a combination that tends to generate higher than average dislocation.

Cyclicality describes shifts in the national economic business cycle. Business cycles tend to generate disproportionately high employment or unemployment depending on whether the economy is expanding or contracting. The joblessness caused by cyclicality tends to be relatively *short-term* as workers can generally expect to be re-employed in their industries once the economy moves into recovery and expansion.

Restructuring, reflects long-term gains in productivity. Shifts of this nature typically result in unemployment as affected firms introduce new equipment, processes, and technology. Restructuring pressures are also brought to bear by shifts in consumer buying patterns. The dislocation caused by restructuring tends to be permanent. This is not to suggest a restructured industry cannot rebuild its work force or that dislocated workers cannot find re-employment in that industry. However, the new jobs created presumably require new or different skills and dislocated workers will need those skills if they hope to be re-employed.

The covered employment trend for restructured industries in Washington is one of relatively steady decline over the 1991-96 period, though the pattern appears to have bottomed out in 1995 (*see Figure 15*). This is consistent with what one expects with regard to restructured industries; the employment level after restructuring should be lower even in the midst of the state's overall economic recovery and expansion.

Continued page 14

Figure 14
Dislocated Workers by Occupation
as Identified by the Worker Profiling System
Source: *Employment Security Department*

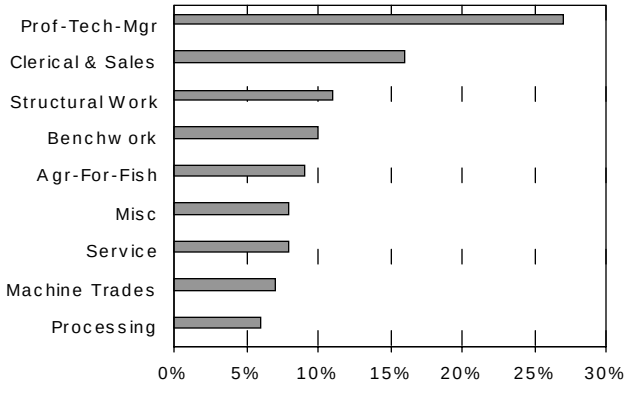
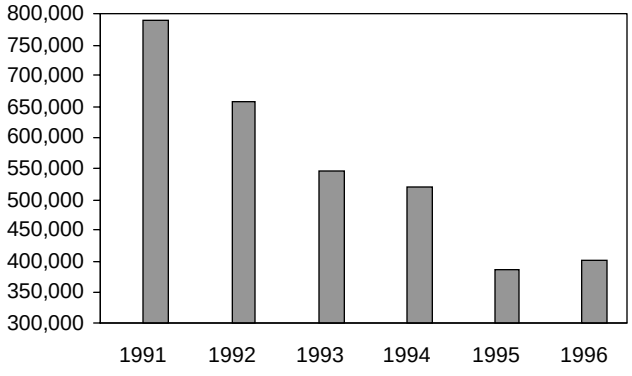


Figure 15
Structurally Mature Industry Covered Employment
Washington State, 1991-1996
Source: *Employment Security Department*



Regions or counties are not affected equally by restructuring. The degree of impact varies depending on a geographic area's industry composition and the resulting share of employment identified as restructured. As a result, there are significant differences among Washington counties when it comes to their respective shares of employment in restructured industries (*see Figure 16*).

Dislocated Workers. This method is somewhat of a departure from the prior methodologies in that it uses industry data rather than individual data. This results in a rather blunt indicator of dislocation—when the jobs themselves disappear there are no jobs to which workers can return.

Number of Workers. By this method, the net number of Washington jobs lost to restructuring over the 1988-96 period was estimated at just over 82,600. This may or may not represent the absolute number of individuals dislocated (i.e., a person could have been dislocated more than once from the same industry or from a different one). This number also does not assume that the workers in these jobs were dislocated to the extent that they are not currently working, though that may be the case.

Industry Distribution. Manufacturing, due largely to aircraft and parts, accounted for more than two-thirds of Washington's jobs lost to restructuring (*see Figure 17)*. The state's services-producing sectors (primarily trade, services, and finance, insurance, and real estate) accounted for most of the remaining third of the jobs lost to restructuring. This makeup, particularly with manufacturing heading the list, pretty much fits our intuitive perception of restructuring and its industrial impacts.

Industry Ranking. A ranking of industries most affected by restructuring at some time over the 1988-96 period revealed few surprises (*see Figure 18*). Those who follow the headlines are probably familiar with the past and present travails in these industries. Aircraft and parts topped, by far, the list with 36,200 jobs. Search and navigation equipment could be added to that as this group of aircraft parts subcontractors lost more than 2,100 jobs. Research and testing followed with 4,800 jobs due to cutbacks at the Hanford site. Variety and hardware stores, buffeted by competition from "big box" stores, lost close to 6,500 jobs. Hit by global competi-

Figure 16
Structural Jobs as a Percentage of Covered Employment
Washington State, 1996
Source: *Employment Security Department*

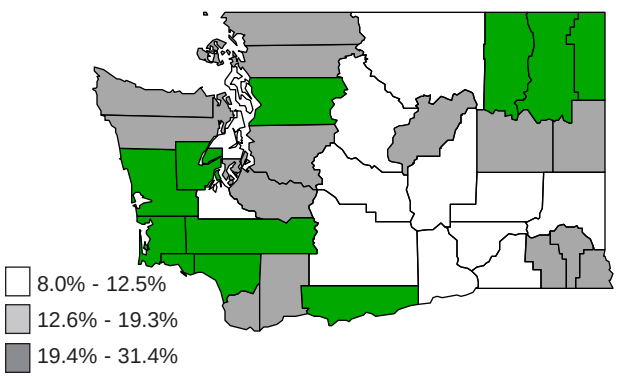


Figure 17
Net Employment Loss in Restructured Industries
by Industry Sectors, Washington State, 1988-1996
Source: *Employment Security Department*

Industry Grouping	Loss	% Share
Total	82,636	100%
Agriculture & Mining	2,725	3%
Manufacturing	55,631	67%
Transportation & Public Utilities	765	1%
Trade	11,845	14%
Finance, Insurance & Real Estate	6,428	8%
Services	5,242	6%

Figure 18
Net Employment Loss in Restructured Industries
2,000 or More, Washington State, 1988-1996
Source: *Employment Security Department*

SIC	Industry Title	Net Loss
372	Aircraft & Parts	36,195
873	Research & Testing Services	4,821
533	Variety Stores	4,297
373	Ship & Boat Bldg & Repairing	3,533
241	Logging	3,249
242	Sawmills & Planing Mills	3,120
602	Commercial Banks	2,328
091	Commercial Fishing	2,257
525	Hardware Stores	2,175
381	Search & Navigation Equipment	2,159
603	Savings Institutions	2,113

tion, ship and boat building and repairing suffered restructuring losses of more than 3,500. Logging and sawmills combined for 6,400 jobs in the wake of supply constraints. Mergers caused by national competition caused a combined loss of 4,400 jobs among commercial banks and savings institutions.

Forecasting Dislocated Workers

Forecasting the number of dislocated workers in Washington is as challenging as assessing their current number, if not more so. Nevertheless, by taking historical CPS estimates and extrapolating off that base using a forecasted state unemployment rate linked to the DRI cyclical national forecast, one can arrive at a reasonable dislocated worker forecast.

The results show a heightening in the number of dislocated workers in Washington into the 60,000 to 62,000 range as the state's economy slows over the next five years (*see Figure 19*). This forecast, which represents the Employment Security Department's best estimate of worker dislocation in the near term, was driven by the following assumptions:

- Strong economic growth in Washington in 1997-1998 giving way to easing in 1999-2000 and eventually a national economic recession in 2001-2002, as consistent with the latest cyclical forecast produced by Data Resources Incorporated (DRI).
- Less severe impacts anticipated in Washington during the national economic recession in 2001-2002 than was the case in either the 1970-71 or 1981-82 recessions due to restructuring effected in recent years.
- Washington's unemployment rate rising from an annual average of approximately 5.0 percent in 1997 to possibly 8.5 percent in 2002 based on historical relationships between the state and nation.

Figure 19
Forecast of Dislocated Workers
Washington State, 1994-2003
Source: *Employment Security Department*

Conclusion

The measurement tools used to estimate the number of dislocated workers in Washington rely on different methodologies and base data. Nevertheless, while they arrived at different absolute figures—anywhere from 32,000 to 60,000—three out of four methods generate estimates that fall within a comparable range (*see Figure 20*).

When it comes down to it, each method possesses both strengths and weaknesses. The CPS brings to the table an established national presence and time series that covers all workers, but which is offset with respect to Washington State estimates by a relatively small sample. The UI-based approaches provide an important local perspective as well as demographic and geographic characteristics of dislocated workers, but do not capture non-covered workers. The industry restructuring approach provides a detailed, industry-specific perspective, but lacks occupational characteristics and also does not capture non-covered workers. An argument might be made that a methodology for projecting worker dislocation could incorporate aspects and components of all four approaches. Why? Because

Continued page 16

Figure 20
Comparison of Dislocated Worker Estimates
Washington State, 1995 Benchmark
Source: *Employment Security Department & BLS*

	Range
Current Population Survey	32,000 to 40,000
Local Declining Industries & Occupations	55,700 or fewer
Worker Profiling	50,176 or fewer
Industry Restructuring	50,000 to 60,000

each brings to the task at least one piece of information the others cannot.

For the present, the issue of dislocated workers in Washington will be encompassed by some degree of disagreement, particularly when the discussion involves what, if anything, should be done (e.g., how much should be spent on direct and indirect assistance and what form should that assistance take). That is simply the nature of the political beast. Hopefully, this report has informed the reader about the approaches currently available to estimate the number of current and future dislocated workers in Washington, and in doing so, produced a first step toward agreement on a single methodological approach.

■ *Gary Kamimura*
Economic Analyst

Distressed Areas

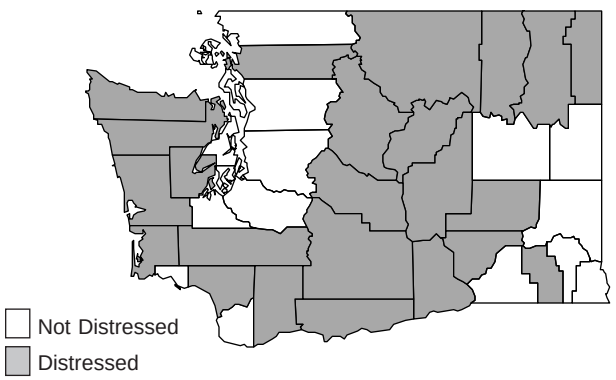
REGIONAL DEVELOPMENTS

*Dis•tress (di-stres´) –n. … **3.** The condition of being in need of immediate assistance.*

For the most recent period, some 23 counties in Washington have been designated as economically distressed *(see Figure 21)*. Over the past three years, the unemployment rate in these counties has ranged from 7.4 percent in Douglas and Jefferson counties to 14.3 percent in Pend Oreille County. During this period, the state's jobless rate averaged 5.9 percent. While the state of Washington has enjoyed solid economic and employment growth over the past several years, that economic fortune has been concentrated among Western Washington metropolitan areas. Rural counties, both east and west, have been laggardly in comparison.

This *Two Washingtons* phenomenon has given rise to a great deal of discussion among local government officials, the economic development community, the legislature, and the Governor. These disparate economic conditions have been a recurring issue since the tumultuous industrial restructuring in the natural resource sectors that began in the late 1970s and early 1980s. It was during this period that the concept of *distressed areas* came to be.

Figure 21
Distressed Counties
Washington State, 1997
Source: *Employment Security Department*



What to do

From the beginning, distressed areas were seen as regions in need of pro-active economic development. The means of encouraging that development, from the state level, has principally taken the form of tax incentives. It was in 1985 that the State Legislature created a tax incentive program to encourage the creation of manufacturing jobs in distressed areas. These incentive programs tend to defer or exempt the state sales and/or business and occupation taxes for new or expanding businesses.

No Job = Distress

The original definition of distressed areas relied on a comparison of the local unemployment rate with the state average unemployment rate. Since that time the definition has been modified for a variety of different programs. Several of these programs intent was to enhance economic activity in rural or distressed areas.

Unemployment has long been the principal indicator of regional distress because joblessness is a well understood labor market condition and is readily available on a preordained monthly and annual schedule. From the beginning, counties with unemployment rates 20 percent or more above the state average over a three-year period have been considered economically distressed. That economic measure, or variations on that standard, is now found in several state statutes that seek to address local economic distress.

Among those statutes are the following that define distress as:

- a county with an unemployment rate that is 20 percent above the state average for the immediately preceding 3 years *(see Figure 21)*.
- A metropolitan statistical area (MSA) in which the average level of unemployment for the calendar year immediately preceding exceeds the average state unemployment for the calendar year by 20 percent *(see Figure 22)*.
- A county with a median household income that is less than 75 percent of the state median household income for the previous 3 years *(see Figure 23)*.
- A designated community empowerment zone or a county containing a community empowerment zone *(see Figure 24 on the next page)*.
- A county designated by the Governor as an eligible area as a result of natural disaster, business closure, military base closure, or mass layoff.
- A county that is contiguous to a county that qualifies due to unemployment or designation by the Governor *(see Figure 25 on the next page)*.

Continued page 18

Figure 22
Distressed Counties by MSA
Washington State, 1997
Source: *Employment Security Department*

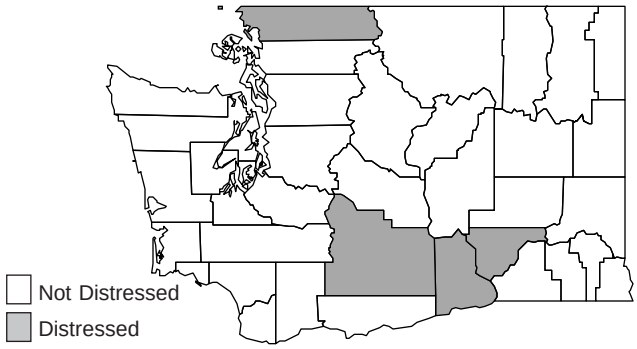


Figure 23
Household Median Income Below 75 Percent of State Average
Washington State, 1994-1996
Source: *U.S. Department of Commerce*

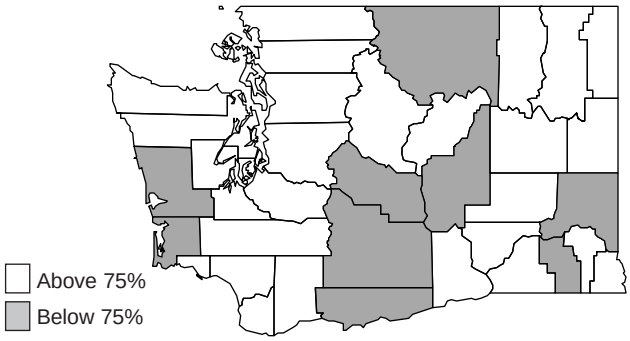


Figure 24
Counties Containing Community Empowerment Zones
Washington State
Source: *Dept. of Community, Trade, & Economic Develop.*

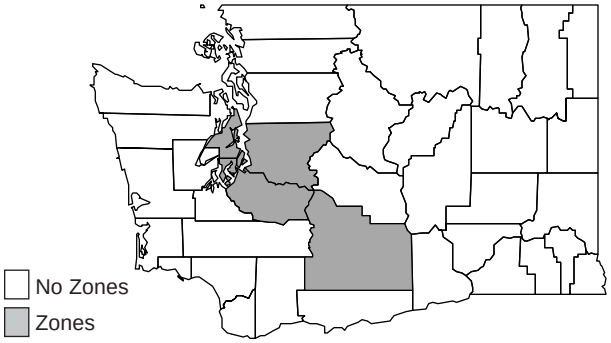
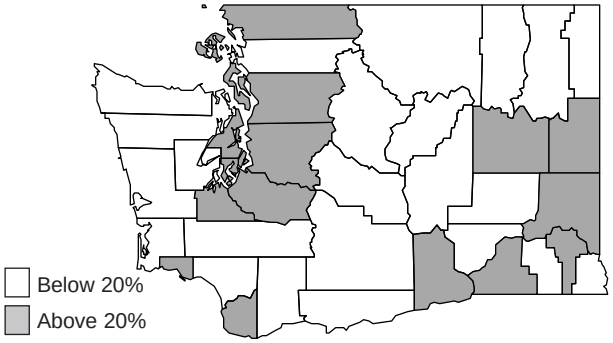


Figure 25
Counties Contiguous to Counties with Unemployment Rates
20% Above State Average
Source: *Employment Security Department*



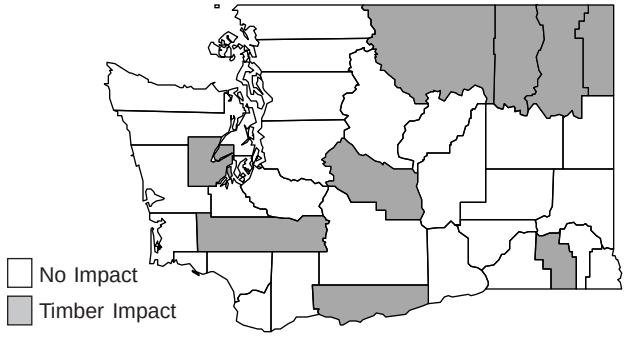
There are also a number of subcounty level definitions:

- A town with a population of less than 1,200 in those counties designated as timber impact areas *(see Figure 26)*.
- A subcounty area in those counties that are in timber impact areas that are not located in counties with an unemployment rate that exceeds the state unemployment rate by 20 percent.

An Employment and Training Tool

In addition to the economic development programs for distressed areas, there are also employment and training programs. These programs have most recently been focused on natural resource dependant counties, particularly those counties that have experienced worker dislocations in the timber and fishing sectors. The current criteria for *rural natural resource impact areas* include not only an unemployment rate 20 percent above the state average but other unemployment qualifiers and industry-specific employment data as well.

Figure 26
Timber Impact Areas
Washington State, 1998
Source: *Department of Revenue*



Fair to Middling

Over time, however, it appears that the unemployment rates alone do only a fair job of delineating areas of economic distress. Since the inception of the original distressed area definition, the list of distressed counties has changed very little from year to year. That is likely the reason for the current variety of distressed area definitions. The unemployment rate, in and of itself, is a sound labor market indicator. But joblessness is subject to population dynamics that, on the surface, could be interpreted as positive developments, when in reality could actually prove to be economically detrimental.

For instance, suppose a small rural county suffers the closure of a large lumber mill and several hundred workers lose their jobs. Of course the unemployment rate will rise. Suppose over the next year or so, no new businesses are established and these workers discover that in order to find gainful employment they have to commute to the adjacent metropolitan county.

This alone would cause the unemployment rate to drop. Is the economy better? In that there is now income flowing into those households that had been getting by on transfer payments—unemployment insurance, food stamps, general assistance welfare—things are better.

But suppose a high percentage of the unemployed workers do not want to commute, and decide to move. The population falls and the unemployment rate drops. Is the economy better? No. And if the worker has a family, the potential future work force for the area is moving also. So protracted economic distress does not necessarily show up in the unemployment rate.

In addition, there are a number of natural resource and agriculturally dependent counties in the state that have long had higher than average unemployment rates. Does that make them distressed? There are sound arguments that they are not. For a region with highly seasonal industries, the jobless rate will be naturally higher because of workers moving in and out of the labor force. While this may be indicative of a different industry mix, it is not necessarily an indicator of distress. As a result, additional information may be required to help determine distress.

Other Possible Measures

As with the definition for *rural natural resource impact areas*, which uses the unemployment rate, employment changes, and an employment derivative called the location quotient, a more broad based calculation of distress might use any number of economic measures. In addition to the unemployment rate (or changes therein), some measures that may be considered might include:

- Median household income
- The poverty rate
- The ratio of medical assistance recipients to population
- Changes in net migration
- Changes in employment growth
- Changes in taxable retail sales
- Changes in property values
- Personal income growth
- Average covered wage growth
- Commercial bank lending activity
- Bank deposits
- Changes in wage distribution
- Changes in the labor force participation rates

Income and Wages

Most wage or income series would be good candidates for use in an economic distress index. Sluggish or downward changes in the wage and income trend lines could be solid indicators of a negative economic happenstance. Median household income is a census figure updated yearly through use of personal income data derived from the National Income and Product Accounts out of the U.S. Department of Commerce, Bureau of Economic Analysis. Other data related to this series are total personal income, per capita personal income, and earned income.

On the wage side the Employment Security Department's average covered wage series would be an equally viable measure in any distress index. Average covered wages are the total wages paid divided by the annual average employment for those covered by unemployment insurance.

Poverty

The poverty rate is the ratio of individuals falling below those income levels deemed necessary to sustain an individual or family unit at the USDA recommended minimum nutrition guidelines compared to the total population. Those formulae were established by the U.S. Department of Agriculture in the late 1950s, were put in place in the mid-1960s, and have been updated yearly using the Consumer Price Index.

Medical Assistance

State medical assistance is available to those below a proscribed income level. This service is

Continued page 20

primarily called Medicaid. This measure is similar to the poverty rate in that it is a means tested program.

Migration

In the first discussion of the limitations of using the unemployment rate exclusively, the issue of people leaving distressed regions was broached. As a result of these dynamics the use of net migration data could be also be used as an indicator of distress. The rate of net migration is the ratio of net migrants—the population moving in less the population moving out—to total population. Any net migration ratio that fell over time could be an indicator of economic distress.

Job Generation

Employment growth or the lack thereof, could also be an indicator of distress. This is similar to the migration argument: if there is notably lower job growth in the county, so much so that it severely limits job opportunities for the local residents, that would also be an indicator of distress.

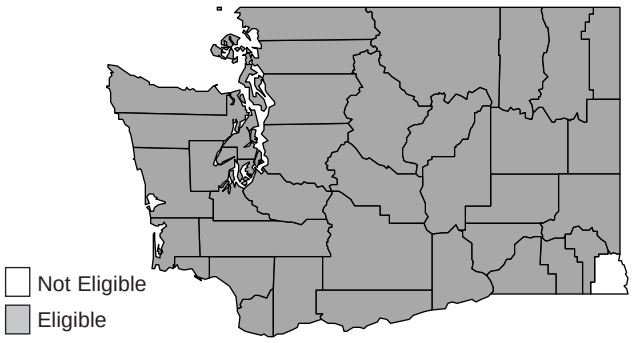
Taxable Retail Sales

As with income data, retail sales data could also perform as a distress gauge. In difficult economic times, retail sales for items other than necessities drops off. Even the expenditures for those necessities tend to change because of substitution effects. A downward shift in taxable retail sales at the local level would be a solid clue as to economic privation.

The Mix

No one of these indicators would in and of itself be an adequate measure of economic distress. Economic distress takes on many forms, and any number of data sources could be used, in addition to the ones mentioned, to measure it. Whatever indicators are used, the actual methodology should include elements gauging changes in those indicators. But in contemplating such an algorithm, there are times when thoroughness must surrender to expedience—ease of use, and ease of understanding. There does reach a point where use of additional indicators provides no additional enlightenment but merely adds to the complexity of the matter.

Figure 27
Counties Eligible for Distressed Areas Program
Washington State, 1998
Source: *Washington State House of Representatives*



Conclusion

All in all, there is currently such an array of distressed county definitions and programs that in the entire state only Asotin County fails to be covered by at least one of them *(see Figure 27)*. In the next several months, legislative staff will be studying the reasonableness of these definitions and efficacy of the programs they drive. They will review the conformance of legislative intent and implementation of each program, evaluate program's effectiveness, and make recommendations. Those recommendations could be for consolidation, enhancement, changes, additions to programs, or even elimination.

■ *Robert Wm. Baker*
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Office of Program Research

OES Wage Survey

WAGE DEVELOPMENTS

For those familiar with labor market information, Occupational Employment Statistics (OES) data have long been recognized as a source of occupational projections. But recently, the OES has also become a source of wage data. Wage data that are not only more detailed—potentially over 700 occupations—but also more comparable across states and the nation.

Local wage information has long been a scarce commodity even at best. In the past, wage data were collected on an area specific level for only a relative handful of occupations. In addition, there was no particular methodological oversight resulting in questions of comparability from region to region. The OES Wage Survey successfully addresses all these issues.

Three out of Four Hate Responding to Surveys

The Occupational Employment Statistics (OES) survey is an annual mail survey measuring occupational employment and occupational wage rates for wage and salary workers in nonfarm establishments, by industry. At the national level, the survey samples approximately 400,000 establishments per year, taking 3 years to fully collect the sample of 1.2 million establishments. Here in Washington, around 25,000 establishments employing some 1.7 million workers are surveyed over a three-year cycle.

Areas Covered

In addition to the state, OES wage data are available for each metropolitan area and four balance-of-state areas. These four balance-of-state areas cover the Northwest, Southwest, East, and Central counties *(see Figure 28)*.

This discussion will focus primarily on comparing select occupational wages for Washington State and the United States. Remember that these results are based on only one-third of the full survey, so it should not be unusual that some *interesting* wages comparisons should arise. But even for just the first year of this program, more than 8,200 employers were surveyed, almost double the number surveyed in the two-year cycle of the earlier methodology. Recall also that the earlier method captured the wage information on a relatively modest number of occupations—around 200 at best.

Figure 28
OES Balance of State Areas
Washington State, 1998
Source: *Employment Security Department*

Area 1 Northwest	**Area 2 Southwest**	**Area 3 East**	**Area 4 Central**
Clallam	Cowlitz	Asotin	Adams
Grays Harbor	Klickitat	Columbia	Chelan
Jefferson	Lewis	Ferry	Douglas
Mason	Skamania	Garfield	Grant
Pacific	Wahkiakum	Lincoln	Kittitas
San Juan		Pend Oreille	Okanogan
Skagit		Stevens	
		Walla Walla	
		Whitman	

Most More

In the select occupations highlighted here, the majority pay more than the national average *(see Figure 29 on the next page)*. Those that pay less than the national average tend to be found in some managerial, professional, and the semi-skilled production worker occupations.

A Few Less

Most times the differences in pay can be explained. For instance, financial managers in Washington State are paid almost $4,000 less per year than the national norm. This may be because of the relatively small size of the financial community in Washington. Financial professionals in Washington represent 1.9 percent of the national total; this is close to Washington's 2.0 percent share of national employment overall. But the financial industry still has heavy regional concentrations in New York, San Fran-

Continued page 23

Figure 29
Select Employment and Wage Data from the OES Survey
U.S. and Washington State, 1996
Source: *Bureau of Labor Statistics*

	United States			Washington State		
		Wages			Wages	
Occupation	**Employment**	**Mean**	**Median**	**Employment**	**Mean**	**Median**
Managerial & administrative occupations						
Financial managers	689,390	$26.15	$23.34	13,200	$23.74	$21.60
Food service & lodging managers	440,140	$12.77	$11.23	12,930	$10.83	$9.44
Professional, paraprofessional, & technical occupations						
Accountants & auditors	875,630	$18.35	$16.73	19,490	$17.57	$16.09
Wholesale & retail buyers, except farm products	96,370	$15.64	$13.82	2,760	$14.27	$12.72
Civil engineers, including traffic	183,140	$24.00	$22.67	7,800	$23.80	$22.53
Electrical & electronic engineers	295,430	$25.59	$24.74	3,750	$22.89	$21.95
Computer engineers	177,090	$26.40	$27.23	5,230	$27.12	$28.48
Mechanical engineers	175,260	$23.51	$22.58	4,580	$23.83	$23.03
Architects, except landscape & marine	87,430	$22.54	$20.88	4,570	$25.05	$24.17
Electrical & electronic engineering technicians & technologists	294,700	$16.25	$15.39	6,260	$14.04	$14.18
Drafters	269,950	$15.85	$14.65	5,050	$15.96	$15.48
Computer programmers/systems analysts	861,100	$23.25	$21.98	16,140	$22.93	$22.40
Computer support specialists	289,740	$18.12	$16.61	8,270	$18.58	$17.79
Social workers, except medical & psychiatric	351,760	$14.50	$13.08	8,920	$15.59	$16.30
Lawyers	443,740	$33.71	$33.94	7,230	$34.18	$35.54
Teachers, elementary school 1/	1,565,140	$22.05	$20.82	32,860	$22.99	$23.39
Teachers, secondary school 1/	1,324,340	$22.99	$21.71	32,630	$23.84	$24.20
Teacher aides, paraprofessional	636,170	$7.78	$7.40	24,260	$9.28	$9.37
Dentists	85,250	$41.11	$47.66	2,300	$43.23	$56.09
Registered nurses	1,908,470	$19.38	$18.44	34,210	$20.41	$19.87
Physician's assistants	71,720	$19.43	$17.30	1,880	$23.98	$24.05
Dental hygienists	148,740	$20.40	$20.36	3,090	$25.18	$29.18
Sales & related occupations						
Salespersons, retail	3,956,150	$8.26	$6.92	84,940	$9.18	$7.88
Cashiers	3,262,120	$6.58	$5.75	55,340	$8.06	$7.33
Clerical & administrative support occupations						
Tellers	599,090	$7.95	$7.73	12,900	$8.52	$8.27
Hotel desk clerks	186,100	$7.04	$6.85	3,090	$7.22	$7.09
Legal secretaries	286,800	$14.11	$13.62	4,250	$14.20	$14.34
Secretaries, except legal & medical	2,553,270	$11.12	$10.61	37,420	$11.67	$11.28
General office clerks	2,857,960	$9.27	$8.77	60,080	$10.08	$9.73
Computer operators, except peripheral equipment	198,610	$11.97	$10.98	2,630	$13.21	$11.60
Stock clerks, stockroom, warehouse or storage yard	736,350	$9.30	$8.54	14,800	$9.82	$9.09
Shipping, receiving, & traffic clerks	952,470	$10.52	$10.19	16,480	$11.09	$10.86
Service occupations						
Fire fighters	261,380	$14.27	$13.76	5,720	$16.47	$19.41
Police patrol officers	452,550	$17.06	$16.65	5,590	$19.74	$20.48
Bartenders	441,380	$6.44	$5.71	14,370	$7.02	$6.90
Waiters & waitresses	2,143,840	$5.62	$5.37	41,110	$5.93	$5.43
Cooks, restaurant	785,730	$7.78	$7.28	22,030	$8.39	$8.24
Combined food preparation & service workers	1,696,040	$5.87	$5.49	43,650	$5.98	$5.51
Nursing aides, orderlies, & attendants	1,218,870	$7.75	$7.46	20,780	$8.48	$8.12
Janitors & cleaners, except maids & housekeeping cleaners	1,900,880	$7.90	$7.18	33,320	$8.74	$8.13
Hairdressers, hairstylists, & cosmetologists	351,580	$8.05	$6.98	8,920	$7.92	$6.78
Child care workers	377,980	$6.73	$6.12	4,930	$7.19	$6.78

Figure 29 Continued
Select Employment and Wage Data from the OES Survey
U.S. and Washington State, 1996
Source: *Bureau of Labor Statistics*

Occupation	United States Employment	United States Wages Mean	United States Wages Median	Washington State Employment	Washington State Wages Mean	Washington State Wages Median
Agricultural, forestry, & related occupations						
Graders & sorters, agricultural products	61,950	$6.57	$5.98	8,640	$7.12	$7.01
Laborers, landscaping & groundskeeping	913,290	$8.89	$7.87	19,870	$10.79	$9.74
Production, construction, operating, maintenance, & material handling occupations						
Machinery maintenance mechanics	183,860	$14.61	$14.07	2,890	$14.86	$14.66
Maintenance repairers, general utility	1,086,810	$11.17	$10.42	18,740	$12.58	$12.17
Automotive mechanics	647,560	$13.29	$12.35	13,440	$14.39	$14.12
Bus & truck mechanics & diesel engine specialists	238,120	$13.70	$13.27	6,090	$16.29	$16.25
Heating, air condit., & refrigeration mechanics & installers	246,310	$14.02	$13.08	3,060	$14.91	$14.48
Carpenters	684,900	$14.49	$13.03	21,640	$17.77	$17.95
Electricians	505,020	$17.04	$15.99	11,510	$20.36	$20.05
Roofers	107,520	$12.87	$11.43	3,310	$14.40	$14.38
Machinists	417,910	$13.22	$12.68	6,730	$14.38	$14.63
Sheet metal workers	175,290	$14.04	$12.36	2,960	$17.33	$14.71
Cabinetmakers & bench carpenters	105,360	$10.56	$10.08	4,130	$10.60	$10.03
Precision dental laboratory technicians	49,840	$13.33	$11.68	2,970	$13.81	$13.04
Machine tool cutting operators & tenders, metal & plastic	92,000	$11.84	$10.55	1,050	$10.84	$10.84
Plastic molding & casting machine setters & set-up operators	29,400	$10.47	$9.87	1,010	$8.78	$8.15
Sawing machine operators & tenders	50,770	$9.10	$8.81	1,510	$10.59	$10.50
Printing press machine operators & tenders	118,940	$12.25	$11.54	2,370	$14.39	$14.61
Sewing machine operators, garment	344,520	$6.93	$6.72	3,050	$7.52	$7.20
Cutting & slicing machine operators & tenders	58,460	$10.04	$9.63	1,320	$9.30	$9.04
Packaging & filling machine operators & tenders	295,320	$9.47	$8.62	5,410	$9.63	$9.20
Electrical & electronic assemblers	198,070	$9.06	$8.49	6,380	$9.85	$9.09
Welders & cutters	288,510	$11.99	$11.17	5,540	$13.13	$12.97
Assemblrs. & fabricat., ex. mach., electric., electron., & precis.	970,470	$9.82	$8.84	9,350	$10.00	$9.43
Truck drivers, heavy or tractor-trailer	1,408,370	$13.36	$12.69	27,940	$14.78	$14.35
Truck drivers, light, include delivery & route workers	1,277,690	$9.98	$9.20	26,740	$10.13	$9.46
Industrial truck & tractor operators	309,170	$11.81	$10.87	6,720	$11.44	$10.85
Helpers, mechanics & repairers	205,630	$9.28	$8.41	3,390	$10.12	$9.17
Helpers, carpenters & related workers	185,610	$9.70	$8.86	3,740	$12.45	$11.10
Freight, stock, & material movers, hand	740,970	$9.28	$8.41	13,640	$9.89	$8.19
Hand packers & packagers	814,370	$7.00	$6.49	16,670	$6.89	$5.75

1/ The hourly wages for this teaching occupation were adjusted to reflect a 9 1/2-month work year.

cisco, and Los Angeles. It is in these three regions where the higher employment concentrations and wages would be found; regions elsewhere would probably not have equivalent salaries. The same analysis would probably hold for accountants and auditors.

Electrical and electronic engineers also come in below the national average in this first round of the OES Wage Survey. The national average is over $5,800 per year above the Washington median. While Washington does have a highly visible technology sector, it is still of modest size by national standards. Electrical and electronic engineers in Washington represent just 1.3 percent of the national total.

Production Workers

In most instances wages for production workers in Washington are above the national average. Washington has had a long tradition of a higher skilled mix of production workers, particularly in aerospace and other technology

Continued page 24

related industries. The state also has a higher share of organized workers; 29 percent of private manufacturing workers in this state are union members. That ratio is the fourth highest among the states.

Plastic molding set up operators, cutting and slicing machine operators, freight stock and material movers, and hand packers and packagers all reported wages measurably lower than the national average. These lower-than-average wages may be due to this state's high concentration of seasonal food processing. While there are a number of plastics manufacturers who cater to aerospace and other technology fields, a goodly share of plastics workers engage in the production of bottles and other food containers. Compared to those serving technology related firms, these plastics firms work with lower tolerances and therefore have lesser need for the higher quality control standards required by the technology customers. As a result, the wages may be a bit lower.

The Old Saw

As near as ten years ago, there were those who professed that high-skilled, professional, and managerial workers surrendered a portion of their salaries for the privilege of living and working in such a pristine region. According to this latest OES Wage information that is not necessarily true today. Whether this is because competition and wage pressures have eliminated the differential, or because the region is no longer pristine is the question.

How to Get

These OES wage data are, in all likelihood, the first of a new generation of information whose principal mode of delivery is by computer—either CD/ROM or the Internet. This information is now on the BLS and LMEA Internet sites at *http://www.esd.wa.gov* or *http://www.bls.gov.*

Conclusion

In the past, occupational and wage data were available by document only. The use of a document, in and of itself, places certain limits on the scope of the information being delivered, particularly if the information is intricate. The prospect of publishing a report in which a user could find an occupation of interest, the detailed description of that occupation including educational requirements and working conditions, the wages for that occupation, and the forecast for that occupation is daunting indeed. That very much describes the Occupational Outlook Handbook from the Bureau of Labor Statistics. Add to that, however, the ability to compare which states offered the best outlook and you have the latest OES/Wage system.

With the advent of newer technologies and the availability of more sophisticated data, the print medium may become the second tier in the delivery of labor market information. It is possible that in the future documents will be limited to pamphlets and brochures. The primary instrument for the conveyance of tomorrow's complex information, like the OES Wage data, is the personal computer via CD-ROMs and/or the Internet. Through this medium, and with just the first one-third of the survey cycle completed, labor market information users have at their fingertips wage data covering 740 occupations for each state in the nation.

■ *Robert Wm. Baker*
Senior Economic Analyst

LMI REVIEW

INDEX February 1997 to February 1998

Internet Sites

Employment Security Department
Labor Market & Economic Analysis Branch

www.wa.gov/esd/lmea/

U.S. Department of Labor
Bureau of Labor Statistics

http://www.bls.gov/

U.S. Department of Commerce
Bureau of the Census

http://www.census.gov/

U.S. Department of Commerce
Bureau of Economic Analysis

http://www.bea.doc.gov/

Board of Governors of the Federal Reserve

http://www.bog.frs.fed.us/

Resources for Economists on the Internet

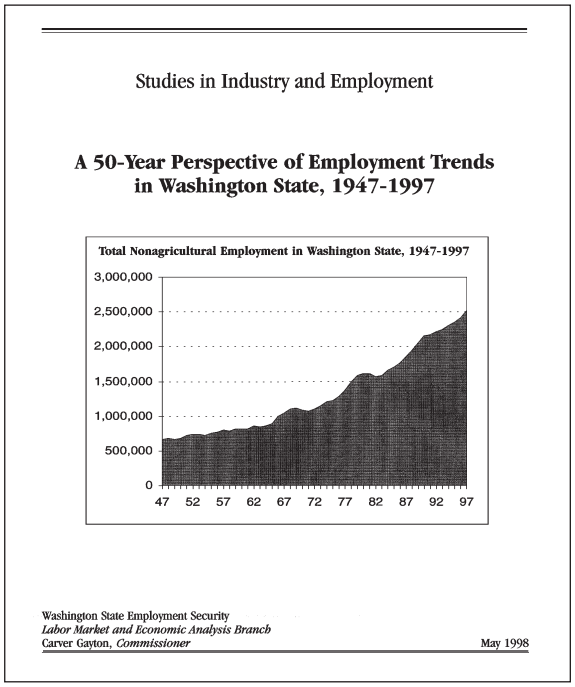
http://econwpa.wustl.edu/EconFAQ/EconFAQ.html

Now Available

STUDIES IN INDUSTRY AND EMPLOYMENT

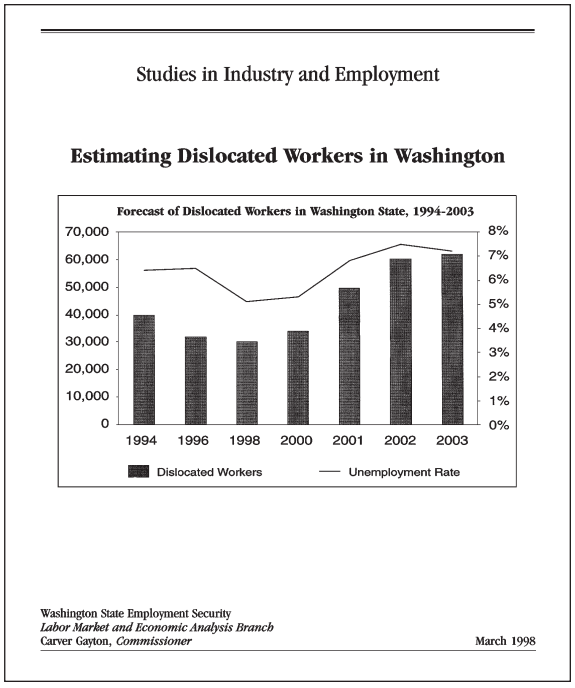
A 50-Year Perspective of Employment Trends in Washington State, 1947-1997 is the latest offering in this series. This report provides narrative and analysis of key events in Washington's post-World War II history from the perspective of employment trends in its major industries. The report also looks at industry forecasts and projections. The narrative and analysis is accompanied by numerous graphs and tables.

The cost for this report is $5.00 (Washington State residents add 8.0 percent for sales tax) plus a $2.50 handling charge.



Estimating Dislocated Workers in Washington focuses on the complex and challenging issue estimating the number of dislocated workers in Washington. It does so with particular emphasis on the pros and cons of several methodological approaches potentially available to do such estimation: Supplemental Current Population Survey method, Local Declining Industry/Occupation method, Worker Profiling method, and Industry Restructuring method.

The cost for this report is $4.00 (Washington State residents add 8.0 percent for sales tax) plus a $2.50 handling charge.



Also Available

COUNTY PROFILES

This series of publications highlights labor market and economic conditions in each of Washington's 39 counties. The profiles are designed to help state and local planners develop economic strategies as well as answer frequently asked questions about the counties. Each publication costs $4.50 plus shipping, handling, and tax.

- Geography and economic history
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- Employment and unemployment
- Income and earnings
- Economic development and infrastructure
- Major industries
- Industry and occupational profiles, including detailed wage and earnings tables
- Detailed graphs and tables