Washington State Employment Security De-

LABOR MARKET INFORMATION

REVIEW

A Quarterly Review of Washington State Labor Market and Economic Trends

June 1999

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 Gary Bodeutsch, *Director*, Labor Market and Economic Analysis Branch, Employment Security Department, Mail Stop: 6000, Lacey Complex, Olympia, WA 98507-9046, telephone (360) 438-4800.

Subscriptions and single copies may be obtained by writing to the *LMI Review Editor,* Robert Wm. Baker, at the address above, or ***rbaker@esd.wa.gov*.**

For additional labor market information, contact our

- *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***

WorkSource Founded on Strong Foundation

Commissioner
Carver Gayton

COMMENTARY

This summer Employment Security and its work force partners will launch a new venture called WorkSource to meet the employment needs of the next century.

The opening of ten WorkSource Centers in key locations, coupled with processing unemployment insurance claims by phone through TeleCenters, marks the start of the most monumental change in the 60-year history of the Employment Security system.

As other WorkSource Centers come on line, affiliate sites will be electronically linked to the system, and self-service stations—called WorkSource Connections—will be offered at all Centers, affiliates and other public and private service organizations.

WorkSource isn't just a repackaging of resources and crowding local partners into one physical location. It is a dramatic change in the way we provide employment and training services for employers and job seekers.

We have completely overhauled our systems, products, and services into an infrastructure that will form the foundation for WorkSource.

Labor Market Information is a key part of that infrastructure. It has been made more accessible and easier for businesses, job seekers, counselors, and decision-makers to use. It is available 24 hours a day on the Internet and can also be ordered from the Labor Market and Economic Analysis Branch.

The articles in this issue of the *LMI Review* are an excellent example of the improvements to make the data more user friendly. The quarterly analysis takes a look back to the 1950s and what has happened since the last time the unemployment rate was under 5.0 percent for two consecutive years.

The feature article on training goes beyond categorizing job projections in only four levels of training. Additional analysis was done using a more detailed and more current 11-category system.

The discussion of how much training is needed and at what level leads into an article on job turnover, an expensive process of filling and refilling existing jobs as workers leave for greener pastures, go back to school, or follow a spouse to a new opportunity.

The final article investigates mass layoff statistics. It addresses questions such as the size and magnitude, industries that are affected, patterns and forecasts of layoffs.

In addition to improved labor market information, there are vast improvements to the connection between claimants and employers seeking workers.

All workers who file for unemployment benefits are automatically registered for job search and within a day our job matching system is looking for their next job.

Work registration information is transmitted electronically from the state's automated benefits system (GUIDE) to JobNet, where the experience and skills are matched with employers' job requirements.

We have merged the power of computers with the convenience of the telephone to build a breakthrough service called Job Hunter. During the night, Job Hunter rips through a database of thousands of jobs to find one that matches an individual's skills and interests. When a match is found, claimants are automatically notified during their weekly phone call to file a claim.

On a recent weekend, Job Hunter was expanded from the four pilot offices to a statewide operation. Two offices were surprised by more than a thousand clients contacting the office with a job match. The solution was to strengthen the infrastructure even more.

Automating the link between the unemployment insurance and job matching systems will substantially increase the pool of job ready workers for employers. Each year up to 250,000

Continued page 2

Washington workers file for unemployment. Last year, the JobNet system contained nearly 153,000 job openings from employers and 292,000 new registrants for work.

Based on recommendations of a labor management task force, we perfected the labor exchange with new and innovative ways to deliver core services. From needs assessment to self-directed job searches, job seekers have access to as many of the core and specialized services as they need and want.

Employment Security's enhanced infrastructure will augment the resources from our partners in business, labor, private industry councils, community and technical colleges, Department of Social and Health Services, the Workforce Training and Education Coordinating Board, and the Governor's Office.

The foundation we are building together is unsurpassed by any state in the nation, and positions us to meet the challenges of the next century. ■

Holding Strong

Fourth Quarter 1998 QUARTERLY ANALYSIS

Washington's economy continued building through the fourth quarter of 1998 providing fuel for a solid showing in 1999. Year-end job growth was up 65,900 from the fourth quarter of 1997 with widespread growth in the building trades and throughout much of the service-producing industries of the state. Unemployment hovered around 32-year lows throughout most of the year although inching slightly higher than the previous year in the second half. Statewide personal income growth cumulative through the first nine months measured the third highest of any state in the nation. And hikes in average living costs for Seattle area wage and salary workers were up less than 3 percent.

But growth during the year progressively slowed. The state entered 1998 with a 3.7 percent growth rate in the first quarter that, by year-end, was effectively pared to 1.8 percent. This still represents a very respectable growth rate, but much lower than the average of the prior two years. Two industries in particular stand out as being responsible for much of the softening: computer and office equipment manufacturing and aircraft and parts. Both shifted from high growth to no growth over the course of the year and both turned negative in the second half. This pattern is expected to continue through 1999. The good news is that the rest of the economy is holding up well.

Strength in Numbers

Labor markets in the central Puget Sound area remain exceptionally tight. Any employment adjustments are taking place off a very high base. The thrust of many key sectors of the economy shows little letup from the pace in 1997-98—particularly construction and producer services. Asian markets—with the exception of Japan—look to be stabilizing. Meanwhile, growth of the U.S. economy continues to confound analysts. The huge 6.0 percent annual jump in real GDP in the fourth quarter of 1998 and the 4.5 percent advance rate for the first quarter of 1999, sent most private economists scrambling. These figures effectively boosted the consensus forecast for 1999 from less than 2 to better than 3 percent growth in GDP. Solid if somewhat more restrained growth is forecast for the months ahead.

LABOR MARKET AND UNEMPLOYMENT

Unemployment Unchanged

Washington's seasonally adjusted unemployment rate remained at a stable 4.9 percent of the work force in the fourth quarter of 1998. The year-ago figure registered 4.5 percent. The state entered the year with unemployment running lower than the year before by almost a full percentage point. The quarterly low-point in unemployment was the fourth quarter of 1997. However, the jobless rate ratcheted-up by roughly a tenth of a percentage point per quarter throughout 1998. Between the third and fourth quarters, the national rate dipped two-tenths of a percentage point to 4.4 percent. National joblessness was 4.7 percent of the work force in the fourth quarter of 1997.

Annual averages for 1998 peg the state's unemployment rate at 4.8 percent, the same as that for 1997. This is a bit deceptive in that the quarterly unemployment was trending down throughout 1997 and trending up through 1998. This certainly underscored a slowing employment pattern starting in the second quarter and the movement of the economy in 1998 off its cyclical peak. On the other hand, fluctuations in the overall statewide jobless rate in 1998 were very modest on balance and measured against a very low base. In comparison, the Seattle-Bellevue-Everett Metropolitan Area had an unemployment rate of just 3.0 percent at the end of 1998.

INDUSTRY DEVELOPMENTS

Total nonfarm wage and salary employment rose by 11,600 workers between the third and

Continued page 4

fourth quarters of 1998 for an annualized growth rate of 1.8 percent. Contrast this with the 3.6 percent growth experienced for the same period in the previous year. Slower growth by any standard.

Quarterly manufacturing payrolls fell by 6,300 led by the cyclical downturn in aircraft and parts (-2,900). Aircraft and parts employment had just hit its quarterly peak in the third quarter of 1998, with 113,500 workers. Downturns in aircraft and parts have traditionally lead the region during economic slowdowns.

There were other sectors in manufacturing that exhibited weakness at the end of 1998. Lumber and wood products reported modest declines over the quarter, but significant declines over the year. The Asian markets were of diminished value during the fourth quarter of 1998. And even though the national housing market continued strong, the availability of cheaper imported logs and lumber resulted in losses of 1,600 jobs over the year.

Computers and office equipment manufacturers had been feeling the impact of both weak export markets and ever-decreasing profit margins in the domestic markets. Between the third and fourth quarters of 1998, computer and office equipment manufacturing employment fell by 500 workers. Employment in this sector peaked in the first quarter of 1998; a total of 1,800 jobs were lost between the first and fourth quarters.

Food processing payrolls were also weak, down 1,100 over the year. Stone, clay, and glass, despite the strong construction market was off 100 in the last year. Textile employment was off by over 10 percent during the same period as cheaper imports continued to attract buyers. Meanwhile, the lengthy labor-management dispute in primary aluminum production—affecting approximately 2,300 workers—dragged on throughout the quarter.

The rest of manufacturing appeared to be continuing forward at a reasonable pace.

Undampened

Despite the extraordinarily damp winter weather, construction employment held strong. Low interest rates helped maintain an already high level of employment. Stringent deadlines for some large public works projects also kept payrolls humming. As a result, annual job growth was up 7.3 percent over the quarter and 5.3 percent over the year.

Rollin Rollin Rollin

Transportation services posted strong employment gains in trucking and warehousing. Movement of domestic and imported goods to market is a thriving sector when consumers continue to make purchases, as was the case in late 1998. Employment grew 1.8 percent over the quarter—merely average—but over 4.0 percent over the year.

Air transportation service employment soared at an 18.9 percent annual rate in the fourth quarter of 1998. Over the year growth was a lesser, though still impressive 7.8 percent. Personal income growth, the predictive element in the travel equation, advanced at a goodly pace in 1997 and 1998, thus spurring more travel for pleasure.

Water transportation services hadn't fared nearly as well as their ground-based and air-based cousins. 1998 was a meager year for ocean freight in Washington State. Sluggish Asian economies and the high dollar valuation on foreign exchange markets squelched both Washington and U.S. exports. As a result, water transportation services payrolls were down over the year.

Mergers but no Mania

In the last several years, mergers and acquisitions have centered on the banking sector. More recently, utilities have been joining in the fun. Puget Power and Washington Natural Gas merged to form Puget Sound Energy. Washington Water Power, in Spokane, was acquired by Avista to form Avista Utilities. With the banking sector setting the precedent, employment was expected to experience certain reversals. These dynamics, along with the

Continued page 7

Figure 1

Nonagricultural Wage and Salary Workers

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

Source: *Employment Security, Revenue Forecast Council, & Office of Financial Management*

				Numeric Change	
	4th Qtr 1998	3rd Qtr 1998	4th Qtr 1997	3rd Qtr 1998 to 4th Qtr 1998	4th Qtr 1997 to 4th Qtr 1998
TOTAL NONAGRICULTURAL EMPLOYMENT	2,614.9	2,603.2	2,549.0	11.6	65.9
MANUFACTURING	373.7	380.0	377.4	-6.3	-3.6
Durable Goods	266.9	272.5	268.9	-5.6	-2.0
Lumber & Wood Products	33.9	34.0	35.4	-0.2	-1.6
Logging	7.1	7.2	7.4	-0.1	-0.3
Sawmills & Plywood	22.6	22.9	24.2	-0.3	-1.6
Furniture & Fixtures	4.6	4.6	4.2	0.0	0.5
Stone, Clay, & Glass	9.6	9.5	9.7	0.1	-0.1
Primary Metals	9.5	12.1	11.8	-2.6	-2.3
Aluminum	5.3	7.7	7.7	-2.4	-2.5
Fabricated Metals	14.8	14.7	14.8	0.1	0.0
Industrial Machinery & Equipment	25.4	25.7	26.9	-0.3	-1.5
Computer & Office Equipment	6.7	7.2	8.2	-0.5	-1.5
Electronic & Other Electrical Equipment	18.4	18.4	17.8	0.0	0.6
Transportation Equipment	126.8	129.6	125.0	-2.8	1.7
Aircraft & Parts	110.6	113.5	110.4	-2.9	0.2
Instruments & Related	14.9	14.8	14.7	0.0	0.2
Miscellaneous Manufacturing	9.0	9.1	8.5	-0.1	0.5
Nondurable Goods	106.9	107.5	108.5	-0.6	-1.6
Food & Kindred Products	40.0	40.1	41.1	-0.1	-1.1
Preserved Fruits & Vegetables	13.1	13.7	13.9	-0.6	-0.9
Textiles, Apparel, & Leather	9.1	9.4	10.2	-0.2	-1.1
Paper & Allied Products	16.1	16.3	16.2	-0.2	-0.1
Printing & Publishing	24.2	24.4	24.0	-0.1	0.2
Chemicals & Allied Products	6.0	6.0	5.7	0.0	0.3
Petroleum, Coal, Plastics	11.4	11.4	11.2	0.1	0.2
MINING & QUARRYING	3.4	3.3	3.5	0.0	-0.1
CONSTRUCTION	146.0	143.5	138.7	2.6	7.4
General Building Contractors	41.8	41.0	38.8	0.7	2.9
Heavy Construction, ex. Buildings	18.9	18.9	18.8	-0.1	0.1
Special Trade Contractors	85.4	83.5	81.1	1.9	4.3
TRANSPORTATION, COMMUNICATION & UTILITIES	138.8	136.5	134.1	2.3	4.6
Transportation	93.0	91.4	89.7	1.5	3.2
Trucking & Warehousing	32.2	32.1	30.9	0.1	1.3
Water Transportation	9.5	9.1	9.5	0.3	-0.1
Transportation by Air	26.5	25.4	24.6	1.1	1.9
Communications	30.6	29.7	28.8	0.9	1.8
Electric, Gas & Sanitary Services	15.2	15.4	15.6	-0.2	-0.4
WHOLESALE & RETAIL TRADE	631.7	625.9	613.5	5.8	18.2
Wholesale Trade	153.5	154.4	151.8	-0.9	1.6
Retail Trade	478.2	471.5	461.6	6.7	16.6
General Merchandise	47.8	47.2	45.3	0.6	2.5
Food Stores	69.4	69.6	69.1	-0.2	0.3
Eating & Drinking	178.8	176.4	171.9	2.4	6.9
FINANCE, INSURANCE, & REAL ESTATE	138.5	136.5	129.7	2.0	8.8
Finance	60.2	59.2	56.0	1.0	4.2
Insurance & real estate	78.3	77.3	73.7	1.0	4.6
SERVICES	715.2	708.0	692.2	7.2	22.9
Hotels & Lodging	28.0	27.9	28.5	0.0	-0.6
Personal Services	22.7	22.7	22.5	0.0	0.2
Business Services	156.6	154.6	149.3	1.9	7.2
Health Services	183.8	183.4	181.1	0.4	2.7
Educational Services	34.7	34.3	33.2	0.4	1.5
Social Services	61.6	60.8	58.4	0.8	3.2
Engineering & Management Services	64.6	63.1	60.1	1.5	4.5
GOVERNMENT	467.6	469.4	460.0	-1.9	7.6
Federal	67.6	67.3	68.0	0.3	-0.4
State	136.3	134.3	132.2	2.0	4.1
State Education	72.4	71.1	70.7	1.4	1.7
Local	263.7	267.9	259.8	-4.2	3.9
Local Education	141.4	145.2	138.2	-3.8	3.2
Workers in Labor-Management Disputes	2.2	0.0	0.0	2.2	2.2

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*

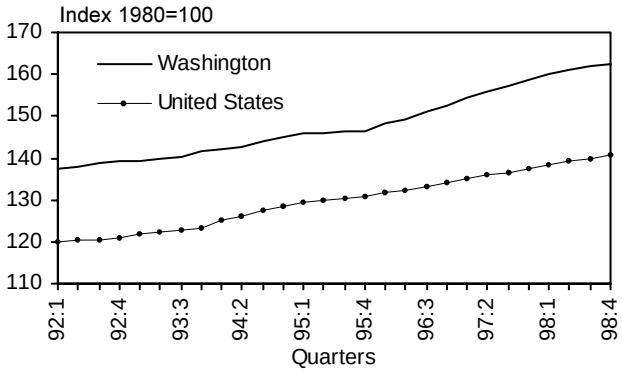


Figure 3
Manufacturing & Nonmanufacturing Employment Change
Washington State, Seasonally Adjusted
Source: *Employment Security Department*

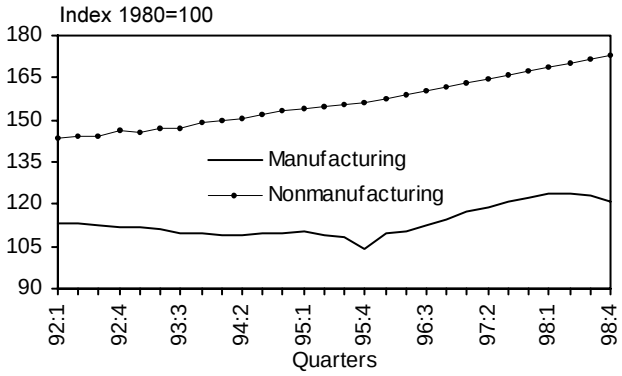


Figure 4
Unemployment Rates
Washington State & Nation, Seasonally Adjusted
Source: *Employment Security Dept., U.S. Dept. of Labor*

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

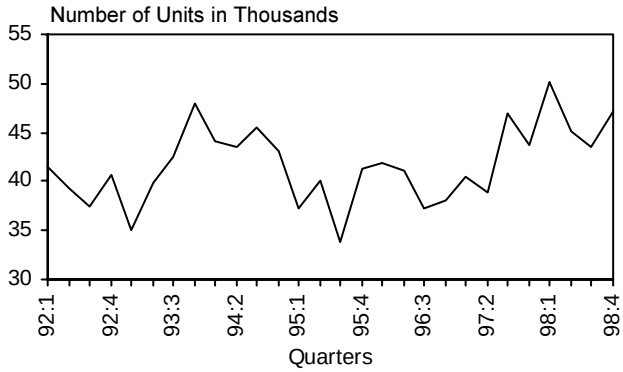


Figure 6
Consumer Price Index
All Urban Customers
Source: *Bureau of Labor Statistics*

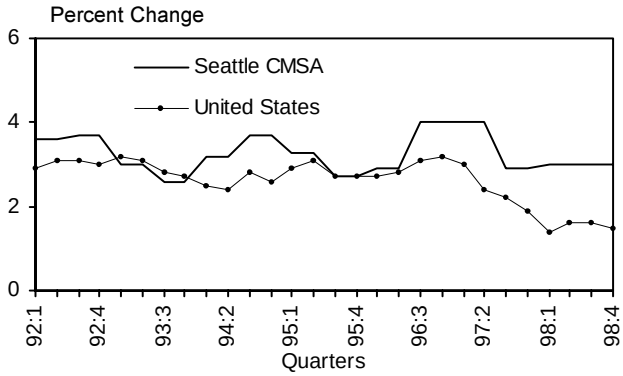
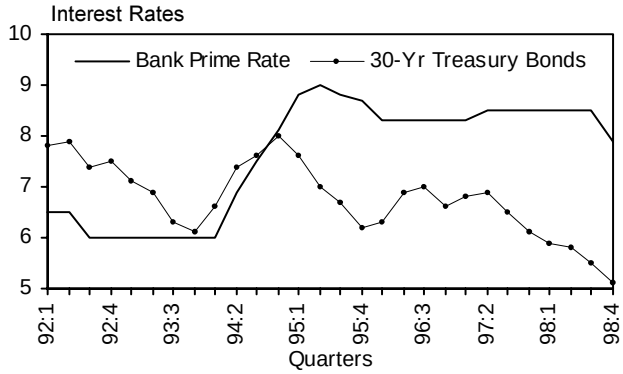


Figure 7
Selected Interest Rates
Percent Annual Rate
Source: *Federal Reserve Board*



continued easing at the Hanford Nuclear Reservation, have resulted in over-the-year employment losses of about 400 in the fourth quarter.

Trade Employment Sets the Pace

Fourth quarter general merchandising employment grew at almost triple the overall average—an annualized rate of 5.0 percent. Trends in this sector have seen "big box" stores grab a growing share of total retail sales. Maybe that's why food stores saw their employment actually decline in the fourth quarter. Employment at eating and drinking establishments did grow at triple the state average in the fourth quarter. Credit high personal income growth and greater levels of disposable income.

Equities and Houses

The finance, insurance, and real estate sector had certainly a good year in 1998. All sorts of folks were buying houses, stocks, mutual funds, and other high-end goods and services purveyed by the finance, insurance, and real estate industries. Consequently, employment in these industries was booming. If you think triple the statewide average is a good record, try almost quadruple the state average. Finance grew at a 6.9 percent clip over the quarter, and 7.5 percent over the year. Insurance and real estate grew at a 5.2 percent annual pace in the fourth quarter, and at a 6.3 percent pace year over year.

Yes Sir, No Sir Whatever You Say Sir

Though the service division did not have the fastest employment growth in the fourth quarter, or over the year, it was still a force to contend with. The services division has become the 800-pound gorilla of the labor markets—its strength is unquestioned. And no matter how you slice it, 4.0 percent growth in a division employing over 700,000 workers is a very large number. When all was said and done, the services division was responsible for over 60 percent of the net new jobs created in the fourth quarter of 1998.

Not all were high performers within the services sector however. Hotels and lodging places, personal services, and health services were under-performers during the quarter. Personal and health services recorded middling employment gains over the year, while hotels were down by 500 jobs. The latter employment pattern is likely a result of a classic build-and-absorb cycle characteristic of the hospitality sector.

On the plus side in the services division were business services, educational services, social services, and engineering and management services. Each added workers at an above-5.0 percent annual pace in the fourth quarter. Engineering and management services added jobs at the fastest rate posting a 9.8 percent annualized gain in the last three months of 1998, and in addition, their over the year growth was an impressive 7.6 percent. Increased demand for engineering services has come in the form of several large public/private construction projects, a hot commercial market, as well as a vibrant multi-family housing market.

NATIONAL INDICATORS

Go GDP Go

Spurred by a shrinking trade deficit and a flurry of consumer spending, the U.S. economy ended 1998 on an upswing. Real gross domestic product—the inflation-adjusted value of all goods and services produced in the domestic economy—grew at an exceptionally strong 6.0 percent annual rate in the fourth quarter following a 3.7 percent rise in the prior three months. For the year as a whole, the economy grew 4.3 percent. Net exports shifted from a 2.8 percent decline to a 20.2 percent increase prompting a sharp contraction in the nation's trade deficit. Personal consumption advanced by 4.5 percent. Inflation, meanwhile, remained dormant with the implicit price deflator rising less than one percent.

Continued page 8

Industrial Output Climbs

Output of the nation's factories, mines, and utilities rose slightly in the fourth quarter after a very sluggish year. Industrial production rose 0.2 percent in December and readings for October and November were revised upward. For all of 1998, however, U.S. industrial production expanded only 3.7 percent—the lowest in five years. Manufacturing grew at a 5.1 percent rate in the fourth quarter, up from 0.4 percent in the third quarter, largely reflecting catch-up in the automotive industry following the General Motors strike. Unseasonably warm temperatures caused utility output to fall over the quarter at a 12.5 percent annual rate. Factories operated at 79.9 percent of capacity—virtually unchanged from the month before.

Output per Worker Surges

Productivity of U.S. workers surged sharply in 1998—giving a hint that the 25-year slump may be over. Nonfarm business productivity jumped at a 3.7 percent seasonally adjusted annual rate in the fourth quarter, 4.0 percent in the first quarter of 1999, and stood 2.5 percent above a year ago—more than double the average growth rate since 1973 and the biggest increase in six years. Productivity is a key measure of worker efficiencies and a key determinant of employer's ability to absorb wage increases without hiking prices. This was the third year of rising output per worker. The 1990s have seen an equal share of strong employment growth and healthy productivity gains attributed to computer and communication technology, organizational and managerial efficiencies, and broader skills of U.S. workers.

THE OUTLOOK

When was the last time that Washington's annual unemployment rate fell below 5.0 percent for two years in a row? Well, you have to go back to 1952-1953 to find such a situation. Sure, there have been several years since then when the jobless rate was below 5.0 percent (1990, 1968, 1966, and 1956), but not for two consecutive years.

Let's see… that's 45 years. It would be interesting to know how many, if any, people are working today who experienced that last period of low joblessness. Consider also that no Baby Boomer has ever worked during such a period. Nearly two full generations of workers have come and gone during those 45 years.

What does this mean? Is the economy so much better now than it has been in those two score and five years? There are certainly measures that this may be true. The first evidence of this is the already stated fact that the annual unemployment rate has been below 5.0 percent for two years. That this jobless level was reached without there being a wartime economy is in distinct contrast to all the other low unemployment periods prior to 1990. Further evidence is that the Gross Domestic Product tallies continue to out-perform the Blue Chip Consensus forecasts quarter after quarter. In addition, inflation—the scourge of all wage earners—has been at historically low levels during this period, contravening the traditional presumption that there is a trade-off between inflation and unemployment. And let's not forget the burgeoning stock market and its wealth effect. These elements tell us that something is dramatically different about this business cycle.

Another indicator of economic climate is consumer confidence. Consumer confidence, while not unusually high, is unusually deep. In its most recent release, the Conference Board's Consumer Confidence Index stood at 133.9 (1985=100). Only 8.5 percent of those surveyed said business conditions were "bad." More than 48 percent said jobs were plentiful. The proportion of consumers claiming jobs are "hard to get" remains at an all-time low of only 11.8 percent. Since personal consumption accounts for about two-thirds of all economic activity, consumers basically drive the economy.

What may be the most important change in this most recent business cycle is the composition of the work force. It is a well-known fact that the work force is aging. Consider that the youngest

Baby Boomer is now 36 years old, and the oldest is pulling 50. This in combination with the much smaller subsequent age cohorts has pushed the median age up to levels not seen since the 1950s. What this principally means is that the single largest cohort—the boomers—are in their most stable employment years, and the succeeding cohorts are not large enough to supply an historically similar number of new entrants to the work force. And while the labor force projections foretell of slow growth in the forecast period, that slow growth has been evident currently. So with the largest cohort in their most stable employment period, and a much smaller cohort in their most volatile employment period, the jobless rate has declined to rates not seen since the 1950s.

That helps explain the current low unemployment rate, but what else does it explain. Well it also explains the nation's current economic growth. The large boomer cohort—long tagged as the consumer generation—can now cast off that label. Boomers are now in their prime saving years. Well, wait a minute… isn't the national savings rate only about three percent? That is true in the traditional measures; but as we all know boomers are renowned for eschewing tradition. What boomers have done is what many consumers attempt… they have bypassed the middle man, i.e. savings institutions and banks. By going through brokerage firms and investing in securities, equities, mutual funds, and many combinations thereof, boomers have redefined savings. By doing so, they have boosted activity and demand for these investment instruments; that's one of the reasons for the DOW 11,000. It is now estimated that some 40 percent of all households have a direct connection to the stock market—as opposed to an indirect connection like a retirement system that invests in the market.

And That's Not All

So we have a lower unemployment rate and a vibrant form of savings. So what? Consider that this form of savings is in and of itself a boon to the economy. A capitalistic economy requires capital investment. That this savings method represents the pumping of ever-greater levels of capital into the economy means that firms can make the needed capital investments to continue growing and improving.

Thus firms are motivated two-fold. First many see the labor shortage as an impediment on potential growth. The Boomer paradigm of labor abundance is shifting to a Post Boomer paradigm of labor scarcity. Increased output in the post-industrial service based economy, formerly requiring increased employment during the labor abundance era, will now require increased capital investment. Second and relatedly, firms are finding that in this current economy capital formation is relatively cheap and attractive. One of the reasons it is cheap is its abundance. Another reason capital is cheap is that many firms have bypassed the traditional middleman as well: by raising capital via the equity markets, new firms can receive huge infusions of development capital without the burden of traditional debt.

There is, of course, the inevitable burden of economic performance—profits and dividends will demarcate the viable mature firm. In the near term, however, that is not the case. (Quick Quiz: Why can Amazon.com, a retailer, lose $225 million during the first three years of its operation? Because there is no banker breathing down their necks demanding payment on their loan.)

So what does this all mean? It means that the economic consequences of demographic change are more than evident in this business cycle, and as a result, the economy is different. These differences are of such a magnitude that economic predictions become less tied to precedents and much more speculative.

That having been said, this demographic shift could easily carry forward for the next 10 or 12 years. During this time, the economy should experience a relative abundance of capital and a relative scarcity of labor. These major factors will translate into a higher level of capital per worker, even in some of the industries with a low capital to worker ratio—parts of agriculture, retailing, personal services, and parts of business services. Higher levels of capital per worker means greater productivity, better wages, more stable employment, lower unemployment, and a higher standard of living.

Continued page 10

In a bit broader terms, these elements should result in a lessening of the seasonal and cyclical forces at play in the economy. A diminished seasonal element should result in, as mentioned above, more stable month to month employment. This would be a big plus for Washington where the share of seasonal employment has recently been half again higher than the national norm. And a diminished cyclical effect would mean that whatever downturns did occur would be less disruptive than previous ones. As with the share of seasonal employment, Washington's share of cyclical employment has also been much higher than the national average.

The 1991 downturn gave us a preview of that diminished cyclical effect. Traditionally, the U.S. and Washington economies moved in unison, with Washington experiencing higher highs and lower lows. For instance, the nation's annual unemployment rate reached 9.7 percent during the 1982 recession compared to Washington's 12.1 percent. In 1991 while the U.S. was moving into recession, the Washington economy continued to add jobs. And though the jobless rate rose, it didn't do so in the traditional pattern. U.S. unemployment hit 7.5 percent in 1992—"The worst economy since the great depression!" to quote the peculiar hyperbole of the time. Washington's unemployment rate hit 7.6 percent, identical to the U.S. average for all practical purposes. Much of the credit can go to the aerospace sector that was still growing during this period. In 1998 and 1999, the U.S. and Washington appear to be in reversed positions compared to 1991. This time the U.S. economy keeps humming along while Washington's aerospace sector is in a down-cycle. The net result? Even in 1999, with the loss of thousands of aerospace jobs, the annual jobless rate for Washington State is forecast to remain below 5.0 percent.

If this unemployment forecast holds, that will make it three years in a row.

■ *Dennis Fusco*
Chief Economist
and *Robert Wm. Baker*
Senior Economic Analyst

Another Look at Training Levels

FEATURE ARTICLE

One of the popular beliefs regarding the future labor markets is that all new jobs will require a higher level of training. That being the common perception, it might be surprising to discover that in Washington State, over 60 percent of the new jobs created between 1996 and 2006 will not require any formal post-secondary training. By examining the current training requirements of specific occupations, the Employment Security Department has been able to analyze the training requirements for jobs in the future.

Over the past several years, it has become a standard in the Employment Security Department's occupational pamphlets to categorize job projections by training levels. Four categories of training levels have been used in these analyses: jobs requiring less that a high school diploma, jobs requiring a high school diploma, jobs requiring some postsecondary training, and jobs requiring a bachelor's degree or higher.

Too General

But such a categorization scheme tends to lump many different occupations of many different training levels together. Because of the overly general nature of this 4-category design, additional analysis was done using a more detailed and more current 11-category system. The Bureau of Labor Statistics (BLS) used these classifications in their most recent national occupational projections.

The More the Better

The principal advantage of the more recent system is that it is more specific in defining occupations with formal and informal training levels. In this system, the first 4 occupational

categories include no formal postsecondary training. While they may contain some training, it is employer sponsored, on-the-job, and workers are considered employed in the occupation while receiving that training. That was not the case in the earlier system where the second category did cluster occupations with formal postsecondary vocational training and those with informal training.

In addition, there is much more specificity in postsecondary training levels as well. In the previous 4-category system, there was only the broad grouping of "bachelors degree or higher." The newer system includes five levels of specificity: bachelor's degree, work experience plus bachelor's or higher degree, master's degree, doctor's degree, and first professional degree.

There are Openings *and* There are Openings

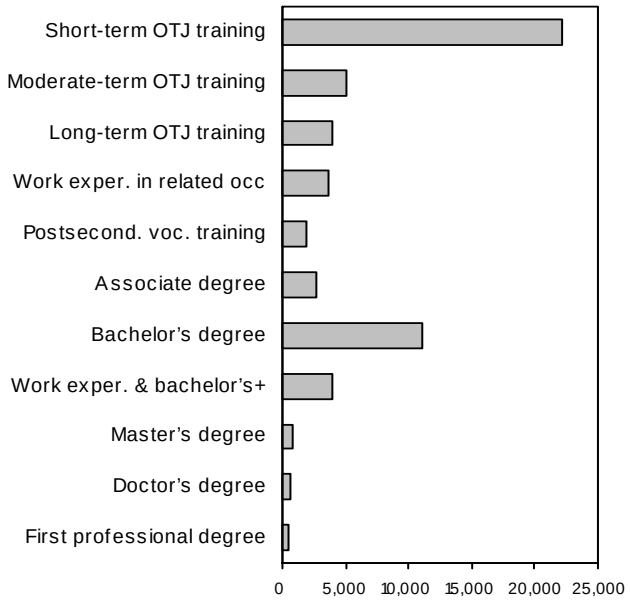
Included in these projections are job openings due to change, and job openings due to replacements. The best way to interpret these categories is to think of job openings due to change as *new* jobs, and job openings due to replacement as *old* jobs.

Notice that *growth* is parenthetic to *change* in this discussion. This is because not all change is growth. There are many instances that the change in occupations is negative; though only a few of those occupations appear within this analysis because of its limited approach. But among the over 740 occupations for which there are projections made, 100 occupations are expected to decline in employment in the 1996-2006 period. Even so, thanks to *replacement* openings, all of the occupations for which projections are made will provide some employment opportunity.

New Jobs

In this forecast period, 47.4 percent of the projected 118,992 job openings will be due to change, while the residual openings will be due to replacement *(see Figure 8)*. This relationship between openings due to change and openings due to replacement is not constant across these training level categories. In general, the lower the training level, the lower the ratios of job openings due to change. Jobs with the lowest ratio of job openings due to change are those requiring postsecondary vocational training. This is likely a result of the relatively slow growth of industries using workers with just vocational training. On the other end of the spectrum are occupations requiring a bachelor's degree. Fully 60 percent of these job openings are due to change.

Figure 8
Occupational Projections by Training Level
Washington State, 1996 - 2006
Source: *Employment Security Department, LMEA*



Old Jobs

Job openings due to replacement make up the majority of all job openings. In these projections, 52.6 percent of all job openings will be a result of replacement. Replacement openings are for existing jobs that become available when workers are replaced after leaving their jobs. In general, the lower the training level, the higher the ratios of job openings due to replacement, though this is not a hard and fast rule. In many instances the high ratio of replacement openings is a result of low growth rates for occupations found in mature industries like lumber and wood products.

Continued page 12

Quasi-Technical Note:

During a given period, some individuals may leave an occupation for a variety of reasons and must be replaced. Some become employed in a different occupation as a result of a promotion, a desire to change careers, the loss of an existing job, the need for a different job while attending school, or caring for a family, or some other reason. Others who leave an occupation stop working altogether because they retire, desire more leisure time or take an extended vacation, assume family responsibilities, return to school, become ill, move out of the geographic area or for some other reason. Individuals who change employers but remain employed in the same occupation (turnover) are not included in counts of total replacement needs. Job changes by these individuals have no impact on the number of openings for persons desiring to enter an occupation.

One must be careful about judging the desirability of jobs based on the level of replacement. Replacement rates are calculated for every job, and demographic characteristics of current jobholders are taken into account. If large shares of older workers are found in a particular occupation, then it will have a high replacement rate because of retirements; postsecondary teachers have a high replacement rate for this very reason.

TRAINING LEVELS

Short is Sizable

In the 1996-2006 occupational projections, jobs that require only short-term on-the-job training (up to one month) represent over 39 percent of the total job openings due to growth *(see Figure 9)*. Thanks to the quick movement up and out of these occupations, the replacement rate is the highest among the training categories. As a result, jobs that require only short-term on-the-job training constitute over 48 percent of the job openings due to replacement. In total, these jobs represent 44 percent of the total job openings through 2006.

What kind of jobs are these? For the most part, they are entry-level retailing, service, and production occupations. The top ten occupations in this training level make up over 25,300 job openings per year.

Moderate is Modest

For jobs requiring moderate-term on-the-job training—up to twelve months—the outlook is more modest than for jobs requiring short-term training. The annual growth *rate* for these jobs is the second lowest of the eleven categories. But

Figure 9
Occupational Projections for the Top Ten Jobs Requiring Up to One Month of On-The-Job Training
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

	Employment		Annual Openings			Annual Rates	
Occupational Title	**1996**	**2006**	**Change**	**Replacement**	**Total**	**Change**	**Replacement**
Salespersons, Retail	89,343	113,906	2,456	2,832	5,288	2.8%	3.2%
Cashiers	57,659	73,517	1,586	2,514	4,100	2.8%	4.4%
Comb Food Prep/Serv Wkrs	42,715	51,981	927	2,178	3,105	2.2%	5.1%
Waiters & Waitresses	39,184	46,219	704	1,998	2,702	1.8%	5.1%
General Office Clerks	64,577	73,787	921	1,472	2,393	1.4%	2.3%
Food Preparation Workers	23,463	30,887	742	1,197	1,939	3.2%	5.1%
Helpers & Laborers, NEC	30,814	36,782	597	1,038	1,635	1.9%	3.4%
Janitors & Cleaners	36,523	44,530	801	741	1,542	2.2%	2.0%
Hand Packers & Packagers	22,131	29,870	774	591	1,365	3.5%	2.7%
Reception/Information Clks	27,105	34,817	771	501	1,272	2.9%	1.9%
Total	433,514	536,296	10,279	15,062	25,341	2.4%	3.5%

Figure 10
Occupational Projections for the Top Ten Jobs Requiring 1 to 12 Months of On-The-Job Training
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Sales Representatives, NEC	22,911	26,972	406	543	949	1.8%	2.4%
Bookkpng, Accntng, Audit Clks	49,438	50,315	88	831	919	0.2%	1.7%
Sales & Related Workrs	11,986	14,930	294	337	631	2.5%	2.8%
Instructors & Coaches, Sports	8,248	11,922	367	75	442	4.5%	0.9%
Sales Reps, Science	10,157	12,094	194	241	435	1.9%	2.4%
Painters & Paperhangers	9,346	11,378	203	207	410	2.2%	2.2%
Telemktrs, Door-To-Door Sales	7,422	9,280	186	201	387	2.5%	2.7%
Dental Assistants	6,782	8,961	218	166	384	3.2%	2.5%
Salespersons, Parts	7,258	8,861	160	221	381	2.2%	3.1%
Medical Assistants	4,430	6,770	234	86	320	5.3%	1.9%
Total	137,978	161,483	2,350	2,908	5,258	1.7%	2.1%

because the high number of existing jobs in this grouping is so substantial, the number of annual job openings is third highest with 11,650 *(see Figure 10)*.

Four out of the top ten jobs that require moderate-term on-the-job training are sales jobs; five out of ten if you include telemarketers. Rounding out this short list are medical assistants, dental assistants, painters & paperhangers, instructors & coaches, and bookkeeping clerks.

The largest occupation in terms of base employment on this short list is bookkeeping clerk. It has the unusual distinction of having the second highest number of job openings in this category, but the lowest annual rate of change. The majority of job openings for bookkeeping clerks result from replacement.

Long-Term On-the-Job Training

Occupations that require more than 12 months of on-the-job training represent 7.1 percent of annual job openings in Washington State *(see Figure 11)*. Replacements account for just over 53 percent of all openings for occupations of this training level.

Continued page 14

Figure 11
Occupational Projections for the Top Ten Jobs Requiring More Than 12 Months of On-The-Job Training
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Carpenters	29,429	33,985	456	521	977	1.6%	1.8%
Cooks, Restaurant	16,032	20,061	403	382	785	2.5%	2.4%
Electricians	14,903	17,355	245	313	558	1.7%	2.1%
Police Patrol Officers	6,324	8,471	215	218	433	3.4%	3.4%
Fire Fighters	5,247	6,376	113	206	319	2.2%	3.9%
Cooks, Institution/Cafe	6,921	8,423	150	165	315	2.2%	2.4%
Flight Attendants	4,586	6,269	168	111	279	3.7%	2.4%
Automotive Body Repairers	4,666	5,913	125	144	269	2.7%	3.1%
Correction Officers	4,409	6,428	202	67	269	4.6%	1.5%
Machinists	7,364	8,304	94	163	257	1.3%	2.2%
Total	99,881	121,585	2,171	2,290	4,461	2.2%	2.3%

Though in general replacement openings outnumber change (growth) openings, the annual rates of change and replacement vary considerably in the top ten occupations requiring more than 12 months of on-the-job training. Flight attendants, correction officers, and police patrol officers all had annual growth rates well above 3.0 percent, but replacement rates were well below the growth rate for correction offices and flight attendants. On the other hand, machinists had a growth rate of just 1.3 percent and a replacement rate of 2.2 percent. Like machinists, carpenters and electricians—the other skilled trades in the top ten list—also had below average growth rates.

No Substitute for Experience

Occupations requiring work experience in a related occupation are in the last training category that does not require formal postsecondary credentials. These occupations constitute 6.4 percent of all job openings. Just over 51 percent of these job openings are a result of replacements *(see Figure 12)*.

The top ten occupations requiring work experience in a related occupation represent over three-quarters of the total job openings in this category. The top two occupations requiring work experience in a related occupation—marketing/sales supervisors and clerical supervisors—represent over one third of all job openings in this classification. Seven out of the top ten occupations in this group are managerial or supervisory—indicative of the work experience required.

Postsecondary Vocational Training

Occupations demanding postsecondary vocational training will make up 3.9 percent of all job openings in Washington State through 2006. This grouping is characterized as having the highest share of job openings due to replacements; but this is because of the low overall rate of growth rather than a high rate of replacement *(see Figure 13)*. As a matter of fact, this category has the lowest overall rate of growth of the 11 groups, and a lower-than-average replacement rate.

The best example of the mixed dynamics of this training group is its top occupation by annual openings—secretaries, excluding legal or medical. Of the top ten occupations in this training category, secretary is tied for the lowest growth rate and the lowest replacement rate. Thanks to the large number of workers in this field—almost 44,700 as of 1996—the low growth and replace-

Figure 12
Occupational Projections for the Top Ten Jobs Requiring Work Experience in a Related Occupation
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

	Employment		Annual Openings			Annual Rates	
Occupational Title	**1996**	**2006**	**Change**	**Replacement**	**Total**	**Change**	**Replacement**
Marketing/Sales Supervisor	39,552	47,698	815	633	1,448	2.1%	1.6%
Clerical Supervisors	25,912	32,023	611	601	1,212	2.4%	2.3%
Service Supervisors, NEC	15,048	18,297	325	358	683	2.2%	2.4%
Food Srvc & Lodging Mgrs	10,656	14,384	373	227	600	3.5%	2.1%
1st Line Super: Production	10,825	12,380	156	254	410	1.4%	2.4%
Electric/Electron Assemblrs	4,977	7,020	204	120	324	4.1%	2.4%
Service Workers, NEC	6,602	7,968	137	170	307	2.1%	2.6%
1st Line Super/Const,Extrac	7,226	8,213	99	158	257	1.4%	2.2%
Teachers & Instruct, VocED	6,457	8,174	172	59	231	2.7%	0.9%
1st Line Super: Mech.&Repr	7,123	7,923	80	147	227	1.1%	2.1%
Total	134,378	164,080	2,972	2,727	5,699	2.2%	2.0%

Figure 13
Occupational Projections for the Top Ten Jobs Requiring Postsecondary Vocational Training
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Secretary, Excl Legal or Med	44,656	47,580	292	777	1,069	0.7%	1.7%
Automotive Mechanics	15,331	19,060	373	400	773	2.4%	2.6%
Hairdressers & Hairstylists	12,170	13,651	148	324	472	1.2%	2.7%
Licensed Practical Nurses	9,693	11,595	190	205	395	2.0%	2.1%
Welders & Cutters	6,360	7,669	131	163	294	2.1%	2.6%
Drafters	7,871	8,380	51	156	207	0.7%	2.0%
Emergency Med Technician	2,593	3,921	133	50	183	5.1%	1.9%
Travel Agents	4,091	4,753	66	92	158	1.6%	2.3%
Legal Secretaries	4,371	5,167	80	76	156	1.8%	1.7%
Medical Secretaries	3,610	4,312	70	63	133	1.9%	1.7%
Total	110,746	126,088	1,534	2,306	3,840	1.4%	2.1%

ment rates still resulted in the greatest number of job openings for jobs requiring postsecondary vocational training.

Associate Degree

Associates degrees differ from vocational training in that associate degrees require two full years of college level education while vocational training can be of shorter duration. Growth in jobs requiring an associate degree will average 2.4 percent per year, the third highest growth rate of these 11 categories. Of the total job openings requiring an associate degree, almost 59 percent will be due to growth; only jobs requiring a bachelor's degree have a higher ratio of openings due to growth *(see Figure 14)*.

The top ten occupations that require an associate degree constitute over 85 percent of all job openings in this training category. Of those top ten occupations, five (possibly six) of them are health care related. The fastest growing jobs within the top ten are paralegals with a growth rate of 7.8 percent per year.

Continued page 16

Figure 14
Occupational Projections for the Top Ten Jobs Requiring an Associate Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Registered Nurses	37,145	45,283	814	513	1,327	2.2%	1.4%
Teacher Aides, Paraprof	19,174	24,166	499	253	752	2.6%	1.3%
Health Prof/Para/Tech, NEC	9,685	12,158	247	188	435	2.6%	1.9%
Electrical & Electronic Tech	8,102	9,670	157	213	370	1.9%	2.6%
Dental Hygienists	3,986	5,631	165	120	285	4.1%	3.0%
Paralegals	2,398	4,263	187	21	208	7.8%	0.9%
Medical Records Techs	2,304	3,489	119	45	164	5.1%	1.9%
Engin Tech/Technol, NEC	5,730	6,132	40	103	143	0.7%	1.8%
Science Technicians, NEC	3,025	3,593	57	70	127	1.9%	2.3%
Radiologic Technols/Techs	3,015	3,703	69	47	116	2.3%	1.6%
Total	94,564	118,088	2,354	1,573	3,927	2.5%	1.7%

Figure 15
Occupational Projections for the Top Ten Jobs Requiring a Bachelor's Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Teachers, Secondar School	28,508	35,948	744	850	1,594	2.6%	3.0%
Teachers, Elementary	30,872	39,140	827	590	1,417	2.7%	1.9%
Systems Analysts	13,209	24,257	1,105	90	1,195	8.4%	0.7%
Computer Engineers	10,337	21,372	1,104	70	1,174	10.7%	0.7%
Prof, Paraprof, Techs, NEC	22,256	26,876	462	547	1,009	2.1%	2.5%
Computer Scientists, NEC	3,942	11,129	719	27	746	18.2%	0.7%
Accountants & Auditors	20,337	23,499	316	417	733	1.6%	2.1%
Electric & Electron Engineer	9,780	13,825	405	246	651	4.1%	2.5%
Mgmt Support Wrkrs, NEC	16,891	19,831	294	336	630	1.7%	2.0%
Engineers, NEC	8,127	11,230	310	223	533	3.8%	2.7%
Total	164,259	227,107	6,286	3,396	9,682	3.8%	2.1%

Bachelor's Degree

Jobs that require a bachelor's degree are the second largest category behind those that require short-term on-the-job training. This category of jobs is the fastest growing of the eleven, with an annual growth rate of 3.1 percent. In addition, over 60 percent of all openings for jobs requiring a bachelor's degree are due to growth, also the highest among the eleven categories *(see Figure 15)*.

The top ten occupations in this group include a diverse mix of very fast growing and very slow growing jobs. The fastest of these select jobs is computer scientist, with an annual growth rate of over 18 percent. The slowest growing is accountants and auditors, with annual growth of 1.6 percent.

Replacement rates vary widely as well. Secondary school teachers have the highest replacement rate of the top ten occupations that require a BA. It is more noteworthy, however, that the replacement rate for secondary teachers is greater than the growth rate. This is indicative of the demographics of the teaching profession. Many school districts are ruing the prospects of replacing many experienced teachers as they near retirement.

On the other end of the replacement spectrum are systems analysts, computer engineers, and computer scientists. Each has a replacement rate of 0.7 percent. As these are so quickly expanding, the promotional prospects within the field probably results in more turnover than replacement.

The top ten jobs that require a bachelor's degree represent over half of all jobs requiring a BA.

Work Experience Plus a BA

Above and beyond jobs that require a bachelor's degree are progressively smaller groupings of occupations. Jobs that require a bachelor's degree *and* work experience will account for 7.0 percent of all job openings due to growth and 5.8 percent of openings due to replacement through 2006.

These jobs are generally managerial in nature. As a matter of fact, the most job openings are projected to be for general managers. Within the top ten jobs requiring a BA plus work experience, the fastest growing job is expected to be engineering, math, and natural science managers with 5.0 percent growth *(see Figure 16)*. Administrative service managers will have the slowest growth at 1.4 percent. In addition, these top ten jobs account for 92 percent of all job openings requiring a BA plus work experience.

Figure 16
Occupational Projections for the Top Ten Jobs Requiring Work Experience Plus a Bachelor's or Higher Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
General Mgrs & Top Execs	59,808	72,416	1,261	1,274	2,535	2.1%	2.1%
Mgrs & Administrators,NEC	35,367	41,452	609	753	1,362	1.7%	2.1%
Financial Managers	15,330	19,054	372	290	662	2.4%	1.9%
Market/Adver/Publ Rel Mgrs	10,673	14,359	369	195	564	3.5%	1.8%
Enginr, Math, Nat Sci Mgrs	6,373	9,580	321	136	457	5.0%	2.1%
Education Administrators	7,208	9,136	193	189	382	2.7%	2.6%
Artists/Commercial Artists	4,997	7,172	218	103	321	4.4%	2.1%
Persnl/Training/Lab Rel Mgr	4,824	6,016	119	131	250	2.5%	2.7%
Admin Services Mgrs	6,035	6,890	86	129	215	1.4%	2.1%
Medicine & Health Svc Mgrs	4,138	5,231	109	89	198	2.6%	2.1%
Total	154,753	191,306	3,657	3,289	6,946	2.4%	2.1%

Master's Degree

Examining jobs that require a master's degree takes us into sparse territory. These jobs represented just 1.1 percent of all jobs in 1996. They are projected to capture 1.4 percent of new jobs through 2006. Because the rate of replacement is a more modest 0.9 percent, these jobs will still constitute just 1.1 percent of total job openings in the forecast period.

Jobs requiring a master's degree have a definite public sector bent. Included in the top ten occupations in this category are graduate assistants, librarians, teachers & instructors, and urban and regional planners *(see Figure 17)*. Several of the remaining ten also have public sector predilections though not exclusively.

The top ten jobs requiring a master's degree account for 98 percent of the job openings at this training level.

Is There a Doctor in the House?

In 1996, some 27,700 jobs in Washington State required a doctor of philosophy degree (Ph.D.). That was just 1.0 percent of all jobs. In the forecast period, jobs requiring a Ph.D. are expected to capture 1.2 percent of all the new

Continued page 18

Figure 17
Occupational Projections for the Top Ten Jobs Requiring a Master's Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Social Workers, Med & Psyc	6,578	8,945	237	101	338	3.6%	1.5%
Graduate Assists, Teaching	5,203	6,520	132	150	282	2.5%	2.9%
Counselors	3,911	5,260	135	88	223	3.5%	2.3%
Librarians, Professional	3,306	4,036	73	81	154	2.2%	2.4%
Teachers & Instructrs, NEC	2,973	3,611	64	27	91	2.2%	0.9%
Speech Path/Audiologist	1,590	2,123	53	17	70	3.4%	1.1%
Urban & Regional Planners	1,622	1,877	26	27	53	1.6%	1.7%
Psychologists	2,344	2,593	25	23	48	1.1%	1.0%
Nursing Instructors	884	1,111	23	17	40	2.6%	2.0%
Operations Resch Analysts	886	951	7	25	32	0.7%	2.8%
Total	29,297	37,027	775	556	1,331	2.6%	1.9%

Figure 18
Occupational Projections for the Top Ten Jobs Requiring a Doctor's Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Life Sciences Teachers	7,182	8,999	182	208	390	2.5%	2.9%
Postsecond Teachers, NEC	4,395	5,507	111	127	238	2.5%	2.9%
Social Sciences Teachers	2,604	3,262	66	75	141	2.5%	2.9%
Health Specialties Teachers	2,370	2,969	60	68	128	2.5%	2.9%
Englsh, Foreign Lang Teach	2,105	2,637	53	61	114	2.5%	2.9%
Biological Scientists	2,559	3,061	50	18	68	2.0%	0.7%
Art, Drama & Music Teach	1,191	1,492	30	34	64	2.5%	2.9%
Math & Science Teachers	923	1,156	23	27	50	2.5%	2.9%
Engineering Teachers	890	1,114	22	26	48	2.5%	2.9%
Phys Science Teachers, NEC	603	756	15	17	32	2.5%	2.9%
Total	24,822	30,953	612	661	1,273	2.5%	2.7%

jobs. This is the one higher education training category in which job openings due to replacements surpassed those due to growth. This is likely due to the demographics of doctoral degree holders; many will be nearing retirement during the forecast period.

For the most part, jobs requiring a Doctor's degree are teaching positions found in higher education—at colleges and universities *(see Figure 18)*. Nine out of the top ten jobs that require a Ph.D. are teaching jobs. The one exception in the top ten list is biological scientists, many of who are found in government regulatory agencies, engineering and management services, health care, and the chemicals industries.

First Professional Degree

The final training level category is that of first professional degree. This category has the smallest number of annual job openings, with just over 1,000. Over 52 percent of these job openings are due to growth *(see Figure 19)*. These jobs in-

Figure 19
Occupational Projections for the Top Ten Jobs Requiring a Professional Degree
Washington State, 1996 and 2006
Source: *Employment Security Department, LMEA*

Occupational Title	Employment 1996	Employment 2006	Annual Openings Change	Annual Openings Replacement	Annual Openings Total	Annual Rates Change	Annual Rates Replacement
Lawyers	11,552	14,442	289	169	458	2.5%	1.5%
Physicians	8,718	10,004	129	123	252	1.5%	1.4%
Clergy	2,864	3,872	101	56	157	3.5%	2.0%
Dentists	2,636	2,720	8	55	63	0.3%	2.1%
Veterinarians & Vet Inspectors	1,396	1,363	-3	28	28	-0.2%	2.0%
Health Practitioners, NEC	652	765	11	13	24	1.7%	2.0%
Optometrists	702	632	-7	14	14	-1.0%	2.0%
Chiropractors	670	623	-5	13	13	-0.7%	2.0%
Podiatrists	95	79	-2	2	2	-1.7%	2.0%
Total	29,285	34,500	538	473	1,011	1.8%	1.6%

Note: There are only 9 occupations in the OES system requiring professional degrees.

clude lawyers, physicians, clergy, dentists, veterinarians, optometrists, chiropractors, podiatrists, and a catchall health practitioners not elsewhere classified title.

REGIONAL DIFFERENCES

Of course the overall mix of educational requirements vary by region because industrial profiles and occupational demand vary by region. It would be burdensome to examine each region by all training requirement categories, so several of the categories were combined to make three more general levels: jobs requiring no postsecondary education, jobs that require an associate's degree or vocational training, and jobs that require a bachelor's degree or higher. Based on that construct, 61.8 percent of the new jobs created in Washington State through 2006 will require no postsecondary training, only 8.0 percent will require an associate's degree or vocational training, and 30.2 percent will require a bachelor's degree or higher.

No Postsecondary Training

The region with the highest ratio of new jobs that require no postsecondary training is the south central part of the state *(see Figure 20)*. Adams, Benton, Franklin, Grant, Klickitat, and Skamania counties have the highest ratio of such new jobs. The agricultural and food processing industry concentration in this region is the reason.

The areas with the lowest share of new jobs requiring no postsecondary training are, for the most part, the metropolitan counties, with the exception of Benton, Franklin, and Whatcom. Interestingly enough, even though Yakima is an agricultural region, it has a lower ratio of jobs requiring no postsecondary training than does Whatcom County.

Associate's or Vocational

The areas with the highest ratio of new jobs requiring an associate's degree or vocational training are the coastal counties, the southwest counties, and the Lincoln, Whitman, Spokane area *(see Figure 21)*. The areas with the lowest ratios of jobs requiring associate's degrees or vocational training are in the Skagit, Island, San Juan region, King County, and the Klickitat, Benton, Franklin, Grant, and Adams counties region.

Bachelor's or Higher

New jobs requiring a bachelor's degree or higher will be found in high concentrations in King, Snohomish, Kitsap, Thurston, Lincoln, and Whitman counties *(see Figure 22)*. Technology industries, government, and the educational sector will each demand higher educational levels.

Continued page 20

Figure 20
Share of New Jobs Requiring No Postsecondary Education
Washington State, Through 2006
Source: *Employment Security Department, LMEA*

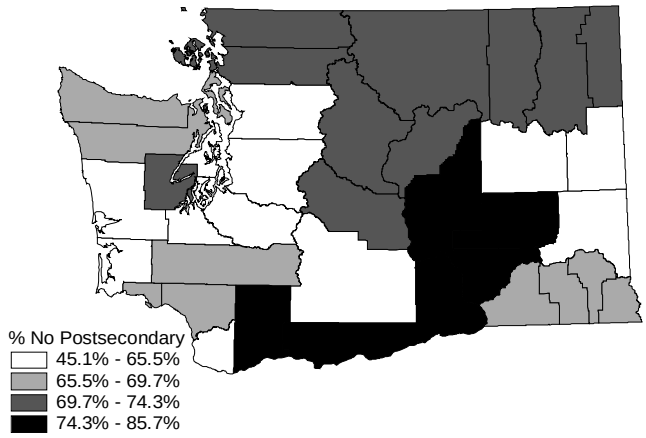


Figure 21
Share of New Jobs Requiring an Assoc. Degree or Voc. Training
Washington State, Through 2006
Source: *Employment Security Department, LMEA*

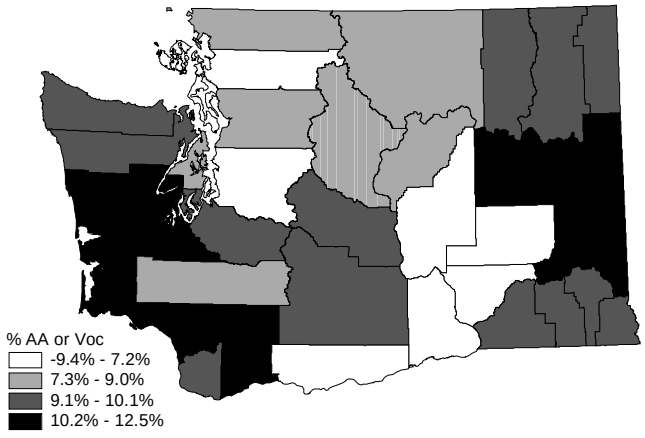
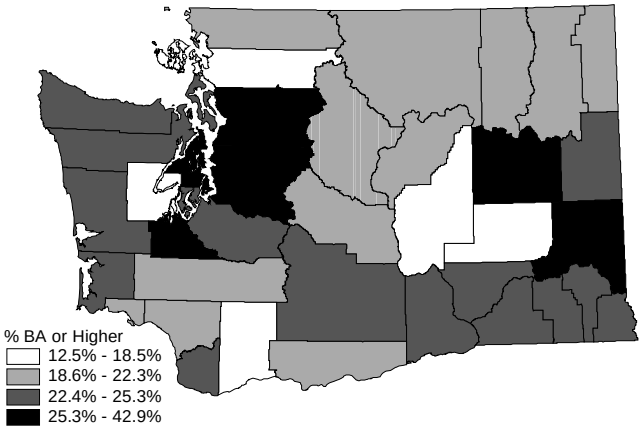


Figure 22
Share of New Jobs Requiring a BA or Higher
Washington State, Through 2006
Source: *Employment Security Department, LMEA*



The areas with the lowest ratios of new jobs requiring at least a bachelor's degree will be in the Skagit, Island, San Juan area; and Mason, Skamania, Grant, and Adams counties.

National Comparisons

Nationwide, 37.3 percent of the new job openings between 1996 and 2006 are expected to be in the *short-term on-the-job training* category. Over 45 percent of the new job openings are forecast to be in the *moderate-term on-the-job training* or less. The first four training categories represent almost 57.8 percent of the total new job openings. Compared to the nation, Washington State will have a higher share of new jobs that require no formal postsecondary training. While a higher share of new job openings nationwide will require a bachelor's degree, or work experience and a bachelor's degree, a greater share of jobs in Washington will require a Master's or a Ph.D.

Epilogue

For the last decade, since the publication of the first *Workforce 2000* report, it has been emphasized that the jobs of tomorrow will demand higher levels of training. Today, 32.5 percent of all existing jobs in Washington require some level of postsecondary training. In comparison, it is projected that 38.2 percent of the new jobs created through 2006 will require postsecondary training. But the inverse is also noteworthy—that is, 61.8 percent of the new jobs created through 2006 will *not* require any formal training beyond high school.

In general, higher paying jobs require the higher levels of training, and this will be just as true in the future. Of course, as with all generalities, there are exceptions and some of those exceptions are highly visible. But it is highly unlikely that just any college dropout can expect to be as prosperous as Bill Gates. It's equally unlikely that someone with only a grade school education will ever acquire the wealth of an Andrew Carnegie. And even though the endemic labor scarcity of the next decade may result in relatively greater remuneration for those in lower-skilled jobs, the old parental prescription will still hold—to get a good job, get a good education.

■ *Robert Wm. Baker*
Senior Economic Analyst

Turnover: *Faster and Faster*

INDUSTRY DEVELOPMENTS

Do you find yourself in a never-ending fight to remember each new name and face that wasn't in your place of employ six months ago? No you are not experiencing early onset dementia. The latest data from the Employment Security Department confirm what you already feel but can't quite quantify… the rate of employment turnover is greater today than it was just three or four years ago.

Turnover…

That's what we like to eat during coffee break.

It's what we do with out pillows on a warm night so we can feel the fleeting coolness on our ears.

It's what we try to make our spouses do to stop them from snoring.

It's what employers' dread when examining their human resource trends.

Turnover—the ubiquitous, expensive process of filling and refilling existing jobs as workers leave for greener pastures, or go back to school, or follow a spouse to a new opportunity, or make like a tree and… well, you get the point.

Measuring Turnover

These turnover data are comprised of three components: same employees, accessions, and separations. Each quarter, employers report employee data to the Employment Security Department for the purposes of administering the Unemployment Insurance system. By examining these employment rolls, the Department is able to ascertain the numbers of same employees, accessions (new employees), and separations at each employer between quarters. With five quarters of data—with the initial quarter as a starting base—the annual turnover can be calculated.

The Rule of Big Ratios

What is first noticeable about these turnover data is that the ratios are large enough that the need for decimal detail is unnecessary *(see Figure 23)*. When it is reported that turnover in agricultural production-crops was 223 percent for the four quarters ending in the second quarter of 1998, the difference between 222.6 percent and 223.4 percent is inconsequential.

The Second Rule of Big Ratios

Also noticeable are some huge changes in select industries. This can be a function of the size of the industry itself. In industries with few employees, small numeric changes in employment can result in large percentage changes. Such is the case with crude petroleum and natural gas, with annual employment of only 20 in 1997. Thus, a numerically modest shift of employment resulted in the change from 46 percent turnover in 1995 to 231 percent turnover in 1998.

You're the Top

So which industries other than agricultural production-crops, and crude petroleum & natural gas, breached those rarified ranks of at least 100 percent turnover? Other agriculture-related industries join this exclusive group. Agricultural production-livestock, and agricultural services are members of this ensemble, as are forestry and fishing, hunting, and trapping. Each of these industries is highly seasonal, with large swings in employment related to the variety of agricultural activities that occur at various times during the year.

Construction sectors also consistently exceed 100 percent turnover. These sectors are highly seasonal with distinct patterns of inactivity in the wet winter months. Many of those employed in the industry are independent contractors. Because of this, the turnover rate is probably well understated. As independent contractors are self-employed, their movements from job to job during the building season are not included in these calculations.

Continued page 22

Figure 23
Turnover Rates by Industry
Washington State
Source: *Employment Security Department, LMEA*

SIC	Industry	% Turnover for Year Ending 2Q98	3Q95
01	Agricultural Prod. - Crops	223	153
02	Agricultural Prod. - Livestock	107	95
07	Agricultural Services	132	115
08	Forestry	195	209
09	Fishing, Hunting, Trapping	159	151
10	Metal Mining	53	57
12	Bituminous Coal & Lignite Mining	9	12
13	Crude Petroleum & Natural Gas	231	46
14	Nonmetallic Mining & Quarrying	69	71
15	Gen. Building Contractors	127	120
16	Gen. Contractors, Exc. Building	116	109
17	Special Trade Contractors	118	114
20	Food and Kindred Products	84	81
22	Textile Mill Products	47	40
23	Apparel & Textile Products	78	76
24	Lumber & Wood Products	60	58
25	Furniture & Fixtures	69	68
26	Paper & Allied Products	26	28
27	Printing & Publishing Industries	56	55
28	Chemicals & Allied Products	37	47
29	Petroleum & Coal Products	19	36
30	Rubber & Misc. Plastics Products	59	65
31	Leather & Leather Products	63	69
32	Stone, Clay, & Glass Products	60	51
33	Primary Metal Industries	27	28
34	Fabricated Metal Products	68	67
35	Machinery, Exc. Electrical	46	50
36	Elect Mach., Eqmt., & Supplies	40	46
37	Transportation Equipment	18	18
38	Professional, Scientific Instruments	27	24
39	Misc. Manufacturing Industries	59	58
40	Railroad Transportation	37	71
41	Local & Interurban Transit	65	68
42	Trucking & Warehousing	90	87
44	Water Transportation	47	56
45	Air Transportation	44	40
46	Pipe Lines, Exc. Natural Gas	14	14
47	Transportation Services	66	61
48	Communications	43	37
49	Utilities & Sanitary Services	31	30
50	Wholesale Trade, Durable Goods	57	55
51	Wholesale Trade, Nondur Goods	77	75
52	Bldg. Mat., Gdn Sup.,Mobil Homes	66	70
53	Retail Trade, Gen. Merchandise	74	70
54	Food Stores	70	73
55	Auto & Recreational Vehicles	87	85
56	Apparel & Accessories Stores	107	99
57	Furniture & Home Furnish Stores	93	90
58	Eating & Drinking Places	120	116
59	Misc. Retail Stores	95	94
60	Banking	34	29
61	Credit Agencies Other Than Banks	63	57
62	Security & Commod Brokers, Dlrs	42	37
63	Insurance Carriers	29	31
64	Insurance Agents	52	47
65	Real Estate	83	87
67	Holding & Other Investment Offices	65	64
70	Hotels & Other Lodging Places	105	102
72	Personal Services	91	93
73	Business Services	134	135
75	Auto Repair, Services, Garages	89	90
76	Misc. Repair Services	75	79
78	Motion Pictures	122	116
79	Amusmnt & Rec,Exc. Motion Picts	121	130
80	Health Services	60	54
81	Legal Services	52	50
82	Educational Services	77	78
83	Social Services	85	82
84	Museums, Art Galleries, & Zoos	67	68
86	Membership Orgs.	82	80
87	Engineering & Management Srvcs	66	54
88	Private Households	81	85
89	Miscellaneous Services	80	75
	Local Gov't.	40	46
	Grand Total	25	23

Dressed and Nourished

Several retail industries surpass the 100 percent turnover threshold too. Apparel and accessory stores recorded a 107 percent rate for the latest period. These establishments have a well-defined hiring pattern that coincides with spring, late summer, and Christmas holiday shopping seasons. Eating and drinking establishments have a classic warm weather hiring pattern; their temporary employment peaks during the late summer county fair period.

Lodged and Entertained

The services division is home to the remaining industries with full replacement turnover rates. Hotels and other lodging places, motion pictures, and amusement and recreation industries all have a stepping stone character—young workers and re-entrants use these industries as portals into the labor force. But the nature of young workers is one of early career exploration, with frequent job changes. This is reflected in the high turnover in these sectors.

Business Services

The last sector with greater than 100 percent turnover was business services. This high rate of turnover was partially because of the inclusion of help supply establishments within this sector. These establishments engage in the placement of both permanent and temporary workers. As such, the placement of individuals into several jobs during the year is quite common. The inclusion of janitorial services within the business services umbrella also helps push up the turnover rate.

Even Lows Can Be High

What constitutes the other end of the turnover spectrum? In the reference period, there was only one industry at the 2-digit standard industrial code (SIC) level whose turnover rate was below 10 percent, Bituminous coal and lignite mining was the industry with the lowest rate of turnover at just 9 percent. High wages, low growth, and remote location translate into high worker tenure in this sector.

Under 20

Within the same period, there were only three other industries at the 2-digit SIC level whose turnover rates were below 20 percent. Pipelines had turnover of only 9 percent.

And guess who had the third lowest turnover rate? None other than that bastion of manufacturing, that exporter deluxe, that leader in multiplicative potency, that cyclical lion, that foundation for all that is Washington, *transportation equipment*. With a rate of just 18 percent, transportation equipment appears to be the manufacturing employment anchor for Washington. Yet low turnover is a quality distinct from the cyclical character of the industry; one that results in thousands of hires and alternately thousands of layoffs during the business cycle. In either case, whatever the industry does, it does slowly relative to other sectors.

The last sector whose turnover rate was below 20 percent was petroleum and coal products manufacturing. This is a relatively modest sector in terms of employment with about 2,100 covered workers in 1997. But with an average covered wage averaging over $59,000 in 1997, surpassing the transportation equipment manufacturing average by $7,000, is there any question as to why these workers stay put?

The Great In-between

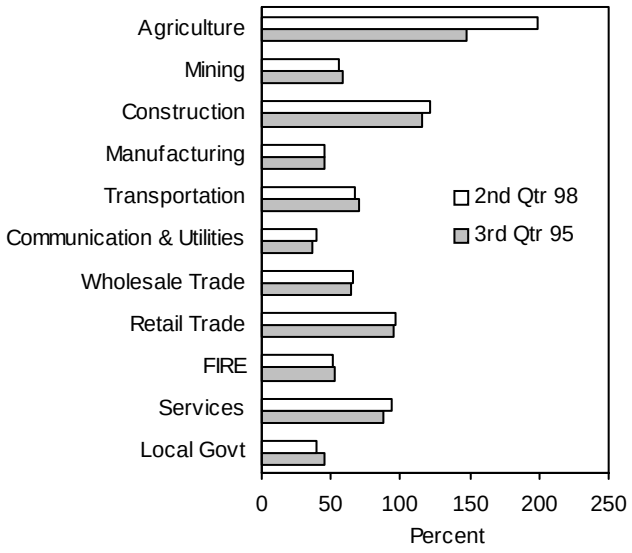
There are a great number of industries between the extremes already mentioned. So the remaining discussion will focus on the differences at the division level.

Transitory Sectors

It is not surprising that agriculture and construction lead in turnover rates *(see Figure 24)*. The employment character of these industries is highly transitory. The agriculture sector

Continued page 24

Figure 24
Turnover Rates by Major Division in Washington State
Year Ending 3rd Qtr 1995 and 2nd Qtr 1998
Source: *Employment Security Department, LMEA*



hires very few permanent workers, relying instead on a steady force of temporary, seasonal help. The construction sector is dominated by independent contractors who move from project to project throughout the building season.

Career Exploration

Retail trade and services fall into the next tier of high turnover sectors. Both these divisions average close to 100 percent turnover. Many workers use these sectors as stepping-stones into the work force. As a result, these sectors are the focus of early career exploration, which involves the frequent changing of jobs.

Greater Pay

Mining, transportation, wholesale trade, and finance, insurance, and real estate constitute the third tier within this particular ranking of industries. These sectors tend to have a greater degree of capitalization than the first two tiers of industry. The greater the degrees of capitalization means greater relative pay for workers, and the less likely that the physical plant will lay idle.

High Capitalization

The lowest turnover is found in manufacturing, communications, utilities, and local government. Manufacturing, communications, and utilities have the highest levels of capitalization per worker, and some of the highest average pay. Communication and utilities can require around-the-clock operation, and manufacturing is rarely just an 8-to-5 operation. Local government can require specialized skills, such as teaching, where they actually set the market. As a result, turnover is relatively low.

Understated

If you think these figures are high, consider that for a particular occupation in a particular industry, they can actually be quite conservative. While the data show that turnover in eating and drinking places is 120 percent, that doesn't mean that at the end of a year all of those working in eating and drinking establishments are brand new to the industry. There will always be a core group of workers in these and other establishments who will be classified as "same workers." So the reality is specific positions or occupations in each of these industries can be the principal source of turnover. At fast food establishments, the managerial and supervisory positions are the relatively solid positions where worker tenure can be quite lengthy; it's the counter worker and cook positions that are the industry's *revolving door*. In these positions, turnover could easily be double or even triple the industry average.

Economy-wide Turnover

One final figure produced by this accession and separation report is the grand total turnover rate. In these reports, all of the private industries covered by unemployment insurance plus local government were reviewed. These data represented 92.7 percent of all covered employment. Within this realm, total turnover for the period ending in the second quarter of 1998 was 25 percent. Turnover for the period ending the third quarter of 1995 was 23 percent. Now this is not an average of the turnover rates at the industry level, but rather a quantification of workers coming and going in these major segments of the overall economy.

Close

So turnover appears to be accelerating. This is oddly consistent with all the other trends at play in today's labor markets. With the advent of low unemployment and slow labor force growth, *job leavers* reach their cyclical peak as a greater share of workers change jobs in search of better opportunities. As a result, employers experience both increased job openings and difficulty in filling jobs. This heightened turnover is just one more ingredient in this new post-industrial, post-service, post-boomer, information economy.

■ *Robert Wm. Baker*
Senior Economic Analyst

An Investigation into Mass Layoff Statistics

UNEMPLOYMENT DEVELOPMENTS

Mass Layoffs are part of the economic picture of every state. In the process of drawing this economic picture one can focus on varied and numerous aspects of these events at different magnifications. An overall sketch that identifies some aspects of this economic reality is outlined here. Some of the questions that will be addressed here are the size and magnitude of these layoffs, the industries and occupations that are affected by such layoffs, reasons identified for the layoffs, and identification of some patterns in these layoffs.

This investigation is part of the ongoing process by the Employment Security Department to further understand the dynamics of unemployment. As this department administers the unemployment insurance system, these mass layoff events are of particular interest in that they are one of the most serious kinds of layoff.

In this investigation various data sources were used. In addition to the mass layoff data, a cross match was made to the Unemployment Insurance Data, Wage Data, Worker Profiling Data, and the Job-Service and Training Projects Data *(see Figure 25)*. Studies such as this can be used to help predict future events and plan for the needs of the individuals and agencies involved. The various stages of this process are identified below.

What is a Mass Layoff?

Of all the layoffs that occur in the state those that are classified as mass layoffs are of special interest here. A mass layoff has to impact 50 or more workers and it must last five consecutive weeks or longer. This distinction is important since it identifies two independently important factors: size and scope.

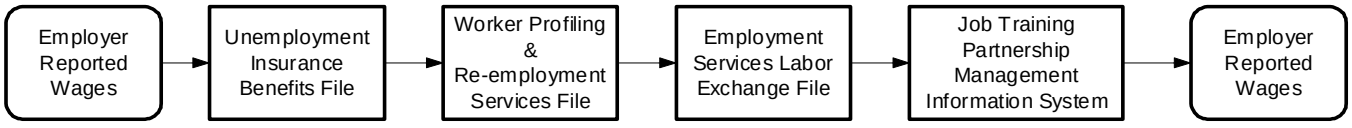
Within the Employment Security Department's system for tracking mass layoffs, critical data are collected first, identifying industries that experience frequent mass layoffs. And secondly, this process identifies the working population affected by this process, their general characteristics, their needs in form of training and support and the state's preparation in meeting such demands. This paper concentrates on the first set of information.

How Often?

The frequency and magnitude of the mass layoff events are reflective of the health and condition of the industries involved. The present investigation studied four consecutive quarters, the period between third quarter of 1995 and second quarter of 1996. During this period the state of Washington experienced over 60 mass layoffs. These mass layoff events generated 9,619 cases of individuals filing initial claims (IC) for unemployment insurance compensation *(see Figure 26)*. While the last quarter of 1995 produced the largest number of IC's the quarter that contained the most numerous mass layoff events was first quarter of 1996. In addition, the fact that several of these industries appeared more frequently than others is evidence of the need for further investigation. The possibility of predicting the mass layoff events in specific industries is an

Continued page 26

Figure 25
Mass Layoff Investigation Process
Source: *Employment Security Department, LMEA*



aspect of interest to economists, social scientists, state and local policy makers, and several state and local social service agencies. The number and magnitude of mass layoffs is significant since they can directly reflect the survival and condition of the industry.

Industries

During the study period, health & professional services and manufacturing sectors produced mass layoffs in every quarter. Other industries such as finance, insurance, and real estate and public administration were not involved in even a single mass layoff. While there were numerous layoffs in the finance, insurance, and real estate industry, none reached the threshold of 50 in a quarter to be identified as a mass layoff event. These differences are partly due to the nature of employment in these industries and the size of the companies. So mass layoffs are, by their very nature, more characteristic in larger companies.

While the number of mass layoffs and their magnitude are indicators of the health of the industry they are not ultimate or absolute in this identification. In this respect there are a variety of other signs such as inventory build-up, i.e. demand for the industry's products, net income or profitability, growth of employment and so forth. These too can help identify industries in trouble. Focusing only on the number of mass layoffs as an indicator of the industry's health is akin to assessing the health of the human body by concentrating on its heart rate alone. While essential for survival, it is not the only area of concern.

Seasonal Industries

As it is, many healthy industries show repeated mass layoffs. This is based on the patterns of need for specific workers at specific periods, be it seasonal work on the farms or a specific type of production in a factory. Agricultural services presents a clear case of seasonal layoffs during the four quarters examined *(see Figure 26)*. Here the mass layoff numbers are consistent, and their occurrence corresponds to the seasons of farm work; they appear only in the spring and fall quarters where crop cycles influence employment patterns.

Light Vs. Heavy

Another interesting phenomena is the rise and fall in the quarterly numbers of light manufacturing compared to heavy manufacturing. While light manufacturing increased in the last quarter of the study, heavy manufacturing showed a decline over the last two quarters. Of all the industries involved in the study period, manufacturing stood out. Both light and heavy

Figure 26
Distribution of Mass Layoff Initial Unemployment Claims by Industry
3rd Qtr 1995 - 2nd Qtr 1996
Source: *Employment Security Department, LMEA*

	Number of Initial Claims					
Industry Groups	**3Q95**	**4Q95**	**1Q96**	**2Q96**	**Total**	**Percent**
Agricultural Services	-	196	-	112	308	3.2%
Mining & Construction	-	641	277	-	918	9.5%
Light Manufacturing Industry	302	931	831	1,135	3,199	33.3%
Heavy Manufacturing Industry	465	878	593	354	2,290	23.8%
Transportation, Communication, etc	439	78	122	-	639	6.6%
Wholesale Trade	143	-	528	428	1,099	11.4%
Finance, Insurance, Real Estate	-	-	-	-	-	0.0%
Personal & Entertainment Services	-	-	-	-	-	0.0%
Health & Professional Services	149	331	347	339	1,166	12.1%
Public Administration	-	-	-	-	-	0.0%
Total	1,498	3,055	2,698	2,368	9,619	100.0%

manufacturing had mass layoff events in every quarter and produced the highest percentage of overall layoffs.

Another industry that shows an interesting mass layoff pattern is health and professional services. While there is a considerable difference between the magnitude of the layoffs in the first quarter of 1995 in comparison to other quarters, they still produce a constant percentage of the total layoffs in each quarter.

Reasons

During the four quarters of the study period, ten different reasons were identified for the mass layoff events. Some of these reasons such as *reorganization* and *seasonal* appeared in every quarter, while *weather related* layoffs and *bankruptcy* were only seen once in a while. The percentages of each layoff reason in the four quarters are presented in *Figure 27* while the proportion of initial claims and frequency of events are presented in *Figure 28.*

The weather related reasons, as expected, are unpredictable but layoff reasons such as *reorganization* (17 events) and *seasonal* (21 events) appeared every quarter and even several times within a quarter. These frequent layoff reasons also constitute the highest percentage of the layoffs at 35 percent and 26 percent respectively while *bankruptcy, natural disaster* and *plant repair* reasons each occurred once and only formed 1 percent of the total layoffs.

Continued page 28

Figure 27
Proportion of Mass Layoff Initial Unempl. Claims by Reason
3rd Qtr 1995 - 2nd Qtr 1996
Source: *Employment Security Department, LMEA*

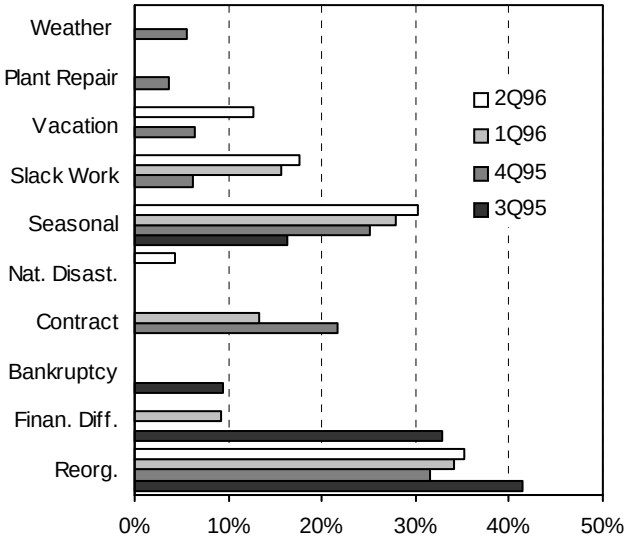


Figure 28
Total Mass Layoff Initial Unemployment Claims by Reason
3rd Qtr 1995 - 2nd Qtr 1996
Source: *Employment Security Department, LMEA*

Layoff Reasons	Total IC's	Percent	# of Events
Reorganization	3,339	35%	17
Financial Difficulties	739	8%	5
Bankruptcy	143	1%	1
Contract Completed	1,020	11%	9
Natural Disaster	102	1%	1
Seasonal	2,477	26%	21
Slack Work	1,028	11%	10
Vacation	492	5%	3
Plant Repair	110	1%	1
Weather Related	169	2%	1
Total	9,619	100%	69

Figure 29
Distribution of Mass Layoff Initial Unemployment Claims by Occupation
3rd Qtr 1995 - 2nd Qtr 1996
Source: *Employment Security Department, LMEA*

Occupational Grouping	3Q95	4Q95	1Q96	2Q96	Total	Percent
Professional & Technical	511	294	238	230	1,273	17%
Clerical & Sales	302	111	354	147	914	13%
Service Occupations	38	64	73	240	415	6%
Agriculture, Forestry, & Fishing	10	110	22	12	154	2%
Processing	106	371	236	325	1,038	14%
Machine Trades	92	332	233	224	881	12%
Benchwork	35	51	67	28	181	2%
Structural Work	88	750	270	153	1,261	17%
Miscellaneous	215	353	257	363	1,188	16%
Total	1,397	2,436	1,750	1,722	7,305	100%

Occupations

Investigation was also done on the types of occupations involved in mass layoffs. It is interesting that no major occupational category is spared from mass layoffs *(see Figure 29)*. All nine major groups are represented. Yet the magnitude of each category varies in the different quarters. Structural work occupations had moderate representation except for the last quarter of 1995, which brought the years' total to one of the highest occupations experiencing mass layoffs. Occupations such as benchwork formed a consistent part of the mass layoffs, although rather small in magnitude, while 'clerical and sales' indicated more of a seasonal pattern. Another interesting finding is the relatively high number of 'professional and technical' people impacted by mass layoffs. This was due to the layoffs in aerospace specifically in the third quarter of 1995.

The next installment on the mass layoff data will focus more specifically on the characteristics of the individuals involved in these layoffs and a further evaluation of the nature of unemployment and the unemployment insurance use when layoffs involve large numbers of individuals at once.

■ *Mehrnaz Jamzadeh*
Research Investigator

Index

May 1998 to Feb. 1999