

WASHINGTON STATE LABOR MARKET AND ECONOMIC REPORT

2006

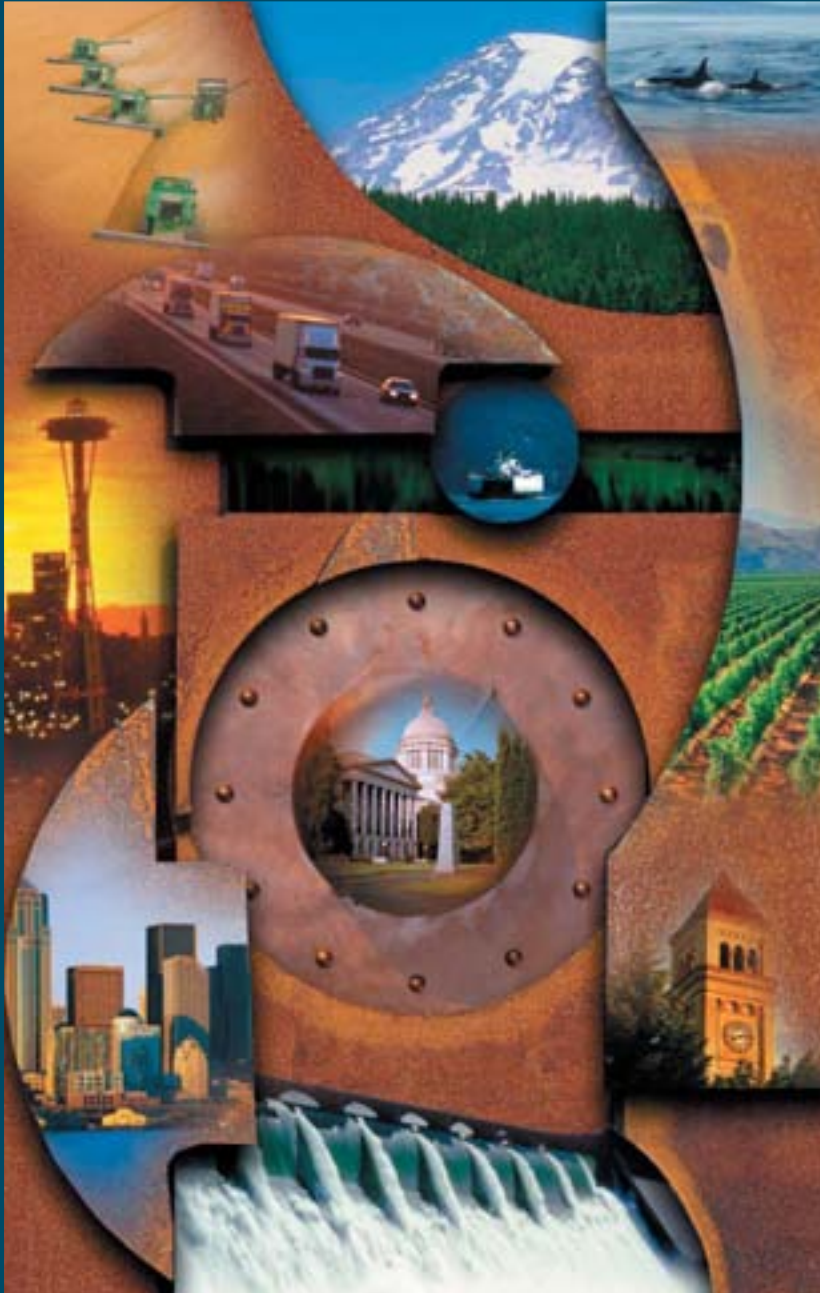


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Security
Department**
WASHINGTON STATE

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2006 Washington State Labor Market and Economic Report

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This report can be viewed and downloaded on the Internet at www.workforceexplorer.com. Further analysis and detailed statistics are available through the Employment Security Department upon request. For more information, including to request copies of this report in alternate formats, please call (360) 438-4800 or the Labor Market Information Center at 1-800-215-1617.

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2006 Washington State Labor Market Fast Facts

Labor Force and Unemployment, Washington, 1980-2006

Year	Labor Force	Employment	Unemployment	Unemployment Rate
1980	1,972,400	1,815,700	156,700	7.9%
1985	2,102,300	1,926,800	175,500	8.3%
1990	2,537,000	2,406,400	130,600	5.1%
1995	2,812,600	2,636,000	176,600	6.3%
2000	3,050,100	2,898,700	151,400	5.0%
2001	3,052,700	2,863,700	189,000	6.2%
2002	3,110,600	2,882,400	228,200	7.3%
2003	3,159,300	2,925,300	234,000	7.4%
2004	3,224,000	3,022,300	201,700	6.3%
2005	3,292,200	3,109,900	182,300	5.5%
2006	3,339,700	3,171,300	168,500	5.0%

Source: Washington State Employment Security Department, Labor Market and Economic Analysis (LMEA), U.S. Bureau of Labor Statistics (BLS), and Local Area Unemployment Statistics (LAUS).

Note: Not seasonally adjusted. November 2006 and December 2006 are estimated.

Labor Force and Unemployment, Washington Metro Areas, 2006

Metro Area	Labor Force	Employment	Unemployment	Unemployment Rate
Washington State	3,339,700	3,171,300	168,500	5.0%
Bellingham MSA	104,400	99,800	4,600	4.4%
Bremerton MSA	122,600	116,700	5,900	4.8%
Clark County	202,200	190,700	11,500	5.7%
Olympia MSA	124,200	118,600	5,600	4.5%
Richland-Kennewick-Pasco MSA	113,900	107,200	6,700	5.9%
Seattle-Bellevue-Everett*	1,409,400	1,351,200	58,200	4.1%
Spokane MSA	229,600	218,100	11,500	5.0%
Tacoma*	376,200	356,700	19,500	5.2%
Wenatchee MSA	60,200	57,100	3,100	5.1%
Yakima MSA	118,800	110,300	8,500	7.2%

Source: Washington State Employment Security Department, Labor Market and Economic Analysis (LMEA), U.S. Bureau of Labor Statistics (BLS), and Local Area Unemployment Statistics (LAUS)

* Metropolitan Division

Note: Not seasonally adjusted. November 2006 and December 2006 are estimated.

Projected Growth Rates, Washington, 2004-2014

Annual Average Employment Growth

Industry	2005Q2-2007Q2	2004-2009	2009-2014
Total	2.0%	1.9%	1.2%
Construction	2.9%	2.6%	1.2%
Manufacturing	2.6%	1.9%	-0.2%
Wholesale Trade	1.3%	1.2%	1.0%
Retail Trade	1.7%	1.6%	0.5%
Transportation, Warehousing and Utilities	1.2%	1.6%	1.3%
Information	2.6%	2.5%	2.4%
Financial Activities	1.0%	1.2%	0.7%
Professional and Business Services	3.3%	3.6%	2.2%
Education and Health Services	2.1%	2.2%	1.4%
Leisure and Hospitality	2.0%	1.8%	1.1%
Government	1.3%	1.1%	1.3%

Source: Washington State Employment Security Department, Labor Market and Economic Analysis (LMEA), and Industry Projections.

Covered Employment, Firms, and Wages by Industry, Washington, 2006Q1

Major Industry Division	Firms	Total Annual Wages (in \$\$billions)	Average Employment	Average Annual Wage
Total	185,170	\$119.5	2,758,666	\$43,311
Government (including public education)	2,032	\$22.0	505,762	\$43,514
Retail Trade	14,264	\$8.8	306,214	\$28,758
Health Care and Social Assistance	13,172	\$10.4	283,559	\$36,529
Manufacturing	7,146	\$16.8	274,495	\$61,263
Accommodation and Food Services	11,803	\$3.2	212,922	\$15,137
Construction	23,203	\$7.0	167,075	\$42,190
Professional, Scientific, and Technical Services	15,716	\$8.7	139,540	\$62,251
Wholesale Trade	12,305	\$7.1	121,246	\$58,167
Other Services	45,244	\$2.5	109,672	\$22,684
Finance and Insurance	5,753	\$8.0	103,728	\$76,843
Information	2,373	\$7.7	94,158	\$81,796

Source: Washington State Employment Security Department, Labor Market and Economic Analysis (LMEA), and Quarterly Census of Employment and Wages (QCEW).

Note: * Wages for 2006 are annualized based on 2006Q1 wages

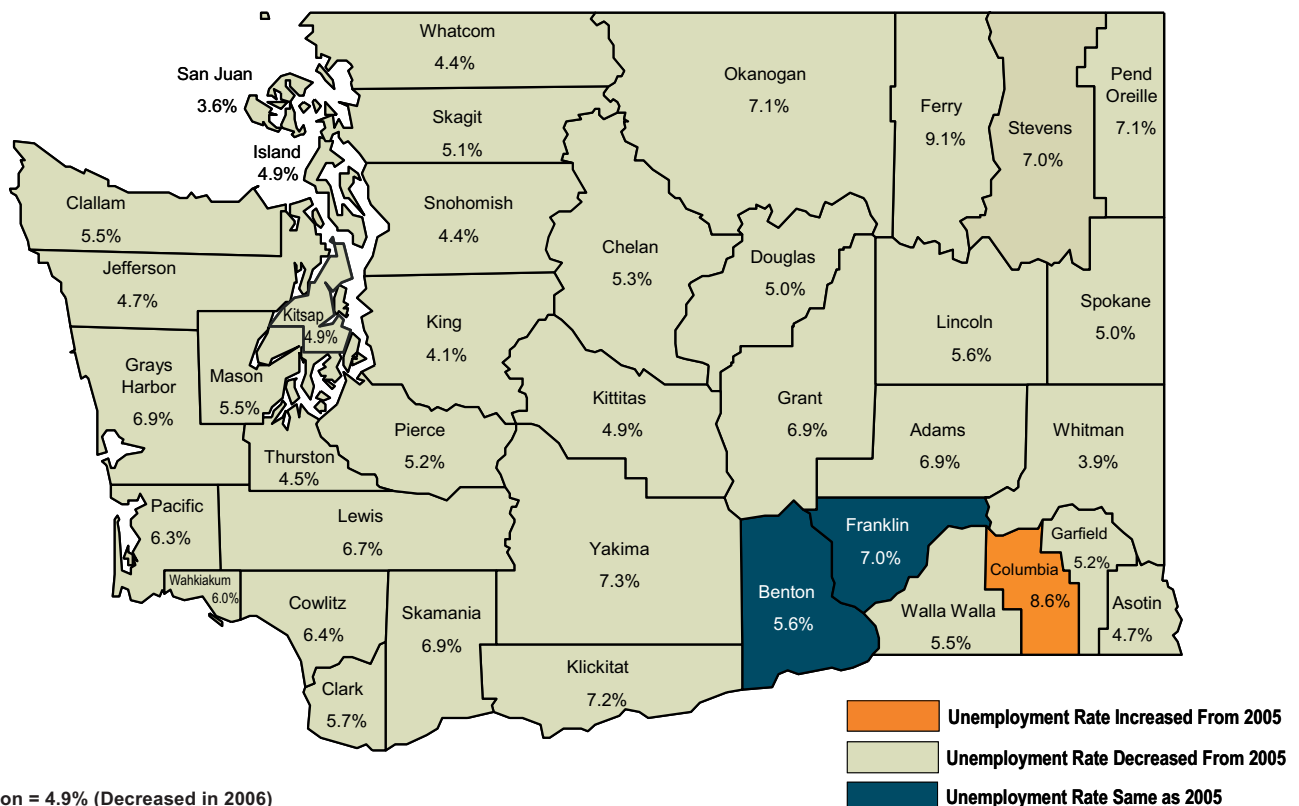
Average Monthly Unemployment Insurance Claims by Occupation Groups, Washington, 2005-2006

Occupation Groups	Beneficiaries Oct. 2005 - Sept. 2006	Estimated Employment 2005Q2*
Total	254,941	3,190,178
Office and Administrative Support	27,214	471,304
Sales and Related	17,821	326,530
Food Preparation and Serving Related	11,096	242,411
Transportation and Material Moving	22,839	221,681
Construction and Extraction	43,274	206,351
Education, Training, and Library	4,033	193,776
Production	26,553	170,820
Business and Financial Operations	6,425	147,144
Healthcare Practitioners and Technical	3,207	138,479
Personal Care and Service	4,549	128,372
Building and Grounds Cleaning and Maintenance	6,175	127,286
Installation, Maintenance, and Repair	11,135	123,172
Management	24,722	110,073
Computer and Mathematical	5,522	106,733
Farming, Fishing, and Forestry	19,559	80,054
Architecture and Engineering	3,513	79,503
Healthcare Support	5,122	72,898
Arts, Design, Entertainment, Sports, and Media	3,422	59,564
Protective Service	3,674	55,379
Community and Social Services	1,778	52,511
Life, Physical, and Social Science	2,013	48,587
Legal	1,295	27,550

Source: Washington State Employment Security Department, Labor Market and Economic Analysis (LMEA), U.S. Bureau of Labor Statistics (BLS), and Local Area Unemployment Statistics (LAUS)

* Data come from Occupational Projections

2006 Unemployment Rates by County (Year-to-Date Averages as of September) Not Seasonally Adjusted



Washington = 4.9% (Decreased in 2006)
 United States = 4.7% (Decreased in 2006)
 Seasonally Adjusted

* November 2006 and December 2006 are estimated.

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Washington State Labor Market and Economic Report

Executive Summary

The Year in Review: U.S.

Rising interest rates, escalating oil prices and a bursting of the housing bubble dominated the news in 2006. The Federal Reserve continued on its tightening path to eradicate inflation, but core price pressures continued to mount during the year. The housing bubble finally burst, but most economists remain optimistic that a soft landing is in sight. Economists are hoping that the Fed will not need to raise its key interest rate further in 2007 – and that core inflation pressures will abate. As consumer spending and income grow in tandem, employment growth should grow moderately, although the unemployment rate could increase.

The Year in Review: Washington

2006 was a pretty good year for Washington state employment growth. Construction, manufacturing, and professional and business services posted healthy gains during the year. Job growth in these higher-than-average wage industry sectors helped the housing sector and the retail industry even after interest rates started rising. On the whole, Washington employment growth surpassed the nation. Thanks to the aerospace industry, manufacturing employment is growing locally though it is not growing nationally.

Seasonal, Structural, and Cyclical Employment

Most movements in employment (and unemployment) can be categorized as due to seasonal, cyclical, or structural factors. Being able to identify industries that are influenced by these factors allows us to understand and anticipate unemployment issues. The seasonal industry list is primarily filled out with education, agriculture, and recreation/accommodation industries. Technology-related industries such as computer, software, and telecommunication industries showed the strongest structural tendencies. Finance-related, aerospace, and several goods-manufacturing industries stood out as being most cyclically influenced.

Unemployment and its Dimensions

Washington has experienced a declining unemployment rate along with a growing labor force in each of the last three years. More people have been looking for work each year and a higher percentage of them are finding it. This

has been good news for a state economy that lagged the nation in recovering jobs after the 2001 recession. Trends generally improved for the unemployed in 2006. The numbers of discouraged workers declined, unemployment insurance exhaustions fell, and there were fewer long-term unemployment insurance beneficiaries.

Demographics of the Labor Force

In recent years, Washington's labor force has become proportionately older, more ethnically diverse, and more female. The first two trends are expected to continue, but with female participation rates approaching that of men, gender trends should moderate. In 2006, unemployment insurance (UI) beneficiaries tended to be white, male, and with lower levels of educational attainment.

Occupational Outlook

Industry shares are not projected to change dramatically. Professional business services and information should have the largest relative gain in employment shares. Unlike the national forecast, which calls for a slight decrease in industry employment shares for information and construction sectors, statewide employment shares for these sectors are expected to increase. We also expect a smaller drop in the manufacturing employment share for the state than nationwide.

Wages and Benefits

Wages, per capita personal income, and household income have all followed the same trend over the past decade. All increased at a good clip during the last half of the 1990s, and all have stagnated or declined since the onset of the 2001 recession. The strong employment growth during the recovery has not translated into wage or income increases. The average annual wage after adjusting for inflation, has essentially been unchanged since 1999. Per capita income peaked in 2000, and has gone from 7 percent above the U.S. average to only 3 percent higher.

Chapter One - The Year in Review: U.S.

The Year in Review: United States

Oil prices, interest rates, and home price appreciation dominated the news in 2005 and 2006 as economists and policymakers worried how rising interest rates and increasing oil prices would affect the pattern of economic activity. Going into the third quarter of 2005, the U.S. economy was strong despite rising energy prices – until Hurricane Katrina hit in late August, quickly followed by hurricanes Rita and Wilma. At the same time, the Federal Reserve was concerned that escalating price hikes would lead to a rapidly worsening inflation environment. In the meantime, some homeowners (at least those who refinanced and cashed out equity) felt like they won the lottery as home price appreciation skyrocketed quarter after quarter. Even then-Fed chairman Alan Greenspan admitted to a little “froth” in the housing market. By tightening monetary policy (raising interest rates), Fed officials knew that they would reduce housing demand and pierce the house price balloon even though the intent was only to quell inflationary pressures.

We will first consider how changing oil prices affected the economy and then discuss the impact of rising interest rates on the housing market as well as the rest of the economy over the past year (fourth quarter of 2005 through the third quarter of 2006).

Oil Prices

It is an understatement to say that crude oil prices fluctuate dramatically. Prices doubled between January and December 1979. In March 1986, crude oil prices were roughly one-third the level they had been just four months prior! Average crude oil spot prices can spike or plunge

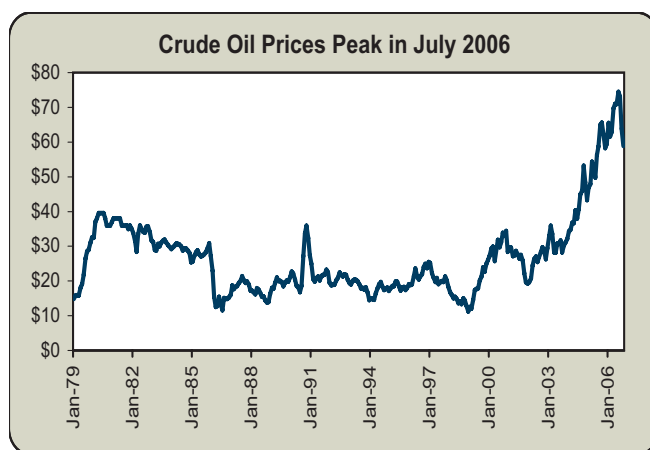


in any given month. But we don't need to look back 20 or 30 years to find sharp increases or declines in the price of oil. Between early 2004 and mid-2005, oil prices doubled.

In the more recent cycle, crude oil prices had reached a low point at the end of 2001, roughly coinciding with the end of the U.S. recession. As the economy began to recover from the recession and expand at a rapid clip,

oil demand also increased. As typically happens during an economic expansion, crude oil prices were bid up. Economies around the world, including giants such as China and India, saw healthy economic growth. In turn, this increased their demand for oil and contributed to the rising energy price environment.

Figure 1.1
West Texas Intermediate Spot Price, \$/Barrel
Monthly Average
Source: Haver Analytics, *Wall Street Journal*



At the same time that economic conditions were strong, geopolitical concerns, such as the war with Iraq and saber rattling with Iran and North Korea, caused greater speculation in the commodities market and oil prices increased. Speculators fueled concerns that the supply of oil would decline at the same time that global demand was increasing.

Crude oil prices were already on the rise during the summer of 2005, and they skyrocketed further when Hurricane Katrina hit in late August. Indeed, the 2005 hurricane season had a profound negative impact on energy prices not only because Gulf of Mexico platforms were damaged, but also because refineries were running at less than full capacity. In the week ending August 26, 2005, oil refineries were operating at a 97.1 percent capacity. After the hurricanes (Katrina, Rita, and Wilma), in the week ending September 30, 2005, refinery capacity had declined to 69.8 percent. Crude oil prices temporarily receded in November and December as hurricane threats waned, but geopolitical



Chapter One - The Year in Review: U.S.

concerns (Iran) once again spooked speculators and oil prices went to the races again. To some degree, speculators worried that another devastating hurricane season in 2006 would damage Gulf activity. As it turned out, the 2006 hurricane season was relatively mild in comparison and crude oil prices were able to drop sharply in September after reaching new highs in July.

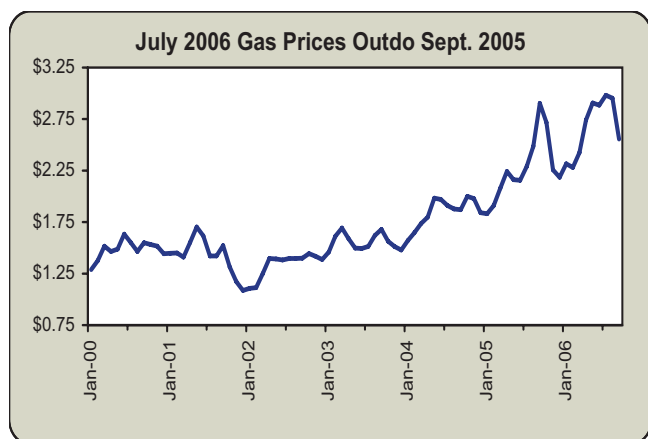


Gasoline prices followed the same pattern as crude oil prices – rising rapidly during the hurricane season and dipping from their highs in September 2006. Record high gasoline prices, in nominal dollars, caused economists and policymakers to predict an economic slowdown. After all, if consumers were spending more and more of their budget on gasoline, they would not be able to buy other goods and services.

Figure 1.2

U.S. Retail Gas Price, \$/Gallon
Monthly Average

Source: Haver Analytics, U.S. Dept. of Energy



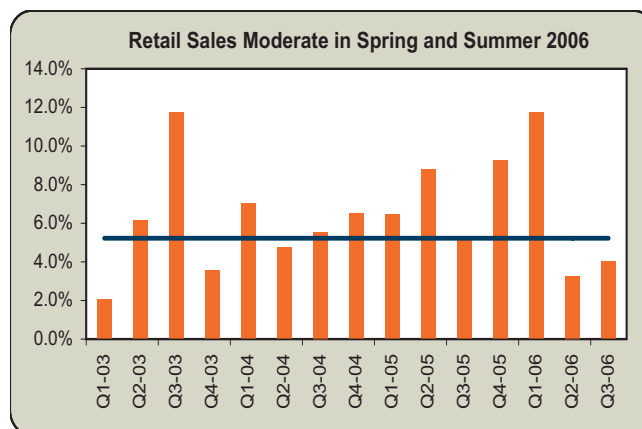
As it turns out, retail sales plunged in the fourth quarter of 2005, but skyrocketed in the first quarter of 2006. Retail sales include gas station purchases, which themselves are affected by prices. Furthermore, fluctuating auto purchases also create extra volatility in retail sales growth. Therefore, retail sales excluding autos and gas stations are often a more reliable measure of underlying demand for retail purchases. Figure 1.3 depicts growth in retail

sales excluding autos and gas stations. Sales moderated in the third quarter, accelerated in the fourth quarter of 2005 as well as the first quarter of 2006, suggesting that rising gasoline prices had no impact on consumer spending. But wait! Retail sales moderated significantly in the second and third quarters of 2006. Growth during this period was below average, relative to the past five years (5.2 percent).

Most likely, consumers took a little time to adjust their spending. Higher oil prices may very well have reduced retail sales growth in 2006, it just took a bit longer to register.

Figure 1.3

Retail Sales Excluding Autos and Gas Stations
Seasonally Adjusted, Quarterly % Change, Annual Rate
Source: Haver Analytics, U.S. Census Bureau



Line represents average quarterly growth from 2001:Q1 - 2006:Q3

In early 2006, many economists predicted that crude oil prices would soon fall back to \$40-\$50 per barrel during the year. In fact, prices averaged \$63.35/barrel in the first quarter of 2006 and more than \$70 per barrel in the second and third quarters of the year. In October 2006, crude oil prices finally fell to \$58.88/barrel, the lowest monthly average in a year. At their October 2006 meeting, OPEC decided that they would try to hold production in order to maintain prices near \$60 per barrel. The declines in crude oil prices reflect reduced oil demand, stemming from slower economic growth, as well as a smaller speculative premium now that the hurricane season ended.

Retail gasoline prices declined to \$2.25 per gallon in October. With a peak gas price at \$2.98 per gallon in July, the nearly \$0.75 decline should benefit consumers going into the all-important holiday season. And should crude oil prices remain stable near \$60/barrel, we could see some

stability in pump prices too. This would alleviate some household budget pressures and consumers would have more discretionary income to spend in 2007. Many forecasters are indeed predicting \$60/barrel oil in 2007.

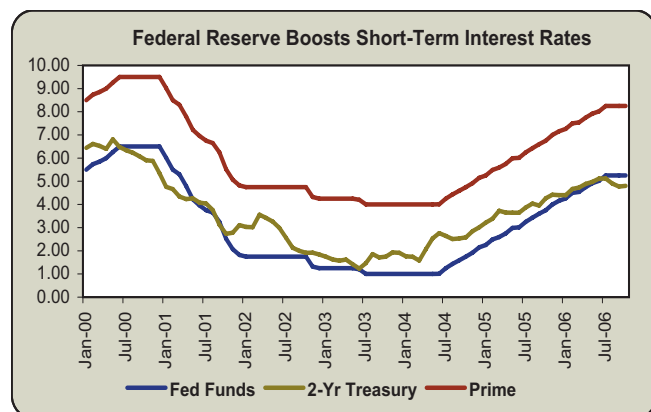
Interest Rates

Interest rates were generally rising in 2005 and 2006, although not all interest rates rose in tandem. The Federal Reserve targets the federal funds rate, which serves as a benchmark for rates on short-term securities. This target rate was at one percent in 2004, a 40-year low. Economists around the world, in business and in academia, have debated whether or not the Fed left this target rate too low for too long. Whether they did or not is not the focus of debate here. The point is that the Fed began to raise the federal funds rate target in 2004 and continued on this path until June 2006.

It is commonly believed that the Federal Reserve determines interest rates. But in fact, the Federal Reserve can only control the federal funds rate target – not the term structure of interest rates (yields on short-, medium-, and long-term securities). While the Fed was trying to encourage a rising interest rate environment, not all market rates followed suit. Short-term rates did indeed rise in tandem with the Fed funds rate target. The 2-year Treasury yield increased in lockstep with the federal funds rate, as did the prime rate. Banks administer the prime rate, changing this rate each time the Federal Reserve announces a change in the federal funds rate.

Figure 1.4

Interest Rates: Federal Funds Rate Target, 2-Year Treasury Yield, U.S. Bank Prime Rate Average, Percent
Source: Haver Analytics, Federal Reserve Board



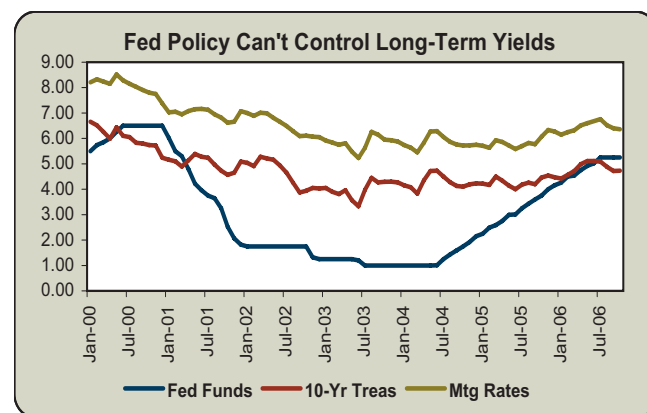
Long-term rates did not rise in step with the federal funds rate. In 2005, then Federal Reserve chairman Alan Greenspan called it a “conundrum.” While economists and policymakers



don't always see eye to eye, many agree that long-term yields were held down by strong foreign demand for U.S. bonds. Foreign economies, particularly in Southeast Asia, were buying large quantities of long-term (10-year and 30-year) U.S. Treasury securities. The strong demand for our long-term securities dampened their yields.

Figure 1.5

Interest Rates: Federal Funds Rate Target, 10-Year Treasury Yield, 30-Year FHLMC Contract Rate on Conventional Mortgages, Percent
Source: Haver Analytics, Federal Reserve Board



Low interest rates may be good for consumers and businesses, although excessively low rates during an economic expansion can lead to inflationary pressures. But while the Fed was able to control short-term rates, they could not control long-term rates and the insatiable demand for U.S. securities by foreign investors. One can say that foreign investors exacerbated the U.S. housing bubble.

The yield on 10-year Treasury notes is used as a benchmark rate for conventional 30-year mortgage rates. As long as 10-year Treasury yields remained low, then 30-year mortgage loan rates remained low. Mortgage rates on 30-year fixed rate loans averaged 6 percent (+/- 0.25 percent) from mid-2002 through the first few months of 2006. It is no secret that these low mortgage rates sparked a roaring housing boom that peaked in early 2006.

Chapter One - The Year in Review: U.S.

Housing activity surged and homes appreciated at double digit rates on a year-over-year basis for eight straight quarters. The U.S. last experienced these appreciation rates in the late 1970s when inflation was running at double digit rates. This time (from 2004 to 2006) the double-digit increase in home prices was accompanied by a relatively low inflation environment. In the second and third quarters of 2006, housing starts and home sales declined from their highs and home prices began to show year-over-year declines in some regions of the country.

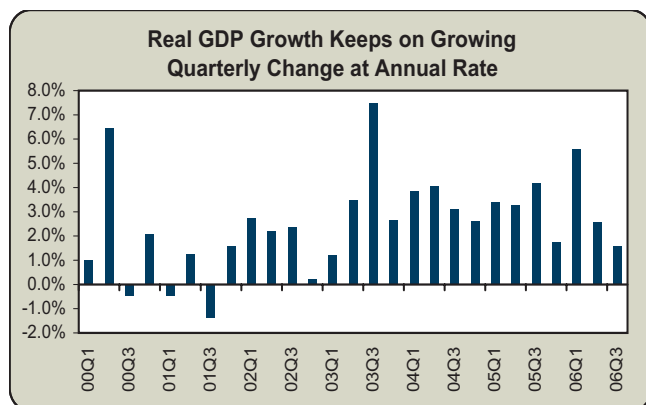
It is important to remember that housing activity is extremely local, and home price appreciation – or depreciation – depends largely on local area economic activity. But looking at the U.S. economy as a whole, there is no question that home prices have stopped increasing at double-digit rates. Home price stagnation, rather than appreciation, may not be far behind.

The 2007 Outlook

Real (inflation-adjusted) GDP growth averaged 2.5 percent per quarter between the first quarter of 2000 through the third quarter of 2006. This period includes a recession, a recovery, and economic expansion. From the fourth quarter of 2005 through the third quarter of 2006, real GDP expanded at an average rate of 2.9 percent per quarter, a slower pace from the previous year when real GDP grew 3.4 percent.

Figure 1.6

Real GDP Growth, Seasonally Adjusted Annual Rate
Source: Haver Analytics, U.S. Bureau of Economic Analysis



Many economists have predicted that economic activity in 2007 will be dampened even further due to a decline in housing-related activities. According to Federal Reserve

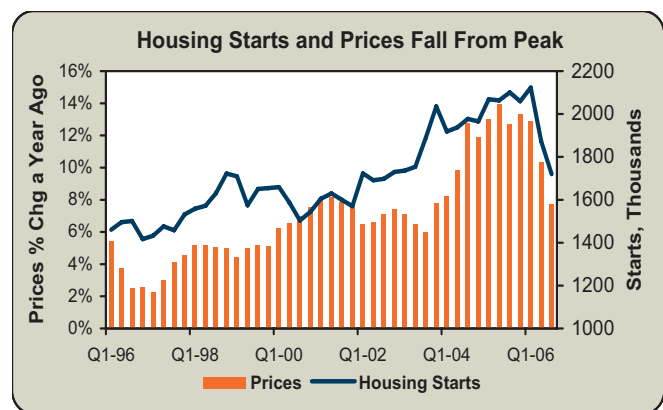
chairman Ben Bernanke (and other forecasters too), the decline in the housing market is predicted to shave one percentage point off GDP growth.

For instance, as new home sales decline so will residential investment expenditures. In addition, consumers will purchase fewer housing-related durable goods such as appliances, home furnishings, and furniture. Furthermore, higher interest rates coupled with lackluster home price appreciation will probably hinder cash-out refinancing. This means homeowners will have to rely on income growth rather than home equity loans to finance discretionary consumer purchases. But even with a declining housing sector, the U.S. may still achieve its desired “soft landing” scenario, because other sectors of the economy will take up the slack.

Figure 1.7

House Price Index (Yearly Change) and Housing Starts Seasonally Adjusted Annual Rate

Source: Haver Analytics, Office of Federal Housing Enterprise Oversight, U.S. Census Bureau



Even though residential investment spending is likely to decline in 2007, nonresidential investment spending may continue to grow. *Figure 1.8* reveals that capital spending on structures often begins to accelerate as residential investment spending declines. Furthermore, capital spending on equipment and software was also growing at a healthy clip in 2006. Forecasters are looking for real GDP growth to run at about a 2.5 percent rate in 2007, lower than the 2006 rate, but not a recession or a crash landing.

Chapter One - The Year in Review: U.S.

Figure 1.8

Real Investment Growth: Structures, Equipment, and Software, Residential, Year-over-Year Percent Change
 Source: Haver Analytics, U.S. Bureau of Economic Analysis

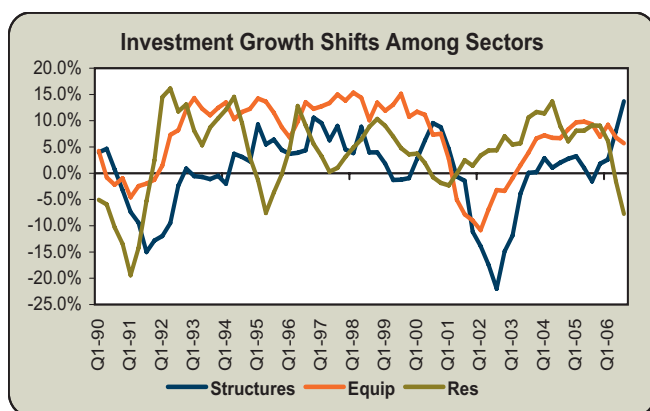
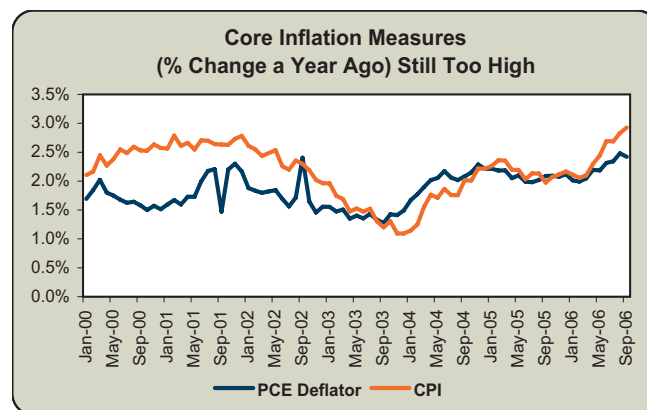


Figure 1.9

Core Inflation Rate: Consumer Price Index and Personal Consumption Expenditure Deflator Excluding Food and Energy
 Source: Haver Analytics, U.S. Bureau of Economic Analysis, Bureau of Labor Statistics



The Fed and Inflation

The Federal Reserve engineered a rising rate environment in order to stave off inflationary expectations, and to reduce the measured core inflation rate. The Fed's rate hikes



through June, coupled with declines in oil prices, and a declining housing market have alleviated inflation fears. Through September 2006, however, core inflation, as measured by both the

consumer price index excluding food and energy prices as well as the personal consumption expenditure (PCE) deflator excluding food and energy prices, remained above 2 percent, the upper end of the Fed's comfort zone.

If core inflation subsides over the next six months, the Federal Reserve will be able to reduce their fed funds rate target. Some economists have predicted that the Fed's next move will be down instead of up. A soft landing scenario, coupled with stable to falling oil prices, continued moderation in the housing market, could very well set the stage for a moderating core inflation rate. Nonetheless, the key lies in the core inflation rate, and if it remains stubbornly high, the Fed will not reduce rates. And if they are forced to raise the federal funds rate target yet again in 2007, the soft landing might turn into a hard landing instead.

The Livingston Survey

The Philadelphia Federal Reserve Bank's Livingston Survey is the oldest continuous survey of economists' expectations, begun in 1946 by Joseph A. Livingston. Economists from industry, government, banking, and academia are surveyed twice a year and results are published in June and December. The results in the table below are from the December 2006 Survey.

	2007	2008
Real GDP growth	2.6%	3.0%
CPI	2.1%	2.3%
Unemployment rate	4.8%	4.9%
Prime rate *	8.25%	8.00%
10-Year Treasury *	5.05%	5.05%

* These rates are for December, not the entire year.

Chapter Two - The Year in Review: Washington

The Year in Review: Washington

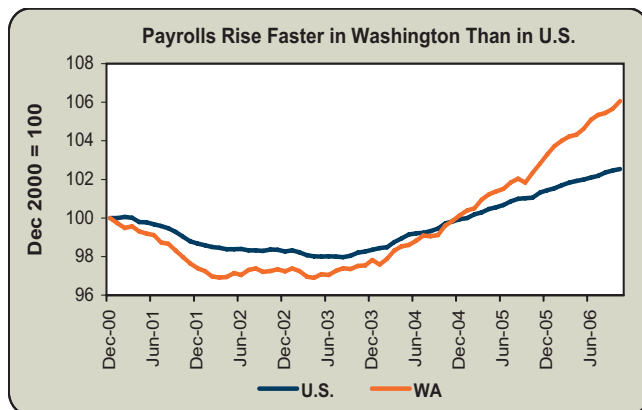
Over the past year, the state's employment situation showed relatively healthy growth. Each month, we were able to say that the state's employment machine was stronger than the nation's. Was the state not affected by higher oil prices and rising interest rates? Was the state not destined to experience a decline in housing just like the rest of the country? In fact, higher gas pump prices did negatively impact Washington residents, and rising interest rates often dampen overall spending. Rising mortgage rates coupled with overpriced homes eventually set the stage for a housing downturn. All in all, one has to conclude that the total impact of these positive and negative factors did not play out identically in Washington state and in the U.S. This is due to the fact that local economic activity ultimately determines the extent to which rising energy prices and interest rates will have on the local economy. National and global issues may matter, but the industry structure of the region helps determine its economic path.

Figure 2.1

Index of U.S. and Washington Payrolls

Index: December 2000 = 100

Source: Haver Analytics, U.S. Bureau of Labor Statistics, Employment Security Department/LMEA



Let's Begin With the Advantages and Disadvantages of Rising Oil Prices

There is no question that rising oil prices – and rising gasoline prices – put a dent in household budgets and hamper consumer spending on other goods and services (than energy). Anyone who had to fill up their vehicle's gas tank over the past year saw their weekly bill rise month after month until July, when gasoline prices peaked. It is well established that the weekly gas fill-up

can take a big bite out of consumers' discretionary income when gas prices rise because demand for gasoline is relatively price inelastic. After all, consumers don't tend to have a lot of options vis-à-vis their mode of transportation in the short run. In some cases, consumers can stop driving and start taking the bus or train – if they live and work in large urban centers where public transportation is readily available. Often, public transportation is less available to workers commuting to and from long distances (e.g. a Renton Boeing worker who lives in Tacoma). Some workers switch to less convenient, but also less costly, car pools. But on the whole, many workers cannot make too many changes in their daily commute and the gas bill simply takes a larger chunk of the household budget.

Given fixed budgets, more money spent at the gas pump means less spending at the mall. As seen in the previous chapter, U.S. retail sales moderated in 2006. But retail sales did not decline as sharply as most economists predicted because many consumers didn't alter their spending behavior all that much. Some consumers, such as homeowners, took advantage of appreciating home values and low interest rates and refinanced their mortgages to cash out some (or all) of the increased home equity. But all consumers are not homeowners. The U.S. personal saving rate declined as consumers simply saved less rather than curtail their retail purchases. To some extent, it is likely that Washington residents also followed this path: taxable retail sales in the state posted healthy gains in the first half of 2006. (At the time of this publication, retail sales figures were available for only half the year.)

Rising energy costs don't hurt everyone equally. For instance, airlines might not choose to pass the entire increased jet fuel costs to passengers who would choose to fly less and profit margins would be hurt. Taking this a step further, one would expect that the declining profits faced by airline companies would hurt aerospace manufacturers. During a severe economic recession, all firms are likely to reduce



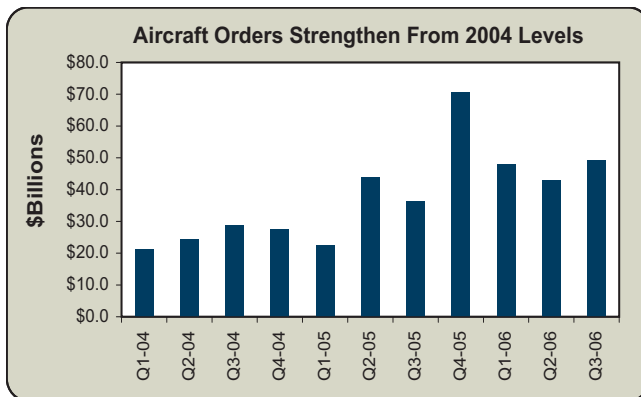
their capital expenditures. But in fact, aircraft are long-lived, and when new planes need to be replaced, airlines don't have a lot of alternatives. Locally, Boeing is undergoing a boom cycle after declining for several years. Moreover,

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the company's strategy to build efficient and relatively small planes (compared with its main competitor) is helping to boost orders. Airline companies across the globe desire aircraft with greater fuel efficiency. Many domestic and foreign airlines are in a position to replace their aging aircraft. And this is helping to boost manufacturing employment locally. A strong manufacturing sector is playing a major role in keeping local conditions healthy despite the fact that rising energy prices would normally be considered a serious adverse factor on consumer spending.

Figure 2.2

Manufacturers' New Orders: Aircraft Level, Billions of dollars
 Source: Haver Analytics, U.S. Census Bureau



Interest Rates and the Housing Market

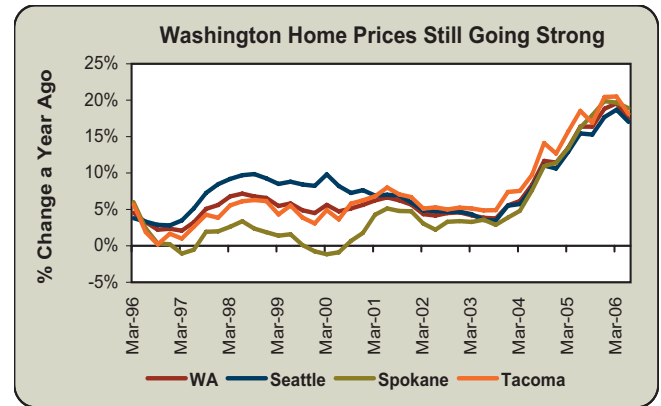
Housing prices skyrocketed in Washington along with the rest of the country. Double-digit gains in home prices were not just limited to urban centers such as Seattle, Tacoma, and Spokane, but also evident in the rest of the state as well. Rising home values are a double-edged sword. Some homeowners cashed in their newfound home equity by refinancing their mortgage loans and taking cash out to spend on other goods and services. Some homeowners decided



that they would rather use the equity in their home to buy bigger homes. As a result, construction activity surged, outpacing the nation's growth rate by a wide margin.

Figure 2.3

House Price Index for Washington and Major Urban Areas Year-over-Year Percent Change
 Source: Haver Analytics, Office of Federal Housing Enterprise Oversight



While rapidly appreciating home prices are generally viewed in a positive light, there are some disadvantages as well. For instance, homeowners who had no intention of tapping into their home equity or selling their homes simply saw property values and (property) taxes increase. The increased home value is not a windfall to one's wealth if you are suddenly faced with rising property taxes. And some homeowners don't realize that if their home is selling at a premium, they will have to spend a premium on their next home. Furthermore, rapid price gains make it more difficult for potential new buyers, who don't have any built-in equity. Either they need to save for a larger down payment or face less than desirable mortgage loan options. In many cases, families with single wage earners cannot afford a home – and two incomes may be required to meet monthly mortgage payments.

As mortgage rates began to rise further in 2006, new buyers were becoming less willing to purchase homes at any price. A sellers' market did not immediately turn into a buyers' market. At first, potential sellers did not want to reduce the prices on their homes. Many potential sellers simply removed their homes from the market if buyers weren't offering their desired price. But not all sellers had options; some were motivated to sell and move and prices eventually softened somewhat. Flippers and speculators were most likely to lose money on homes that they bought at the top of the market. Most homeowners who had resided in their homes for at least a year were still likely to make a profit in 2006.

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The housing market doesn't have to crash in Washington. We are more likely to see a soft landing than a hard one here. Keep in mind that all housing markets are local – and they primarily depend on local economic conditions. Thus, the strong economy in the state could support smaller housing price declines in the state than in the nation. The National Association of Realtors revealed that home sales declined about 11 percent in Washington in the third quarter 2006 relative to the prior year, but home prices still increased during the quarter relative to the third quarter of 2005. For instance, home prices rose 14.6 percent in Seattle-Tacoma-Bellevue, 14.1 percent in Spokane, 6 percent in Kennewick-Richland-Pasco, and were up 2.1 percent in Yakima.

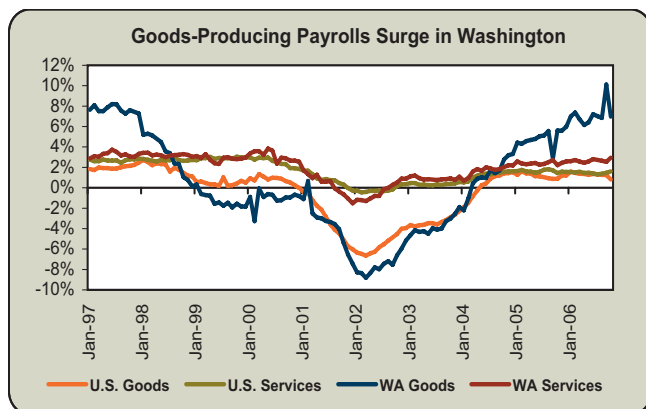
Industry Employment

Over the past 12 months, nonfarm payrolls have posted year-over-year gains each month consistently exceeding 3 percent. This was the strongest job growth since the late 1990s. While many industry sectors posted healthy job gains, increases were not uniform across industries. In Washington, payroll growth was significantly stronger in the goods-producing sector than in the services-providing sector. This is in sharp contrast to the nation, where job growth continues to accelerate in the service sector at the cost of the goods sector.

Figure 2.4

Nonfarm Payroll Growth for Goods-Producing and Service-Providing Industries in the U.S. and Washington Year-over-Year Percent Change

Source: Haver Analytics, U.S. Bureau of Labor Statistics, Employment Security Department/LMEA



Goods-producing employment increased 7.0 percent in October 2006 over the previous year – which was already strong with a 5.6 percent hike. Natural resources which

include mining and logging saw a mere 1.1 percent year-over-year gain in October, but this follows 15 months of solid year-over-year declines. In contrast, construction payrolls jumped 10 percent in October, stronger than a year ago when payrolls had posted an 8.8 percent hike.

Despite the strong year-over-year showing, the rate of growth in this sector has moderated somewhat from the summer months. Oddly enough, construction



employment continued to rise through October even as interest rates rose over the year and housing activity moderated. Construction employment has grown in the U.S. as well, but not by as much as the state.

Manufacturing employment jumped 5.2 percent in October 2006 over the previous year. This was the strongest year-over-year gain since early 1998 and follows several years of declines. There is no question that the aerospace industry accounts for much of the growth. However, gains were strong in other manufacturing sectors as well. For instance, nonmetallic machinery payrolls grew 8.2 percent in October 2006 over the previous year;

fabricated metal payrolls were up 5.9 percent over the previous year; ma-



chinery employment was up 8.7 percent over the previous year; and ship and boat building payrolls rose 5.6 percent. Gains were not as robust in the nondurable goods-manufacturing industries. In total, nondurable goods-manufacturing employment posted a 3 percent gain with food manufacturing up 3.3 percent; petroleum up 2.4 percent; but paper manufacturing declined 0.8 percent.

Yearly employment growth was generally stronger in the goods-producing sector, which accounts for 17 percent of payroll employment, than in the service-providing sector which accounts for 83 percent of employment. But this doesn't mean that all service sector industries posted equal growth over the year. Total service-providing payrolls rose 2.9 percent in October 2006 over the previous year. The largest number of jobs (18,500) was added in the

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professional and business services industry, but with a 5.8 percent year-over-year gain, this was not the fastest growing sector. Information services payrolls grew by 8.2 percent despite the fact that telecommunications payrolls declined 0.4 percent from a year ago. The software industry posted a 12.5 percent gain in payrolls between October 2005 and October 2006.

Appendix 1 shows the twelve-month growth period ending October 2006, by number of jobs and by percent change. Some industries show a large number of jobs added, but a small percent change, while others show the reverse – a small number of jobs with a large percent change. When you see a large number combined with a small percentage change, it means that the industry itself is large.



For instance, 5,200 jobs were added in software publishing (within information services) from October 2005 through October 2006 and this turned into a

whopping 12.5 percent gain over the year. Yet, within the construction industry, heavy and civil engineering payrolls posted a healthy 11.1 percent gain over the year, but only half as many jobs (2,400) were added relative to software publishing.

Appendix 1 also shows how the share of job growth changed within the industry sectors from 2004 through 2006. For instance, the goods-producing industry accounted for 20.9 percent of the job growth in 2004, but 32.1 percent of the job growth in 2006. Manufacturing accounted for 4.7 percent of the job growth in 2004, but 14.2 percent of the job growth in 2005 and 2006. Construction accounted for a healthy percentage of the job growth in each of the three years depicted in the table. Among the service-providing sector, retail trade employment accounted for 12.8 percent of the job growth in 2005, but only 8.9 percent of the growth in 2006. Information services accounted for 2.5 percent of the job growth in 2005, but 7.7 percent of the growth in 2006. *Appendix 1* allows one to compare how much each of the industry sectors (and smaller sub-sectors) contributed to total nonfarm payroll growth.

The State's Unemployment Rate Declined in 2006

The civilian unemployment rate dipped to 4.8 percent in October 2006, a drop of 0.7 percentage points over the previous year's level. This was a result of a 0.4 percent gain in the labor force along with a 1.2 percent hike in employment over the year. These figures are adjusted for seasonal variation, but it is important to keep in mind that the monthly jobless rate can fluctuate several percentage points from one month to the next as the number of Washington residents working or actively seeking work shifts from month to month. Taking the year as a whole (the first 10 months of 2006), the unemployment rate averaged 4.9 percent in 2006. This was the lowest average jobless rate since 1999 when the unemployment rate averaged 4.8 percent in Washington.



Figure 2.5 compares the state's unemployment rate to the nation's unemployment rate as well as the jobless rate for the Seattle area, which includes King and Snohomish counties, and the balance of the state since 2000. These figures are all adjusted for seasonal variation and allow comparison of the unemployment rate fluctuations over the business cycle. This includes an economic peak (roughly 2000), a recession (2001-02), and a subsequent recovery (2003-2006). Seattle's unemployment rate behaves differently from the balance of the state. The jobless rate for the Seattle area is more closely aligned with the nation's unemployment rate, although the Seattle area suffered more during the recession and early recovery between 2001 and 2003. Since the beginning of 2004, the unemployment rate for the Seattle area has been lower than the nation's jobless rate. Since January 2000, the unemployment rate for the balance of Washington (outside the Seattle area), has averaged 1.6 percentage points higher



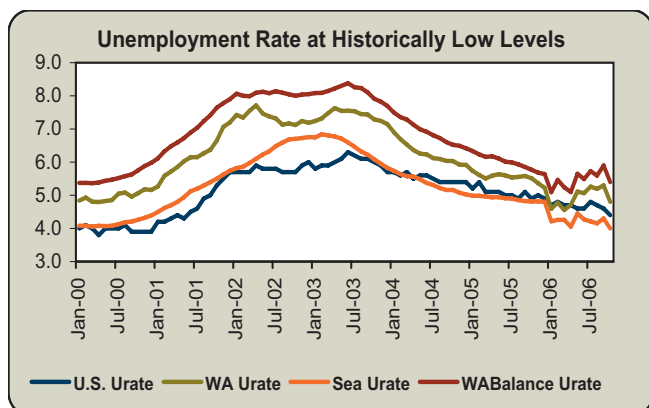
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than the nation. In October 2006, the difference between the nation's unemployment rate (4.4 percent) and the unemployment rate for the balance of Washington (5.4 percent) had narrowed to one percentage point.

The unemployment rate is generally considered a lagging indicator of economic activity. Because the rate is dependent on the number of people in the labor force, that is, those actively seeking employment, as well as the number of workers who are employed, it is best to view this indicator in context. That is, how is the unemployment rate changing over time? Is it increasing or decreasing? Historically, the unemployment rate in Washington state is consistently higher than the jobless rate in the nation. The narrowing differential suggests more improvement has been made in the state over the past year than for the country.

Figure 2.5

Unemployment Rate by Country, State, and Region
Source: Haver Analytics, U.S. Bureau of Labor Statistics



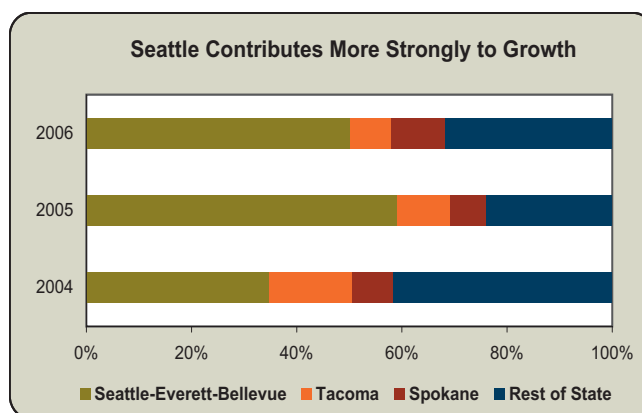
Across the State

Nonfarm payroll employment posted gains across the state although the Seattle-Bellevue-Everett Metropolitan Division, which includes King and Snohomish counties, grew more rapidly than the rest of the state. This was in contrast to previous years (except for 2005) when the rest of the state was growing more rapidly. In the first 10 months of 2006, payrolls in the Seattle area accounted for 50.1 percent of the growth, down from 2005 when Seattle area payroll gains accounted for 59.1 percent of the year's growth. The Tacoma area (Pierce County) moderated its rate of growth, accounting for 7.8 percent of the growth in 2006 compared with 10.1 percent in 2005 and a whopping 15.8 percent in 2004. The Spokane MSA picked up the pace in 2006 accounting for 10.4 percent of the

growth after growing much more slowly than the Tacoma area in 2004 and 2005. The rest of the state accounted for 31.7 percent of the growth in 2006, more than the 2005 rate of 23.9 percent, but not as strong as in 2004. The growing pace of manufacturing activity certainly helps the Seattle area, but growth in construction as well as professional and business services also played a role in boosting Seattle area growth.

Figure 2.6

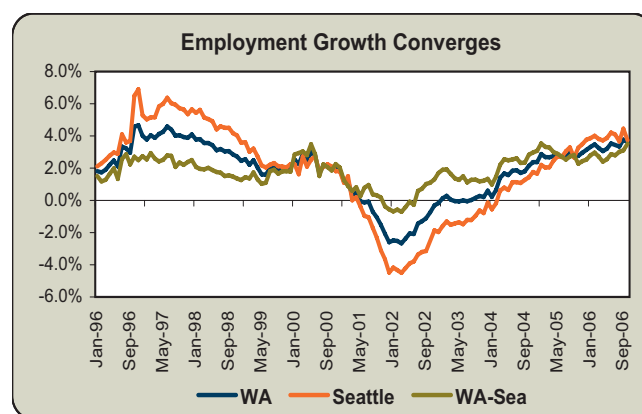
Share of Growth for Urban Areas and Rest of State
Source: Employment Security Department/LMEA



It is worth noting, however, that employment in the Seattle area suffered dramatically more than the rest of the state (including other urban areas such as Tacoma and Spokane) during the 2001 recession and in the subsequent recovery. The Seattle area had a lot further to grow in order to re-attain its previous peak. In contrast, the rest of the state barely lost employment during the recession.

Figure 2.7

Employment Growth for Washington, Seattle Area, and Rest of State (WA-Sea)
Source: Employment Security Department/LMEA



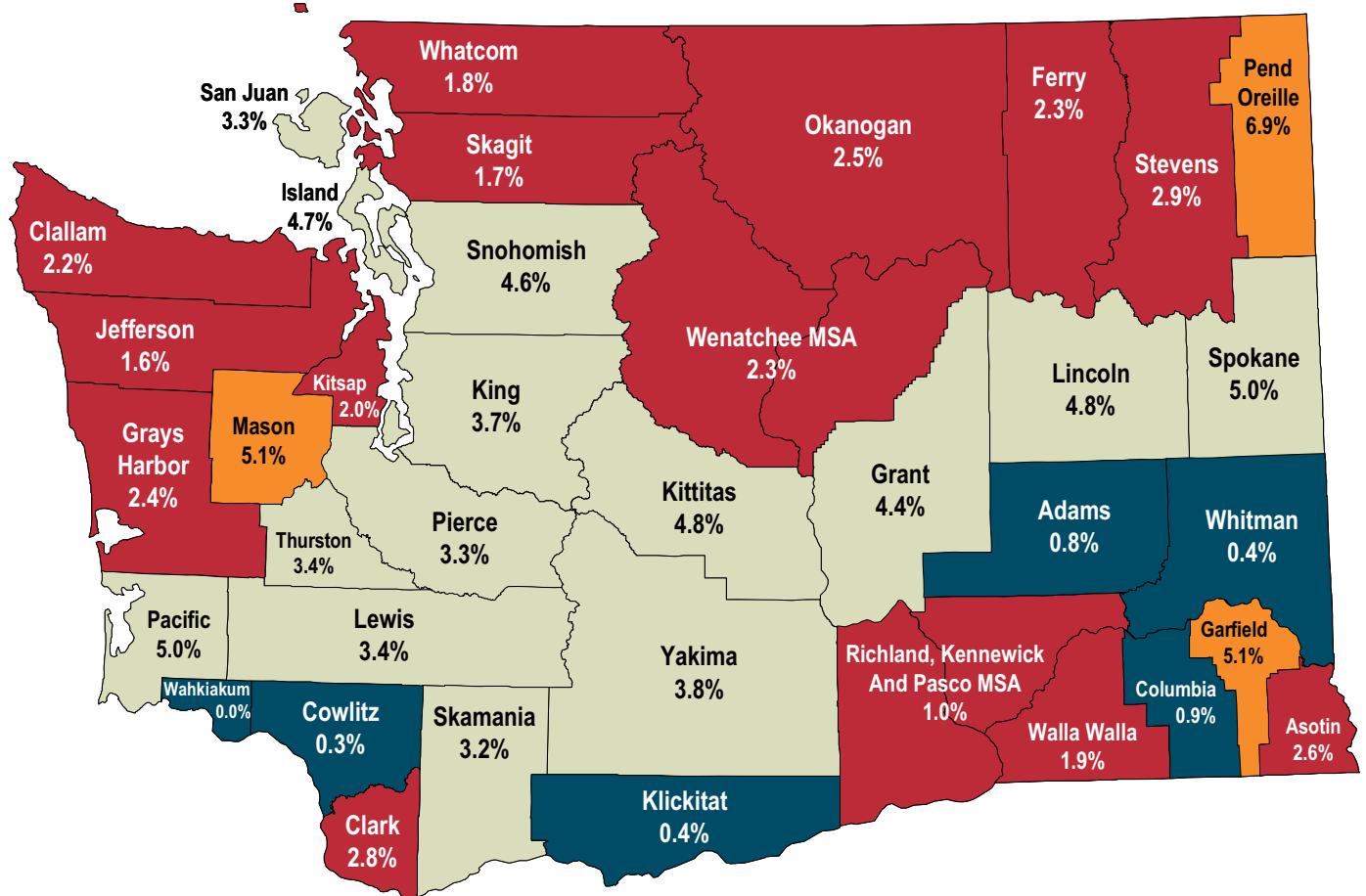
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Figure 2.8

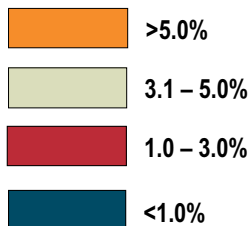
Nonfarm Payroll Growth by County, Percent Change
Washington, October 2005–October 2006

Source: Employment Security Department/LMEA

Annual Job Growth - Statewide Average = 3.6%



Change



Chapter Three - Seasonal, Structural, and Cyclical Employment

Seasonal, Structural, and Cyclical Employment

Changes in employment and unemployment are usually attributed to three factors – seasonal, cyclical, and structural. Being able to identify industries that are historically influenced by one or more of these factors gives us a better understanding of labor markets and causes of unemployment.

Seasonal employment refers to changes which tend to occur at the same time each year. For example, construction jobs traditionally taper off in the winter, but rebound in the spring and peak during summer months. Likewise, employment in education jumps in the fall, and drops off in the summer.

Structural employment changes are attributable to shifting forces which alter the long-term outlook of a given labor market. Declines in the past several decades in Washington's timber industry were driven by new technology as well as enactment of environmental regulations. These declines are characteristic of structural or trend changes.

Cyclical employment can be defined in two different ways. The *first* approach defines the cycle as “persistent deviation from the trend.” So, in a sense, it quantifies employment changes of a cyclical nature for that industry, independent of other industries and economy-wide cycles. An example of this is the aerospace industry in Washington, which goes



through ups and downs, but not necessarily in conjunction with the national economy. The *second* approach looks at how related employment changes are to the business cycle, or economic fluctuations.

The purpose of this chapter is to identify industries across Washington that share one or more of these characteristics. The work has been done with the Employment Security Department's covered employment¹ data series, primarily at the 3- and 4-digit North American Industry Classification (NAICS) level. Using a time series for each of these industries, factors of employment change were broken into four different components – seasonal, cyclical, structural, and irregular.

¹ This is employment covered by the unemployment insurance program.

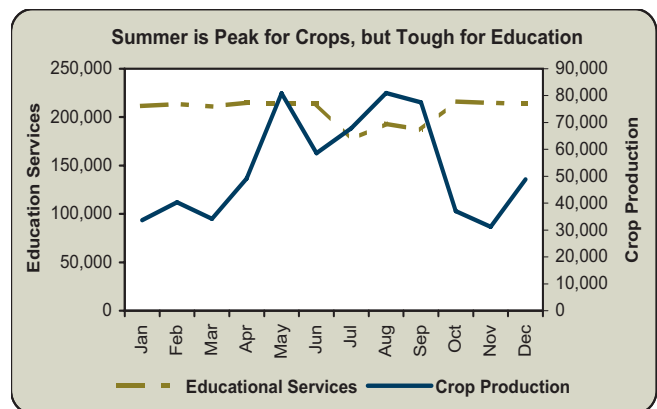
Seasonal Industries

We will refer to industries that exhibit strong changes in employment in consistent patterns throughout the calendar year as *seasonal industries*. As mentioned earlier, examples of this are the construction and educational service industries. Though they fluctuate for different reasons and at different times, both industries have consistent seasonal patterns.

The data analyzed were industry employment (NAICS at the 3-digit and in some cases 4-digit level) from January 1990 to December 2005. As mentioned, the model was used to break out factors of employment change into four different components – seasonal, cyclical, structural, and irregular. Irregular employment changes are those that can't be attributed to one of the other three factors. Based on data generated from this model, it is possible to get a relative measure for seasonality of a given industry.

Educational services employment is more influenced by seasonal patterns than any other – 81.9 percent of employment change is due to seasonal factors. As depicted in *Figure 3.1* below, employment in educational services is very stable until the summer months, when it dips before returning to form in the fall. Crop production, the second most seasonal of Washington industries, has a nearly opposite employment pattern. Employment quickly rises in the spring, takes a dip in the late spring, and peaks in late summer-early fall.

Figure 3.1
Average Monthly Employment in Educational Services and Crop Production
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



Chapter Three - Seasonal, Structural, and Cyclical Employment

While it is most common in Washington for seasonal industries to peak in summer and drop off in winter, there are a few different seasonal patterns. For example, accommodation is highest in the summer, declines in the fall before rebounding during the December holiday season. Meanwhile, clothing and accessories typically see employment peaks in November and December.

Figure 3.2 below shows industries considered to be highly seasonal by order of magnitude. After the previously mentioned educational services industry, the second and third most seasonal industries were crop production and accommodation. Retail, construction, and agriculture-related industries fill out most of the rest of the list.

Figure 3.2

Industries Showing the Highest Degree of Seasonality
Washington, January 1990–December 2005
Source: Employment Security Department/LMEA and the Bureau of Labor Statistics (BLS)

Industry	Wash. Seasonal Change Percent	Average Employ. 2005	U.S. Seasonal Change Percent
Educational Services	81.9%	206,796	93%
Crop Production	76.7%	54,647	N/A
Accommodation	76.1%	26,864	82%
Clothing and Clothing Accessories Stores	75.0%	23,821	79%
Heavy and Civil Engineering Construction	74.1%	18,221	82%
Sporting Goods, Hobby, Book/Music Stores	71.2%	16,363	79%
Building Mat. and Garden Supply Stores	69.1%	22,996	73%
Food Services and Drinking Places	68.1%	164,031	74%
Miscellaneous Store Retailers	67.9%	20,443	73%
Food Manufacturing	66.6%	37,067	75%
General Merchandise Stores	65.8%	42,735	81%
Agriculture and Forestry Support Activities	65.7%	10,871	N/A
Specialty Trade Contractors	65.5%	77,017	43%
Fishing, Hunting and Trapping	65.2%	2,486	N/A
Construction of Buildings	63.0%	35,761	69%

At the other end of the spectrum are industries showing very little seasonal impact. The industries listed in Figure 3.3 show those with the least amount of seasonal fluctuation. The aerospace and parts industry topped the list, as demand tends to be driven by forces outside of Washington and even the United States (and thus beyond the seasonal effects here).

Manufacturing and technology-type industries are predominant in this list of relatively non-seasonal industries. Health care, business services, certain manufacturing, and information-based industries make up most of these non-seasonal industries. It is interesting to note that food

manufacturing is a very seasonal industry (due to the timing of food harvests), yet aerospace, chemical, computer, electrical equipment and appliance, machinery, and primary metal manufacturing are not seasonal at all. These industries are more affected by structural and cyclical factors.



Figure 3.3

Industries Showing the Lowest Degree of Seasonality
Washington, January 1990–December 2005
Source: Employment Security Department/LMEA and the Bureau of Labor Statistics (BLS)

Industry	Wash. Seasonal Change Percent	Average Employ. 2005	U.S. Seasonal Change Percent
Aerospace Product and Parts Mfg.	14.0%	90,810	14.1%
ISPs, Search Portals, and Data Proc.	17.4%	4,075	N/A
Computer and Electronic Product Mfg.	19.8%	28,358	18.7%
Nonstore Retailers	20.2%	7,214	70.0%
Wireless Telecommunications Carriers	20.7%	7,309	21.5%
Other Telecommunications	24.2%	4,332	20.6%
Machinery Manufacturing	24.5%	12,715	28.8%
Wired Telecommunications Carriers	24.7%	12,201	22.2%
Mgmt. of Companies and Enterprises	24.9%	29,180	59.0%
Hospitals	25.3%	73,654	37.6%
Other Transportation Equipment Mfg.	25.3%	5,971	41.5%
Primary Metal Manufacturing	25.7%	9,850	34.7%
Electrical Equipment and Appliance Mfg.	25.9%	3,358	33.8%
Chemical Manufacturing	27.2%	5,619	44.7%
Ship and Boat Building	27.5%	15,517	25.5%

Washington Compared to the Nation

While one might assume that the nature of being seasonal doesn't change, some industries are more or less seasonal in Washington than for the country as a whole. Differing weather patterns cause states such as Hawaii and Arizona for example, to be opposite to Washington's peak construction and tourism seasons. Figure 3.4 shows industries where the seasonal component of change varied significantly from state to nation.



Chapter Three - Seasonal, Structural, and Cyclical Employment

Figure 3.4

Industries Showing Seasonal Disparity with Nation
Washington, January 1990 - December 2005
Source: Employment Security Department/LMEA

Industry Title	Seasonal %	
	WA	U.S.
More Seasonality in Washington		
Specialty Trade Contractors	65.5%	42.8%
Federal Government (other)	42.0%	31.9%
Nursing and Residential Care Facilities	41.1%	33.1%
Broadcasting, Except Internet	35.1%	27.3%
Software Publishers	28.1%	20.7%
Motor Vehicle and Parts Dealers	56.8%	49.5%
Repair and Maintenance	45.8%	38.6%

More Seasonality in Nation

Management of Companies and Enterprises	24.9%	59.0%
Amusements, Gambling, and Recreation	58.9%	83.3%
Food and Beverage Stores	48.1%	69.9%
State Government (other)	47.5%	67.4%
Other Transportation Equipment Manufacturing	25.3%	41.5%
Local Government (other)	61.1%	77.1%
General Merchandise Stores	65.8%	81.3%

Specialty trade contractors show more seasonal employment variation than the nation as a whole, presumably because of our inclement winter weather. The Federal government, nursing facilities, broadcasting, software publishers, repair and maintenance, and motor vehicle industries have also shown more employment fluctuations throughout the calendar year here compared to the rest of the country. Conversely, state and local government is more consistent throughout the year in Washington compared to the nation. The same is also true for management of companies, recreation, food and beverage stores, other transportation manufacturing, and general merchandise.

Structurally Influenced Industries

When we speak of structurally influenced industries, we are referring to those that experience strong employment fluctuations due to structural changes in the economy or the industry itself. The forces which typically drive structural changes are technology, government policy (increased environ-



mental regulations for example), altered trade patterns (lower wages in China), or even shifting consumer tastes. Classic examples of structural industries are the declining employment in timber and wired telecommunications, as well as the increasing employment seen in wireless telecommunications and software publishing.

Figure 3.5

15 Most Structurally Influenced Industries
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA

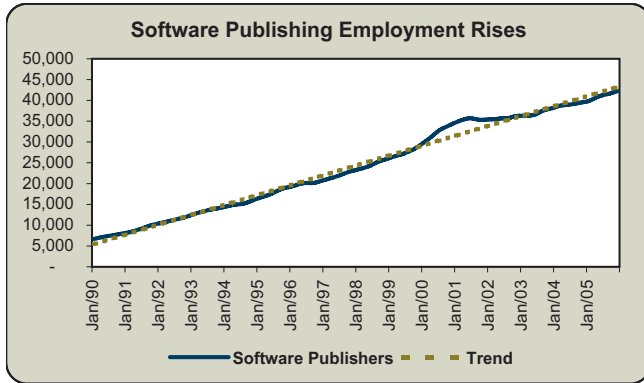
NAICS Industry	Structural Factor		Employment		
	WA	U.S.	Jan '90	Jan '05	Chg.
5112 Software Publishers	38.5%	38.0%	6,666	40,044	501%
334 Computer and Elect. Prod. Mfg.	25.5%	40.2%	29,677	22,136	-25%
331 Primary Metal Manufacturing	23.1%	25.7%	12,613	4,952	-61%
622 Hospitals	22.7%	35.2%	55,814	85,083	52%
621 Ambulatory Health Care Svcs.	22.4%	51.2%	70,681	110,485	56%
5171 Wired Telecom. Carriers	22.4%	29.0%	16,055	7,902	-51%
523 Securities, Commodity Contracts, Investments	21.9%	34.7%	5,602	10,383	85%
5172 Wireless Telecom. Carriers	21.3%	41.6%	1,123	13,244	1079%
333 Machinery Manufacturing	21.2%	33.0%	11,720	12,940	10%
425 Elect. Markets and Agents/Brokers	20.5%	34.1%	9,528	11,376	19%
454 Nonstore Retailers	18.9%	6.7%	5,375	9,305	73%
3364 Aerospace Prod. and Parts Mfg.	18.2%	40.1%	115,956	64,256	-45%
624 Social Assistance	18.1%	25.0%	27,313	59,349	117%
336 Other Transportation Equip. Mfg.	18.0%	11.7%	5,307	5,742	8%
541 Professional and Tech. Svcs.	17.8%	26.0%	90,947	133,992	47%

Of all Washington industries, software publishing stands out as the one most affected by structural factors (the top 15 most structurally influenced industries are listed in *Figure 3.5*). A full 38 percent of all employment changes are due to structural factors – more than any other industry in our state. By tracking employment between 1990 and 2005, you can see how employment hews very close to its long-run trend (*Figure 3.6*). In other words, we don't see a lot of seasonal or cyclical movement. Instead, for the most part, it shows a steady rise as software grew in importance in our economy. Between January of 1990 and 2005, software publishing employment rose by 501 percent.



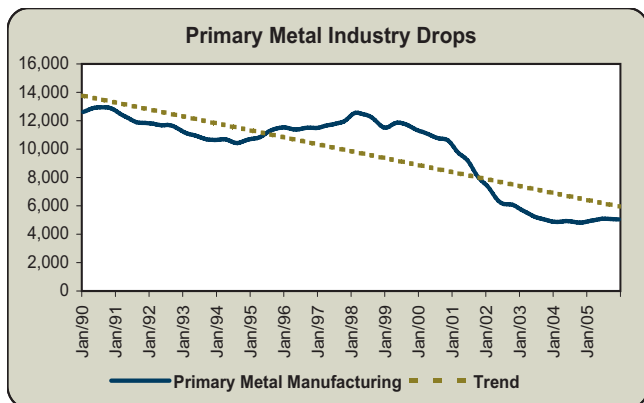
Chapter Three - Seasonal, Structural, and Cyclical Employment

Figure 3.6
Software Publishing
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



Not all structurally influenced industries have experienced growth – far from it. The primary metals industry was the third most structural industry and the one to shed jobs at a faster rate than any other in the top 15. In the 16-year period, 61 percent of employment was lost. Note also that much of the primary metal employment change is due to cyclical factors (20 percent), enjoying solid growth between 1994 and 1998 before a precipitous drop (see *Figure 3.7*). Since 1998, five of the seven aluminum plants operating in our state have shut down, primarily due to a double whammy received from falling prices and rising cost of electricity critical to production.²

Figure 3.7
Primary Metals
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



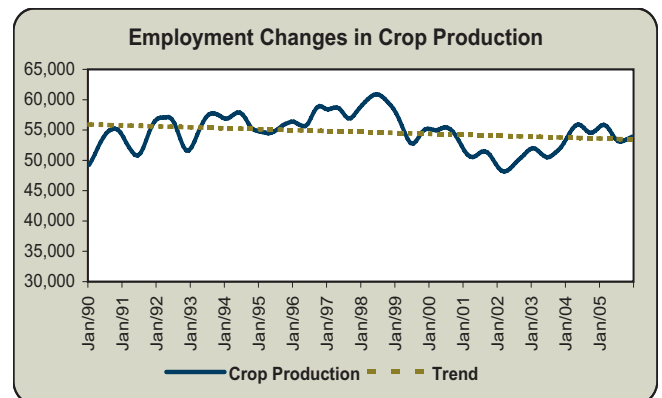
Overall, this list of industries most heavily influenced by structural factors is dominated by manufacturing and goods-producing industries. There are a few exceptions, most notably, hospitals. Hospital employment shows a very steady upward growth driven primarily by demographic factors.

Figure 3.8
15 Least Structurally Influenced Industries
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA

NAICS	Industry	Structural Factor		Employment		
		WA	U.S.	Jan '90	Jan '05	Chg.
111	Crop Production	0.6%	#N/A	49,273	55,862	13%
115	Agric. and Forestry Sup. Activities	2.2%	#N/A	7,694	14,804	92%
487	Scenic and Sightseeing Transp.	2.3%	5.3%	855	631	-26%
237	Heavy and Civil Eng. Constr.	2.5%	4.5%	17,535	20,289	16%
114	Fishing, Hunting and Trapping	2.6%	#N/A	2,951	2,106	-29%
721	Accommodation	0.8%	4.7%	24,921	28,045	13%
311	Food Manufacturing	3.0%	4.0%	36,133	33,657	-7%
448	Clothing and Accessories Stores	3.0%	4.3%	23,840	25,397	7%
446	Health and Personal Care Stores	3.0%	12.6%	14,054	14,842	6%
483	Water Transportation	3.3%	7.2%	3,186	3,292	3%
112	Animal Production	3.5%	#N/A	4,854	6,067	25%
512	Motion Picture and Sound Rec.	3.8%	7.5%	3,862	4,839	25%
711	Perf. Arts and Spectator Sports	4.0%	3.5%	10,143	8,974	-12%
424	Merch. Whlslers., Nondur. Goods	4.1%	10.3%	38,470	43,323	13%
611	Educational Services	4.4%	3.7%	163,808	240,020	47%

A list of industries that has low structural influence (as in *Figure 3.8*) can be as informative as one showing heavy influence. Employment changes in the crop production industry have almost no structural affect (as over three quarters of changes are due to seasonality). This is displayed visually in *Figure 3.9* which shows a nearly flat trend line.

Figure 3.9
Crop Production
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



² http://www.bpa.gov/power/pl/regionaldialogue/aluminum_industry_impact_2005.pdf

Chapter Three - Seasonal, Structural, and Cyclical Employment

Figure 3.10

State and National Structural Variation
Washington and U.S., January 1990-December 2005
Source: Employment Security Department/LMEA

NAICS Title	WA	U.S.	Absolute Difference
623 Nursing and Res. Care Facilities	11.8%	45.1%	33.3%
621 Ambulatory Health Care Services	22.4%	51.2%	28.8%
313 Textile Mills	6.8%	30.2%	23.5%
517 Other Telecommunications	12.7%	34.8%	22.1%
3364 Aerospace Product and Parts Mfg.	18.2%	40.1%	21.9%
5172 Wireless Telecomm. Carriers	21.3%	41.6%	20.3%
221 Utilities	7.1%	26.5%	19.4%
316 Leather and Allied Product Mfg.	5.4%	24.2%	18.8%
515 Broadcasting, Except Internet	5.8%	21.8%	16.1%
315 Apparel Manufacturing	13.7%	29.2%	15.5%

Relative to the U.S., Washington industries tend to be more structurally influenced. *Figure 3.10* lists industries showing the highest absolute difference between geographic areas, and the top 15 all show more structural change for the nation. Nursing and residential care and ambulatory health services industries stand out in particular. The only industry displaying significantly more structural influence at the state level over national was non-store retailers (not shown). The factor was 18.9 percent for Washington and 6.7 percent for the U.S.

Cyclical Industries

We are taking two approaches to measuring an industry's cyclicity – employment movements tied to the ups and downs of an economy as well as employment associated with cycles independent to the given industry. Industries



that have employment sensitive to economic fluctuations are typically those facing variable demand for their products and services. A classic example of this might be the automotive industry since

purchasing big ticket items like cars can be postponed during hard times. Here in Washington, we have a great example of an industry that has its own cycle, somewhat independent of economic cycles – aerospace. The fortunes of the aerospace industry are more often determined by factors outside of Washington and even the United States.

Industry Cyclicity

Figure 3.11

Industries with Internal Industry Cyclicity
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA

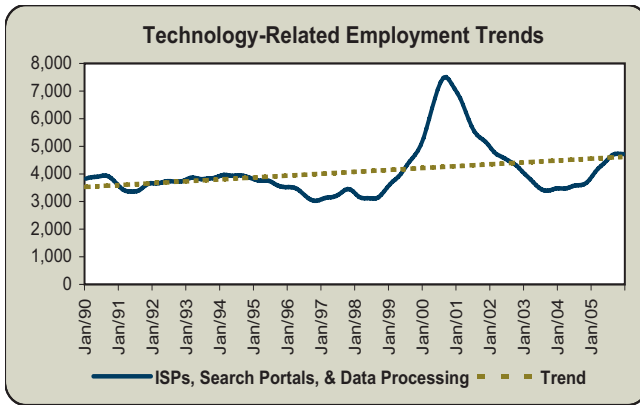
NAICS	Industry	WA	U.S.	Structural	Irregular	Seasonal
518	ISPs, Search Portals, and Data Proc.	30.4%	#N/A	17.8%	34.5%	17.4%
486	Pipeline Transportation	27.1%	15.2%	9.1%	42.8%	21.1%
3364	Aerospace Product and Parts Manuf.	25.5%	21.3%	18.2%	42.3%	14.0%
334	Computer and Elect. Product Manuf.	25.3%	27.9%	25.5%	29.5%	19.8%
524	Insurance Carriers and Related Activities	24.4%	24.2%	13.1%	34.2%	28.3%
522	Credit Intermediation and Related Activities	24.1%	24.3%	15.2%	32.7%	28.0%
454	Nonstore Retailers	23.1%	9.3%	18.9%	37.9%	20.2%
336	Other Transportation Equipment Manuf.	23.0%	14.5%	18.0%	33.6%	25.3%
221	Utilities	22.2%	11.4%	7.1%	42.0%	28.7%
525	Funds, Trusts, and Other Financial Vehicles	22.1%	18.8%	14.9%	38.0%	25.0%
333	Machinery Manuf.	20.8%	22.1%	21.2%	33.4%	24.5%
5172	Wireless Telecomm. Carriers	20.8%	15.8%	21.3%	37.2%	20.7%
521	Monetary Authorities - Central Bank	20.6%	#N/A	10.6%	50.4%	18.4%
331	Primary Metal Manuf.	20.3%	19.1%	23.1%	30.9%	25.7%
562	Waste Mgmt. and Remediation Services	20.3%	10.2%	15.1%	35.9%	28.6%

A little over 30 percent of employment changes in the ISPs, search portals, and data processing industry were accounted for by cyclical factors – more than any other in Washington. While this technology-related industry added employment to the tune of 31 percent between 1990 and 2005, it did so irregularly. Until late 1998, employment trended slightly down with minor deviations. However, between the fall of 1998 and 2000, the industry added over 4,000 workers, an increase of 128 percent (see *Figure 3.12*). This was followed up in the next three years by losing nearly the same amount of workers (3,843). Since that time, the industry has recovered somewhat. This is a good example of an industry following its own cycle, much of it explained by the tech boom and bust.



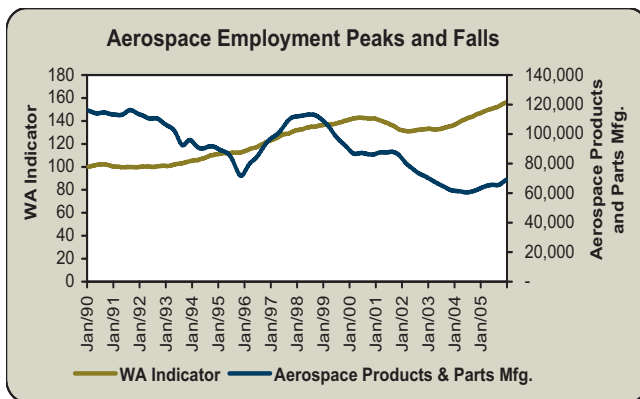
Chapter Three - Seasonal, Structural, and Cyclical Employment

Figure 3.12
ISPs, Search Portals, and Data Processing
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



Another classic example of an industry with its own cycle as previously mentioned is aerospace. Aerospace employment bottomed out in the fall of 1995, peaked in the fall of 1998, and fell off, for the most part, until summer 2004. Since then, employment has rebounded to a certain degree. *Figure 3.13* compares aerospace employment to general trends in the Washington economy (as represented by the Washington state coincident indicator). Note that while there are periods of coinciding movement, for the most part they seem unrelated.

Figure 3.13
Aerospace Product and Parts
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA and the Federal Reserve Bank of Philadelphia



Overall, the list in *Figure 3.11* is not dominated by any particular type of industry. The only detectable trend might be the number of financial-related industries in the list (insurance carriers, credit intermediation, funds and other financial vehicles, and monetary authorities). Finance-related industry cycles tend to be more dependent on factors such as credit, interest rates, housing markets, and government policies than aggregate demand.

Business Cycle-Related Industries

Figure 3.14
Industries Most Correlated to the Washington Economy
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA and the Federal Reserve Bank of Philadelphia

NAICS Industry	Average Employment		
	1990	2005	Change
All Industries	2,125,904	2,762,021	29.9%
561 Administrative and Support Services	66,009	124,497	88.6%
335 Electrical Equip. and Appliance Mfg.	2,387	4,208	76.3%
441 Motor Vehicle and Parts Dealers	32,095	40,800	27.1%
812 Personal and Laundry Services	20,532	24,420	18.9%
713 Amusements, Gambling, and Rec.	17,493	33,183	89.7%
238 Specialty Trade Contractors	60,396	101,571	68.2%
722 Food Services and Drinking Places	138,337	186,273	34.7%
444 Bldg. Mat. and Garden Supply Stores	19,294	26,867	39.3%
423 Merch. Wholesalers, Durable Goods	50,014	63,385	26.7%
443 Electronics and Appliance Stores	7,355	10,768	46.4%
532 Rental and Leasing Services	9,444	13,321	41.0%
541 Professional and Technical Services	92,170	135,412	46.9%
327 Nonmetallic Mineral Product Mfg.	7,350	9,497	29.2%
484 Truck Transportation	20,021	23,313	16.4%
115 Ag and Forestry Support Activities	7,880	14,877	88.8%

The second approach to analyzing a given industry's cyclical nature is to compare it to the business cycle or aggregate economic demand. For this purpose, the Washington State Coincident Economic Activity Index (July 1992=100) produced by the Philadelphia Federal Reserve was used. *Figure 3.14* displays Washington industries that show employment to be most statistically correlated with the state's economy.

The administrative support and services industry employment was most closely correlated to the Washington state index. Note how closely these two data sets move together in *Figure 3.15*.

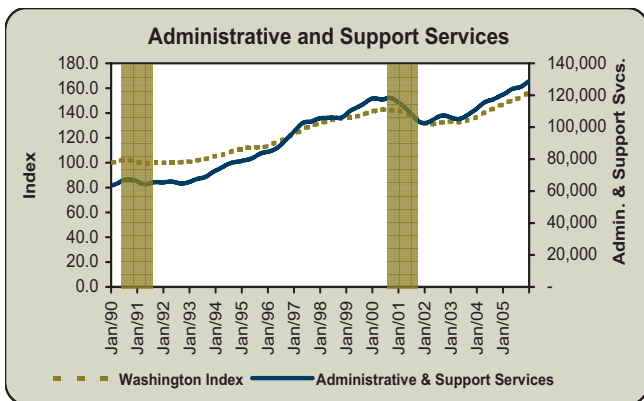


Chapter Three - Seasonal, Structural, and Cyclical Employment

Administrative support and services industry employment dips even more so than the Washington index during national recession periods (as depicted by the green bands). What this means is that we can expect administrative and support services to add employment consistently during economic booms, and shed jobs during recessions.

Overall employment patterns for these industries listed in *Figure 3.14* look like that of administrative and support services as shown in *Figure 3.15*. Most of the industries listed also produce a good or service for which demand can be postponed in hard times but rises quickly in good times. Examples of this are amusements, food and drinking establishments, and building material and garden supply industries. Note also that there are a number of durable goods-producing industries (motor vehicles and appliances for example).

Figure 3.15
Administrative and Support Services Versus Washington Index
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



At the other end of the spectrum are industries related to the economy, but inversely. Essentially, this means that for such an industry, employment tends to rise during statewide economic downturns, and falls during economic growth periods. *Figure 3.16* lists industries with the highest degree of inverse correlation.

The fishing, hunting, and trapping industry had the highest degree of inverse correlation. *Figure 3.17* depicts movements of Washington's economy against hunting, fishing, and trapping employment. The graph looks something like an 'X' with movements for the most part being opposite the other. Employment in this industry rose during the recession of the early 1990s, but fell during the more recent

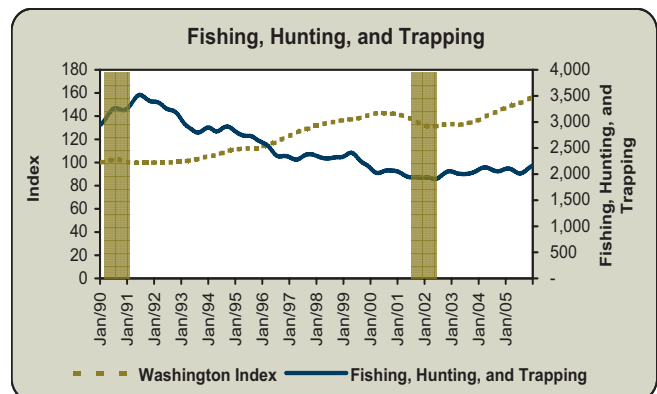
recession. Remember also the aerospace graph looked somewhat similar (*Figure 3.13*). It also made the list of inversely correlated industries, but to a lesser degree.

The common denominator in *Figure 3.16* is that all industries listed declined over the 16-year period, putting it automatically at odds with the wider economy which grew by 30 percent during the same time frame.

Figure 3.16
Industries Inversely Correlated to the Washington Economy
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA

NAICS Industry	Average Employment		
	1990	2005	Change
All Industries	2,125,904	2,762,021	29.9%
114 Fishing, Hunting, and Trapping	3,172	2,075	-34.6%
525 Funds, Trusts, and Other Fin. Veh.	1,700	362	-78.7%
493 Warehousing and Storage	10,682	8,797	-17.7%
221 Utilities	6,152	4,381	-28.8%
316 Leather and Allied Product Mfg.	506	317	-37.4%
322 Paper Manufacturing	16,643	12,150	-27.0%
113 Forestry and Logging	9,399	5,611	-40.3%
313 Textile Mills	684	511	-25.3%
487 Scenic and Sightseeing Trans.	904	617	-31.8%
5171 Wired Telecomms. Carriers	15,111	7,716	-48.9%
515 Broadcasting, Except Internet	5,224	4,366	-16.4%
321 Wood Product Manufacturing	23,950	19,622	-18.1%
3364 Aerospace Prod. and Parts Mfg.	114,436	65,756	-42.5%
331 Primary Metal Manufacturing	12,848	5,036	-60.8%
315 Apparel Manufacturing	4,250	2,051	-51.7%

Figure 3.17
Fishing, Hunting, and Trapping Versus Washington Index
Washington, January 1990-December 2005
Source: Employment Security Department/LMEA



Chapter Four - Unemployment and its Dimensions

Unemployment and its Dimensions

Many indicators are used to determine the difficulty of obtaining employment in a given labor market. The unemployment rate is widely used in economic research as a lagging indicator of the overall direction of the economy. Lesser used, but no less important, are the characteristics of the unemployed. We can get an earlier indication of changes in the economy by analyzing changes in the numbers of long-term unemployed as well as the industries that commonly contribute to cyclical unemployment spikes.

The Unemployment Rate

The unemployment rate is estimated based on three pieces of information. First is the *Current Population Survey*, in which households are asked whether unemployed adults in the household searched for work over the past four weeks. Second is the *Current Employment Statistics Survey*, which estimates employment based on a survey of firms. The last piece of information is the number of unemployment insurance beneficiaries, which is used in conjunction with the other two pieces of information to estimate the number of unemployed.

Washington's unemployment rate has historically been higher than the national average. From 1995 to 2005, the state unemployment rate averaged 5.9 percent, significantly higher than the national average of 5.1 percent. Taken at face value, it would be easy to assume there is an inherent problem with Washington's economy that has caused the higher unemployment rates. As with most things, it is not that simple.

The largest contributing factor to Washington's unemployment rate is the unique industrial composition of the economy. Construction, manufacturing, administrative/waste services, and agriculture have consistently been the major contributors to Washington's high unemployment figures. These industries also contain sub-sectors that make up a



larger share of total state employment than their share of national employment. For example, the aerospace sector of manufacturing has a much larger than average share of

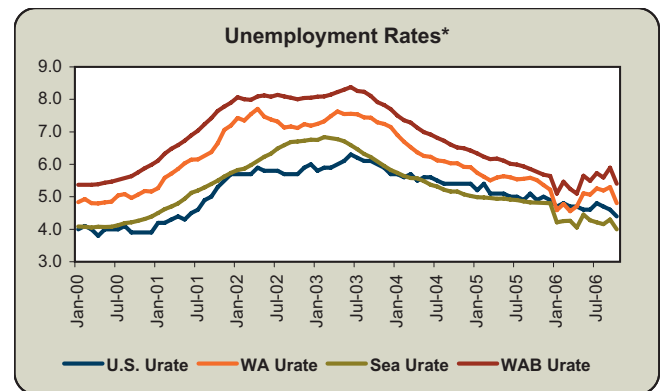
larger share of total state employment than their share of national employment. For example, the aerospace sector of manufacturing has a much larger than average share of

³ Preliminary October 2006 figures showed the unemployment rate declining from September to 4.8 percent.

total workers in Washington than the nation. Therefore, employment swings in aerospace will hit the state unemployment rate harder than the nation's.

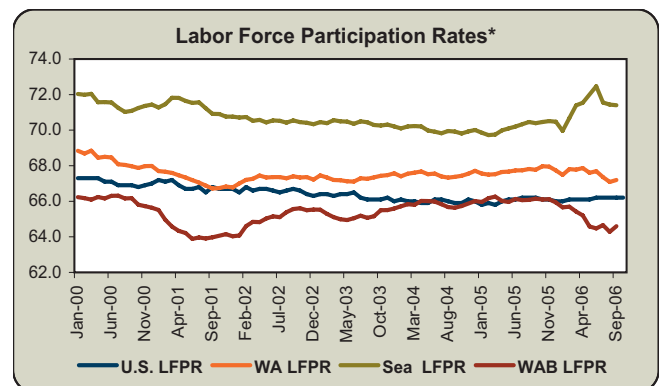
For 2006, Washington's seasonally adjusted unemployment rate has been slowly climbing, starting the year off at 4.6 percent in January and rising to 5.3 percent in September³ (see *Figure 4.1*). The summer months of 2006 brought increases in the numbers of unemployed workers (as well as employed workers) that were due to large increases in labor force participation (*Figure 4.2*). The most simple explanation for this phenomenon is that we had larger than normal seasonal employment increases during the summer months.

Figure 4.1
Unemployment Rates Over Time
United States Total and Washington,
January 2000 to September 2006
Source: U.S. Bureau of Labor Statistics



* "Sea" denotes Seattle and "WAB" denotes Balance of Washington

Figure 4.2
Labor Force Participation Rates
United States Total and Washington,
January 2000 to September 2006
Source: U.S. Bureau of Labor Statistics



* "Sea" denotes Seattle and "WAB" denotes Balance of Washington

Chapter Four - Unemployment and its Dimensions

Unemployment Insurance Beneficiaries

Unemployment insurance beneficiaries represent just a portion of all unemployed people; they include only those who were qualified and received unemployment insurance payments. These individuals are quite interesting to track because we are able to get an exact count, and most provide us with their last occupation and industry. This section will concentrate on the industries from which these beneficiaries became unemployed.

Unemployment insurance beneficiaries represent just the portion of the estimate of total unemployed.

Each person who files a claim for unemployment insurance benefits is required to document their last employer, occupation, and a few other economic characteristics about themselves. From this information we are able to analyze unemployment insurance program data at the industry and occupation level and break it down by region. We compared the number of beneficiaries to industry



employment in order to come up with a relative measure of unemployment insurance beneficiaries by industry. In *Figure 4.3*, the numbers represent the ratio of the share of beneficiaries per industry to the share of total employment per industry. For example, transportation and warehousing makes up 3.7 percent of total beneficiaries. It also

has a 3.0 percent share of total employment; therefore its ratio (3.7/3.0) is 1.2. A ratio of 1.0 means the industry has a share of beneficiaries that matches its share of total employment. Over 1.0 indicates a higher share of beneficiaries than employment with the opposite being true for a beneficiary ratio under 1.0.

Figure 4.3

Unemployment Insurance Beneficiaries Relative to Employment Washington, October 2005-September 2006
 Source: Employment Security Department/LMEA

Industry	Employment to Beneficiaries	Share of Total Employ.	Share of Total Beneficiaries
Agriculture, Forestry, Fishing and Hunting	3.5	2.6%	9.3%
Construction	3.1	6.5%	20.1%
Admin. and Waste Services	2.3	5.0%	11.5%
Arts, Entertainment, and Rec.	1.4	1.5%	2.1%
Transportation and Warehousing	1.2	3.0%	3.7%
Manufacturing	1.2	9.7%	11.4%
Wholesale Trade	0.9	4.3%	3.9%
Real Estate and Rental/Leasing	0.9	1.7%	1.5%
Other Svcs., exc. Public Admin.	0.8	3.6%	3.0%
Professional and Tech. Svcs.	0.8	5.0%	4.0%
Retail Trade	0.7	11.1%	8.0%
Accommodation and Food Svcs.	0.7	7.7%	5.3%
Finance and Insurance	0.7	3.6%	2.5%
Health Care and Social Assist.	0.6	10.0%	5.9%
Information	0.5	3.3%	1.8%
Public Administration	0.3	10.2%	3.1%
Educational Services*	0.2	9.5%	2.2%
Management of Companies and Enterprises	0.1	1.2%	0.1%

* Public and private education combined.

Agriculture had the highest beneficiary ratio in 2006 at 3.5, with a 9.3 percent share of total beneficiaries and a 2.6 percent share of total employment. This high ratio was the result of seasonal fluctuations in agricultural employment. Construction and administrative/waste services were the only other industries with significantly high ratios of beneficiaries to employment. This measure really only scratches the surface of a greater issue facing the unemployment insurance system and industries that tend to use the system for maintaining an on-call workforce. In reality the only thing we can glean from these numbers is a relative measure of which industries commonly have layoffs and which industries do not. From October 2005 to October 2006, the construction industry added 18,800 jobs, administrative/waste services was up 11,000, and the agriculture industry posted a loss of 2,600. Intuitively we wouldn't expect to see the second largest growing industry in the state also be at the top of the list for unemployment beneficiaries, but sometimes reality is stranger than fiction.



Chapter Four - Unemployment and its Dimensions

Long-Term Unemployment

When a recently unemployed individual files a claim for benefits they receive a maximum weekly benefit amount, if all eligibility requirements are met, for a set number of weeks. Both the weekly benefit amount and the potential number of weeks of compensation are the result of a calculation using employment and earnings history from a base period. This discussion is concerned primarily with the *potential duration of compensation*.

During non-recessionary times, most discussions of long-term unemployment insurance usage center on those beneficiaries drawing 15 or more weeks of benefits. The potential duration of entitlement in the regular program ranges between 13 and 26 weeks in non-recessionary times. During periods of recession, when the Extended Benefit (EB) trigger has been activated, the length of entitlement increases to 30 weeks. Beneficiaries that drew for 15 weeks or more accounted for 24 percent (61,300 of 256,500) of total beneficiaries in Washington from October 2005 to September 2006. *Figure 4.4* displays the three industries with the highest rates of long-term unemployed, compared to their share of total employment. *Figure 4.5* contains the other end of the spectrum with those industries that have relatively low rates of long term unemployed compared to their share of total employment.

Figure 4.4
Three Industries With Highest Share of 15-Week Beneficiaries Relative to Share of Employment
Washington, October 2005-September 2006
Source: Employment Security Department/LMEA

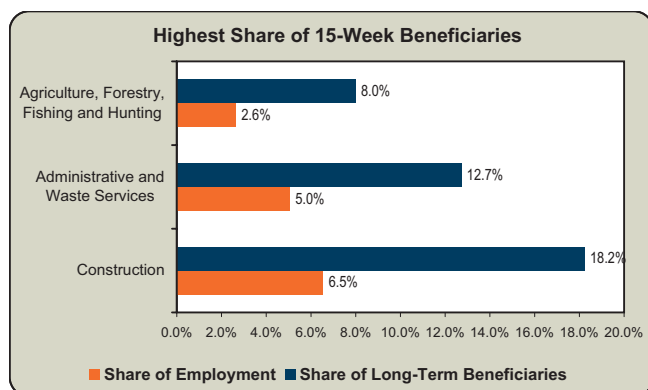
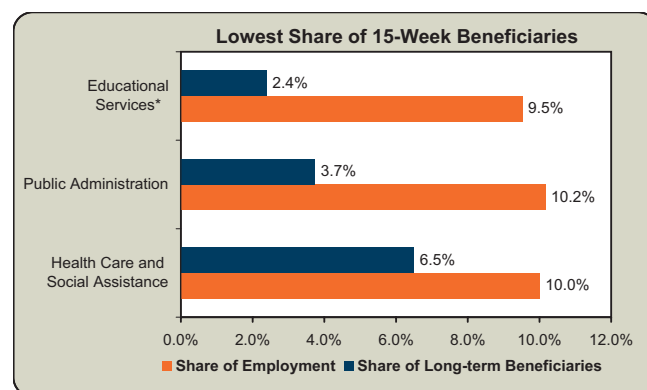


Figure 4.5
Three Industries With Lowest Share of 15-Week Beneficiaries Relative to Share of Employment
Washington, October 2005-September 2006
Source: Employment Security Department/LMEA



Unemployment Insurance Exhaustions

Unemployment insurance exhaustions are one of many measures we can use to take the “pulse” of the economy at a point in time. When the economy is healthy and growing, we would expect to see low numbers of exhaustions as more unemployed workers are able to re-enter the workforce before running out of unemployment insurance benefits. In 2006, 8.1 percent of beneficiaries exhausted their claim. This compares favorably with what we have seen in the last few years. From 2000 through 2002, the average exhaustion rates were over 20 percent. Then in 2003 we saw the first significant decline since the recession when the exhaustion rate dropped to 14.3 percent. It has gradually declined since then.



Figures 4.6 through 4.8 display unemployment insurance exhaustions by industry, region, and occupation.

Chapter Four - Unemployment and its Dimensions

Figure 4.6

Unemployment Insurance Exhaustions by Industry
Washington, October 2005-September 2006
Source: Employment Security Department/LMEA

Industry	Annual Exhaustions	Exhaustion Rate
Administrative Support and Waste Mgmt.	4,835	16.4%
Construction	4,802	9.3%
Manufacturing	3,105	10.6%
Retail Trade	2,969	14.4%
Agriculture, Forestry, Fishing and Hunting	2,275	9.6%
Health Care and Social Assistance	2,155	14.2%
Accommodation and Food Services	1,714	12.6%
Professional, Scientific, and Tech. Services	1,365	13.3%
Wholesale Trade	1,180	11.9%
Transportation and Warehousing	1,101	11.7%
Other Services (Except Public Administration)	1,088	14.0%
Public Administration	1,016	12.6%
Finance and Insurance	909	14.2%
Educational Services	797	14.1%
Information	742	16.4%
Arts, Entertainment, and Recreation	719	13.3%
Real Estate and Rental and Leasing	584	14.8%
Utilities	83	13.0%
Mining	71	7.6%
Management of Companies and Enterprises	26	13.8%
Total	31,536	12.3%

Figure 4.7

Unemployment Insurance Exhaustions by Area
Washington, October 2005-September 2006
Source: Employment Security Department/LMEA

Workforce Development Area	Annual Exhaustions	Exhaustion Rate
Seattle-King County	8,285	13.6%
Pierce County	3,752	13.1%
Snohomish County	3,035	11.9%
Tri-County	2,884	12.7%
Pacific Mountain	2,323	11.8%
Spokane	1,920	10.8%
Benton-Franklin	1,896	13.7%
North Central	1,744	10.1%
Southwest Washington	1,730	10.0%
Northwest	1,677	11.4%
Olympic Consortium	1,403	12.6%
Eastern Washington Partnership	887	12.8%
Total	31,536	12.3%

Figure 4.8

Unemployment Insurance Exhaustions by Occupation Group
Washington, October 2005-September 2006
Source: Employment Security Department/LMEA

Occupation Group (2-Digit SOC)	Annual Exhaustions	Exhaustion Rate
43-Office and Admin. Support Occupations	4,524	16.6%
47-Construction and Extraction Occupations	4,202	9.7%
51-Production Occupations	3,148	11.9%
11-Management	2,842	11.5%
41-Sales and Related Occupations	2,626	14.7%

53-Transportation and Material Moving Occs.	2,359	10.3%
45-Farming, Fishing, Forestry Occupations	2,164	11.1%
49-Installation, Maintenance, Repair Occs.	1,280	11.5%
35-Food Preparation, Serving-Related Occs.	1,196	10.8%
13-Business, Financial Operations	975	15.2%
37-Building, Grounds Cleaning and Maintenance	901	14.6%
31-Healthcare Support Occupations	828	16.2%
15-Computer, Mathematical Science	621	11.2%
39-Personal Care and Service Occupations	565	12.4%
33-Protective Service Occupations	530	14.4%
17-Architecture and Engineering	463	13.2%
25-Education, Training, Library Occupations	460	11.4%
29-Healthcare Practitioner and Technical Occs.	458	14.3%
27-Arts, Design, Entertainment, Sports, Media	439	12.8%
21-Community and Social Services	327	18.4%
19-Life, Physical, Social Science	217	10.8%
55-Military Specific Occupations	212	13.3%
23-Legal Occupations	199	15.4%
Total	31,536	12.3%

Mass Layoff Statistics

The Mass Layoff Statistics program is a federally funded program that began in 1996. This program collects information on firms that lay off fifty or more employees over a five week period. The rationale for this program is that large layoffs indicate areas of potential distress in the state and point to industries that may be in trouble. Also, since those involved in a mass layoff are more likely to have trouble finding re-employment than other laid off individuals, the mass layoff statistics program helps service providers target those unemployed that are most in need of services.

Further analysis of mass layoff statistics is available through the Employment Security Department.

Significantly fewer mass layoff events occurred during the first three quarters of 2006 than in any year since the start of the 2001 recession. *Figure 4.9* displays the total number of mass layoff events per year for 1996 through 2006.⁴ As with the relatively low unemployment rates and low benefit exhaustion rates, the low numbers of recent mass layoff events further illustrate how much Washington's economy has progressed in the last few years.

Seasonal factors are typically the most common reason cited for an MLS event. This trend was weakened somewhat between 2000 and 2004 as more firms listed either business demand or reorganization as the primary reason for a layoff. Since 2004 there have been a few reorganizations, but seasonal factors returned to the forefront.

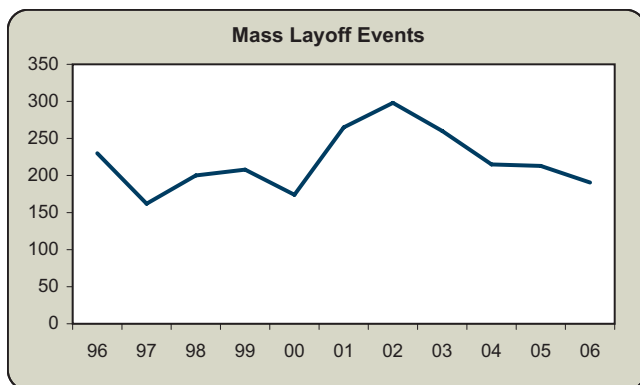
⁴ Data for the 4th quarter of 2006 were projected to allow for an annual comparison of MLS events.

Chapter Four - Unemployment and its Dimensions

Unfortunately, detailed data about the numbers of firms selecting given reasons for MLS events are not publishable due to confidentiality guidelines imposed by the Bureau of Labor Statistics.

Figure 4.9

Total Number of Mass Layoff Events
Washington, 1996-2006
Source: Employment Security Department/LMEA



Discouraged Workers

Discouraged workers are those unemployed workers who have given up looking for work because they believe that they will not find a job. This concept has been around since, at least, the 1970s, but due to a change in the definition, national estimates are only available from 1994 on and Washington estimates date back to 1998.

The term discouraged worker is often confused with the term dislocated or displaced worker. The most important distinction is that the dislocated or displaced worker is most often considered part of the labor force. The discouraged worker is not in the labor force and is not part of the unemployment rate calculation.

The state level source of information on discouraged workers is the Washington State Population Survey⁵, national data is derived from the Current Population Survey. The State Population Survey asks why the person didn't seek work during the last four weeks. Three of the possible responses seem to be associated with what are thought of as discouraged workers. The first is, "no work in field," the second is, "can't find work," and the third is, "lack of skills." *Figure 4.10* displays those findings.

⁵ The Office of Financial Management administers the State Population Survey, see: <http://www.ofm.wa.gov/sps/default.asp>.

Most notable on *Figure 4.10* is the change in percent of discouraged workers due to "lack of skills." We would need to investigate the data much further to come up with any concrete reasons for the decrease from 29 percent in 2000 to 3 percent in 2006. However, one possibility is that the data for 1998 and 2000 reflected the lag between exceptional technological advance in the 1990s and (re)training of the labor force.

Figure 4.10

Estimated Number of Workers Who Have Given up Looking for Work
Washington, 1998-2006
Source: Washington State Population Survey, Office of Financial Management

	Reason for Giving Up Looking for Work			Total
	No Work in Field	Can't Find Work	Lack Skills	
1998	52%	25%	24%	6,583
2000	60%	12%	29%	5,556
2002	42%	49%	10%	11,694
2004	35%	56%	9%	24,128
2006	27%	71%	3%	8,094

While Washington's number of discouraged workers more than doubled between 2000 and 2002 and 2002 and 2004, the national numbers grew at a much smaller rate. The substantial growth in the number of discouraged workers in Washington in 2002 and 2004 can be mostly attributed to the especially tight job market the state experienced after 2001. Staying on par with recent employment gains as well as decreases in the unemployment rate, both the state and the nation saw the numbers of discouraged workers decrease substantially in 2006. *Figure 4.11* illustrates the difference between the state and the nation.

Figure 4.11

Estimated Number of Discouraged Workers (in Thousands)
Washington, 1998-2006
Source: Washington State Population Survey, Office of Financial Management, and the U.S. Bureau of Labor Statistics

	Washington	United States
1998	6.6	331.0
2000	5.6	276.5
2002	11.7	325.6
2004	24.1	475.5
2006	8.1	395.0

Chapter Five - Demographics of the Labor Force

Demographics of the Labor Force

Like all work forces, Washington's is not a static one. The nature and degree of changes in our labor composition has far reaching consequences for planners, employers, and educators. Generally speaking the state's labor force, like much of the country, is becoming older, more female, and more racially diverse.

Demographics of the Employed

Currently the largest age cohort of Washington's labor force is the 35-44 year old group. The age distribution of our work force looks very much like a bell curve (see *Figure 5.1*), with the 25-34 and 45-54 age groups nearly as large as that of 35-44 year olds. Younger and older worker groups make up much smaller percentages of those in the labor force, yet, like much of the country the 35-44 age cohort has made up an increasing smaller share of the total.



Figure 5.2 illustrates how the 34-44 year old cohort has shrunk as a percentage from 47 percent in 1995 to 37 percent in 2005. The groups picking up larger shares of the work force are the

two older age cohorts, 45-54 and 55 and above. The state's population is projected to continue becoming older and this will likely be mirrored in the make-up of our work force.

Figure 5.1

Distribution of Employment by Age
Washington, Average Employment 2005
Source: Longitudinal Employment Dynamics (LED)

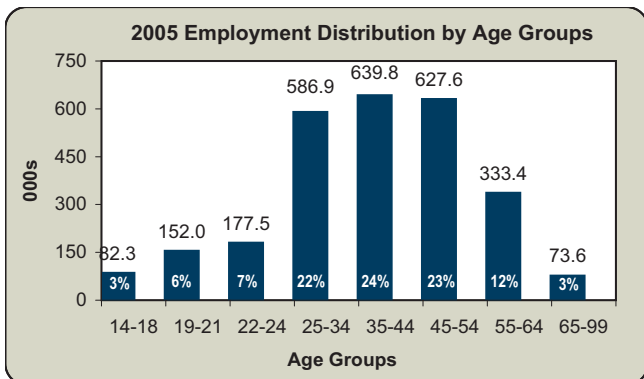
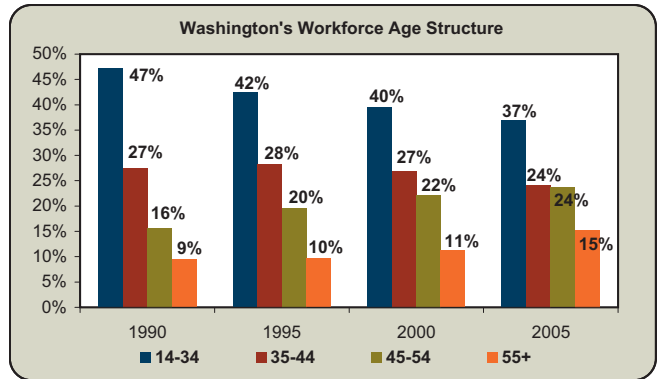


Figure 5.2

Changing Age Structure of Washington's Workforce
Washington, Average Employment
1990, 1995, 2000, and 2005
Source: Longitudinal Employment Dynamics (LED)



The increasing percentage of females in Washington's labor force is another long-run trend. While overall just under half of the workforce is female, it varies quite a bit by industry. Mining at 12 percent and construction at 16 percent female, had the lowest such ratios of any major industry sector (NAICS 2-digit level). At the other end of the spectrum almost 80 percent of healthcare and social assistance workers are female. Other industries with high percentages of female workers were educational services, finance and insurance, other services, and accommodation and food service.



Unlike the age demographics, the growing labor force share of females is not attributable so much to population shifts as to participation in the labor force. The overall participation rate for Washington's labor force actually fell between the two most recent census years, yet for women the rate rose substantially from 57.7 to 59.8 percent. While this rate could rise a bit more, it is likely to slow as it approaches the male participation rate.

Chapter Five - Demographics of the Labor Force

Figure 5.3

Employment by Industry and Gender
Washington, Average Employment 2005
Source: Longitudinal Employment Dynamics (LED)

Industry	Avg. Empl. 2005	Percent Female
All Industry Sectors	2,673,263	49%
Mining	3,369	12%
Utilities	15,214	30%
Construction	155,662	16%
Manufacturing	266,224	27%
Wholesale Trade	118,595	31%
Retail Trade	312,421	51%
Transportation and Warehousing	94,812	29%
Information	105,043	37%
Finance and Insurance	103,570	66%
Real Estate and Rental and Leasing	50,267	49%
Management of Companies and Enterprises	34,709	53%
Admin., Support, Waste Mgmt, Remediation Svcs.	138,693	41%
Educational Services	240,025	68%
Health Care and Social Assistance	310,800	79%
Accommodation and Food Services	208,957	57%
Other Services (except Public Administration)	107,030	60%
Public Administration	134,697	45%

In 2000, the most recent census year, whites made up approximately 88 percent of the state's labor force. This had fallen from about 92 percent 10 years earlier and is projected to continue declining. The Office of Financial Management has forecasted the non-white population to be almost 19 percent of the state's labor force by 2030 (see *Figure 5.4*). Hispanics are



projected as the fastest growing segment of the population (going from 3.8 to 13.5 percent between 1990 and 2030), followed by Asians and Other (5.7 percent to 14.9 percent).

Figure 5.4

Washington Labor Force Composition by Race
Washington, Average Employment 2005
Source: Office of Financial Management

Washington Labor Force Composition by Race Share of Total labor Force						
Year	Total Labor Force (1000s)	White	African American	Asian and Other	Total Non-White	Hispanic
1990	2,537.0	91.5%	2.7%	5.7%	8.5%	3.8%
2000	3,051.2	87.8%	3.0%	9.1%	12.2%	6.3%
2010	3,624.7	85.5%	3.3%	11.1%	14.5%	8.3%
2020	3,992.0	83.5%	3.6%	12.9%	16.5%	11.1%
2030	4,318.9	81.4%	3.7%	14.9%	18.6%	13.5%

Demographics of Unemployment Insurance Beneficiaries

The beneficiaries count is an unduplicated count of persons who have received an unemployment insurance (UI) payment for the week in which the claim was processed. This section deals with the demographics of beneficiaries in the state of Washington in the 2006 fiscal year (October 2005-September 2006).

Figure 5.5

Beneficiaries as Percent of Population by Age
Washington, FY 2006
Source: Employment Security Department and the Office of Financial Management

The Ages of UI Beneficiaries

Age	Beneficiaries	Percent	Total Employment Percent
≤24	15,572	7%	4%
25-34	48,664	23%	8%
35-44	55,445	27%	9%
45-54	54,566	26%	9%
≥55	33,471	16%	8%

As with the larger labor force, the age cohort with the most UI recipients was the 35-44 year olds (27 percent of all UI recipients). It was closely followed by the 45-54 year old group, then the 25-34 year old group. Interestingly the percent of beneficiaries against the whole population is about the same for all age cohorts 25 years and older. For the older cohorts, 8 to 9 percent of each group received UI (see *Figure 5.5*), whereas only 4 percent of the youngest cohort received benefits. It appears that once established in the workforce, age has relatively little impact on whether a worker claims UI benefits or not.

Figure 5.6

Beneficiaries by Race
Washington, FY 2006
Source: Employment Security Department and the Office of Financial Management

Race/Ethnicity	Beneficiaries	Beneficiaries Percent	Population Percent
White	147,197	71%	84%
Hispanic	27,487	13%	9%
Asian	10,641	5%	7%
Black	9,865	5%	4%
American Indian/Alaskan Native	4,713	2%	2%
Unknown/Multiracial	7,815	4%	3%

Chapter Five - Demographics of the Labor Force

White males were the most common UI recipient in Washington in terms of gender and race. Seventy-one percent of beneficiaries were white, and of those 63 percent were male. Overall 38 percent of recipients were female, somewhat less than their representation in the labor market – 49 percent.

Much of this gender disparity in UI claimants can be attributed to industry tendencies. As depicted in chapter four's *Figure 4.3* (unemployment beneficiaries relative to employment), the construction, administrative and waste, and manufacturing industries had disproportionately large



shares of UI beneficiaries. Likewise, remember from *Figure 5.3* that these particular industries employed relatively few females.

The percentage of Blacks and Hispanics receiving UI benefits was a little higher than their respective share of the population. The opposite is true for whites and Asians, with American Indians and multiracial groups receiving a percent share equal to their population share (see *Figure 5.6*).

Figure 5.7

Beneficiaries as Percent of Population by Education
Washington, FY 2006
Source: Employment Security Department/LMEA and the American Community Survey

		Percent of Beneficiaries	Percent of Population
Less than High School Graduate	32,556	16%	12%
High School Graduate/GED	83,695	40%	10%
Some College or Associate's Degree	64,257	31%	5%
Bachelor's Degree	20,687	10%	3%
Graduate or Professional Degree	6,307	3%	2%



When dividing UI beneficiaries up by educational attainment as depicted in *Figure 5.7*, it was found that the percent receiving benefits fell consistently as education

level rose. For example, 12 percent of those with less than a high school diploma received benefits at some point during the year. This ratio drops all the way to only 2 percent for those with a graduate or professional degree. Overall, high school diploma holders were the largest contingent, making up 40 percent of UI beneficiaries.

Local Employment Dynamics

The LED partnership is the cornerstone of a program designed to develop new information about local labor market conditions at low cost, with no added respondent burden, and with the same confidentiality protections afforded census and survey data. This partnership between state labor market information agencies and the Census Bureau supplies new measures – the Quarterly Workforce Indicators (QWI) – on labor markets that:

- are local, at the state, county, and sub county level;
- supply statistics on employment, job creation, turnover, and earnings by industry, age, and sex; and
- provide dynamic information on the rapidly changing economy.

Washington state-specific data can be found at:

<http://www.workforceexplorer.com?PAGEID=94&SUBID=135>

Chapter Six - Employment Projections

Employment Projections

Estimations and Projections

Occupational employment projections result from the conversion of industry employment to occupations. These conversions are based on occupation/industry ratios (staffing patterns) from the Occupational Employment Statistics (OES) survey conducted by the Labor Market and Economic Analysis (LMEA) branch in cooperation with



the Bureau of Labor Statistics (BLS) and the U.S. Department of Labor. The full OES survey has a three-year cycle. Occupational estimations and projections are subject to the limitations of the

OES survey, which includes both nonfarm employment and agriculture services. The survey is designed to provide data for Metropolitan Statistical Areas (MSA), but not Workforce Development Areas (WDA). BLS processes the initial survey results and produces staffing patterns at the MSA level. The direct use of such staffing patterns for WDAs could, however, create significant bias for a few reasons.

The sample was designed for MSAs. In cases where the survey has weak (or missing) cells for the areas, a substituted staffing pattern is used from similar areas or from other states. Such imputations could pose a significant impact on staffing patterns from the survey. In addition, the imputation is based on wage statistics and may not properly reflect the employment structures. Direct use of OES staffing patterns can also create significant bias for industries with high shares of non-covered employment which is not part of the survey (for example, religious organizations).

Our experience shows that more accurate results can be achieved by using initial survey responses without any imputation. The sample is weighted for each WDA based on employment for each industry. If the sample is weak (we used a cut-off of 20 percent), we can use the OES staffing pattern for the MSA which is closest to the WDA (like King for Snohomish). The national staffing pattern would be used only as a last resort. We had to use national staffing patterns for private households.

Initial survey responses are screened for the following possible problems: economic and non-economic code changes. If an employer code change occurred between the time of the survey and the time of estimations, it would create a mismatch between the sample and the universe. In such cases, we manually match them back. In the OES survey, King and Snohomish counties are combined into one MSA but they are different WDAs. Separating the sample (which was designed for one area) in two, could in this case, create significant biases. For example, the aerospace industry has the same largest employer in both areas, but with different occupational structures. For such industries, our choice is to get a full report from all employer units, even if it requires using an older sample (from the previous three-year survey cycle).

Some problems, however, are unavoidable and have a significant impact on final occupational estimations and projections. For example, doctors are not always employed by clinics or hospitals, but rather may be an employee of an independent association or self-employed. Therefore, staffing patterns for medical institutions are bound to be biased. This creates unexpected results not only for employment estimations, but also for wages. For example, OES wage estimations for Seattle area dentists tend to be lower than state averages. The result seems to be unrealistic, but it reflects the assumptions. Higher paid self-employed dentists in the Seattle area are excluded from the estimations.

Observed and predicted extremes in employment growth and indicators such as fastest growing occupations and shortage of skills can be used for placement and short-term training decisions. However, this should be limited for use in developing long-term education programs. There are two main reasons for this limitation. First, the general development of transferable skills is much more productive than trying to catch up with the shortage. Second, with more education targeting occupations (skills) with shortages, there is a higher probability that this will cause an oversupply in those occupations (skills).



Chapter Six - Employment Projections

The purpose of our projections is to provide a general outlook for industries and occupations in Washington. While they may not provide a complete picture, our projections do provide the best guess about Washington's industrial and occupational future. When making decisions, it is best not to limit your research to just one information source.

Industry Projections

The first step is to develop aggregated statewide industry projections. We use 48 industry groups (cells) for nonfarm employment⁶ and the Global Insight Model⁷ to run a few different scenarios. Important questions we consider are:

- How close are national employment trends to statewide trends?
- How accurately can national employment predict state employment changes?

Simple statistical analyses based on correlation, lagged correlation, and “in and out of sample” forecasting error⁸ identified different levels of dependency between national and statewide employment series⁹ (see *Figure 6.1*). As we can see, 20 of 48 state



industries have employment trends that are inconsistent with national trends; they depend significantly on regional conditions. For 12 industries, state employment has very

high levels of dependency on national employment trends. Results of such analyses have independent value. National estimations and forecasts for industries with high levels of dependency can be used as leading indicators for state estimations and forecasts. However, for industries with lower levels of dependency, national estimations and outlooks should not have a significant impact on local numbers.

Overall, the analysis shows that a significant number of local industries have specific employment trends.

Figure 6.1

State Employment Dependency on National Employment
Source: Employment Security Department/LMEA
U.S. Bureau of Labor Statistics

Industry	Level of Dependency
Accommodation and Food Services	very high
Administrative, Support, Waste Management	high
Apparel	low
Arts, Entertainment and Recreation	medium
Beverages and Tobacco Products	low
Chemicals	low
Computer and Electronic Products	medium
Construction	high
Educational Services	very high
Electrical Equipment & Appliances	low
Employment Services	medium
Fabricated Metal Products	medium
Federal Government	low
Finance and Insurance	very high
Food and Beverage Stores	low
Food Manufacturing	low
Furniture and Related Products	low
Gasoline Stations	high
Health Care and Social Assistance	very high
Information	high
Leather and Allied Products	low
Logging	medium
Machinery	low
Management of Companies and Enterprises	low
Mining	low
Miscellaneous Durable Manufacturing	low
Motor Vehicles and Parts Stores	very high
Nonmetallic Mineral Products	low
Other Information	low
Other Professional Support Services	very high
Other Retail	very high
Other Services	high
Paper and Paper Products	medium
Petroleum and Coal Products	low
Plastics and Rubber Products	medium
Primary Metals	medium
Printing and Related Support Activities	high
Professional, Scientific and Technical Services	very high
Publishing Industries	medium
Real Estate, Rental & Leasing	very high
State and Local Government	very high
Textile Mills	low
Textile Products	low
Transportation and Warehousing	very high
Transportation Equipment	low
Utilities	medium
Wholesale Trade	very high
Wood Products	low

⁶ The cells are the same as in the Global Insight Model.

⁷ According to www.globalinsight.com: Global Insight is a privately owned company formed from the two most respected economic and financial information companies in the world, DRI (Data Resources, Inc.) and WEFA (Wharton Econometric Forecasting Associates). With over 40 years of experience behind it, Global Insight provides the most comprehensive economic and financial coverage of countries, regions, industries, and markets available, using a unique combination of expertise, models, data, and software within a common analytical framework to support planning and decision making.

⁸ Forecasting errors are calculated based on simple regression with state employment as a dependent variable and national as independent. In-sample errors were estimated based on a full sample from 1990Q1 to 2005Q2, while out-of-sample errors were calculated for the last four quarters of available data.

⁹ All employment series for this analysis were seasonally adjusted.

Chapter Six - Employment Projections

Results of the Industry Projections

To compare structural changes in long-term employment projections for the main nonfarm industry sectors, we removed logging employment from nonfarm employment for the state¹⁰. The statewide and national industry structures are presented in *Figure 6.2*.

Figure 6.2

Estimated and Projected Statewide and National Structure of Industry Employment
Source: Employment Security Dept./LMEA, U.S. Bureau of Labor Statistics and the Industry Projections

Sectors	Washington State		National		
	Est. Empl. in 2004	Empl. Shares in 2004	Empl. Shares in 2014	Empl. Shares in 2004	Empl. Shares in 2014
Mining	3,300	0.1%	0.1%	0.4%	0.3%
Construction	164,100	6.1%	6.3%	5.3%	5.1%
Manufacturing	263,500	9.8%	9.1%	10.8%	9.0%
Wholesale Trade	119,300	4.4%	4.2%	4.3%	4.1%
Retail Trade	309,700	11.5%	10.9%	11.4%	11.1%
Transportation, Warehousing and Utilities	89,400	3.3%	3.3%	3.6%	3.5%
Information	92,400	3.4%	3.7%	2.4%	2.3%
Financial Activities	152,100	5.6%	5.3%	6.1%	5.9%
Prof. and Bus. Svcs.	302,200	11.2%	12.8%	12.4%	13.9%
Educ. and Health Svcs.	319,800	11.9%	12.2%	12.8%	14.7%
Leisure and Hospitality	255,200	9.5%	9.4%	9.4%	9.7%
Other Services	99,900	3.7%	3.6%	4.7%	4.6%
Government	523,900	19.4%	18.8%	16.4%	15.8%

Overall, the expected structural changes between national and statewide long-term industry projections¹¹ are similar. However, significant differences were seen in the information and construction sectors where the national forecast calls for a slight decrease in industry employment share. Statewide employment shares for these sectors are significantly higher than national shares in the base year. We expect further increases in these shares. We also expect a smaller drop in the manufacturing employment share for the state than nationwide. The state has smaller increases than the nation in the employment share for education and health services. There should be a slight decline in the projected leisure and hospitality employment share. National forecasts call for this share to increase. The difference in shares does not translate into a difference in the growth rate which is slightly above 1.6 percent for the nation, but slightly below 1.5 percent for the state.

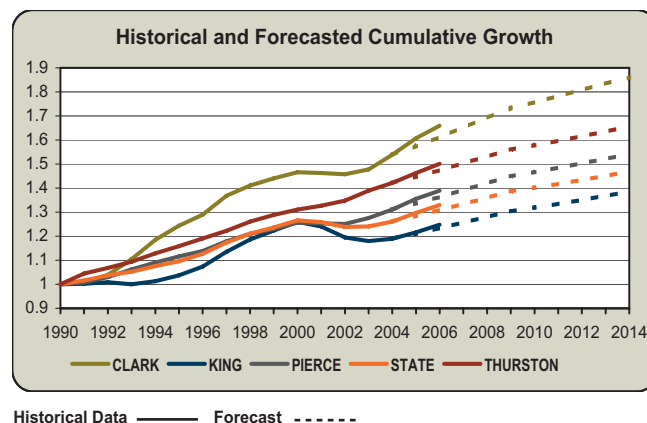
¹⁰ Logging is part of total nonfarm employment in our state projections. However, logging is part of agriculture for national projections.

¹¹ BLS does not develop medium, 5-year projections.

¹² The trend-cycle of historical CES data with preliminary estimations for September 2006 is used for this graph. The annual averages for 2006 are based on 9 months of available data.

Figure 6.3¹²

Historical and Forecasted Cumulative Growth for the State and Major Areas
Source: Employment Security Department/LMEA



Historical Data — Forecast - - - - -

For all areas, the forecasted medium- and long-term growth rates are lower than estimated rates for the last two years. The smallest difference was for King County. However, at this point, we do not have convincing evidence that the forecast has underestimated the growth rates. The actual rates from 2004 until now were high and it is reasonable to expect that they will fall more in line with forecasted rates.

The largest growth rate in industry employment projections is expected to be in Clark County with an annual growth rate of 1.9 percent. This is down from the previous ten-year average growth rate of 2.6 percent. Still, Clark County moved from second place in historical growth rates to the first. The lowest growth rate is expected to be in Garfield County, just 0.4 percent. The recent drop in employment in Columbia County is not reflected in the projections even though it is highly probable that employment will not be restored. For the most part, forecasted annual average growth rates for King County and Washington state (1.5 percent) are in line with the actual rate of 1.6 percent for the last ten years. Among large areas, Yakima and Snohomish are the only counties projected to have significantly higher growth rates for the next ten years compared to the previous ten-year period. Due to different techniques



Chapter Six - Employment Projections

used to smooth the projection results, the projected variance between area growth rates is significantly lower than the variance in the past ten years. It is unreasonable to expect small projections errors for detailed areas (especially for the small ones). Any unexpected event could turn results around for such areas. However, projections do represent a reasonable guess about possible employment growth in the area under normal conditions.

Results of Occupational Projections

Appendix 2 contains a comparison of occupational employment estimations and long-term projections at state and national levels. Compared with the nation, Washington has significantly lower employment shares for management and production occupations, but significantly higher shares for farming, science, computer, architecture, and engineering-related occupations.

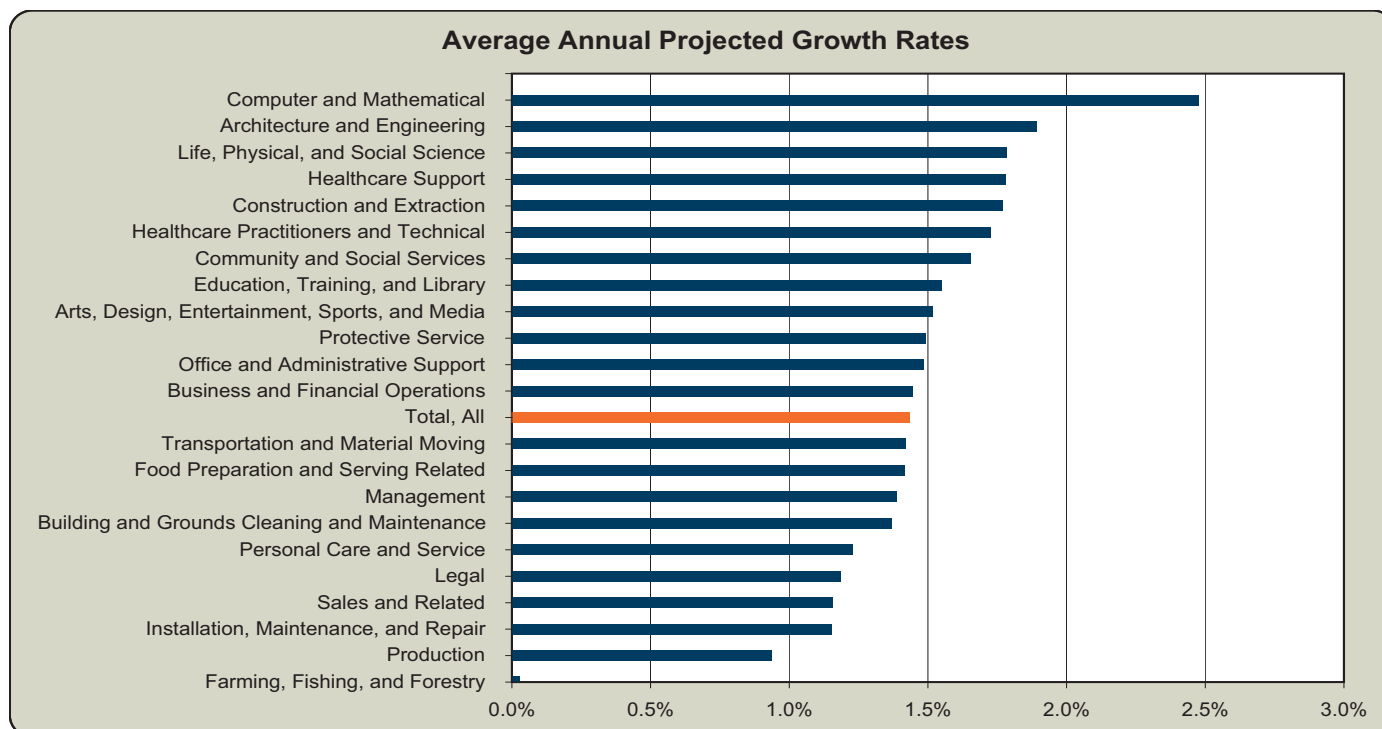
For structural changes in occupational employment, national projections are more optimistic for health-related occupations, personal care, business, and financial operations occupations. State projections are more optimistic for production, office and administrative support, architecture, and engineering occupations. For other occupational groups, there are no significant differences for

structural changes in employment. Both projections anticipate that the top three sectors for job openings (respectively) will be office and administrative support, sales related, and food preparation occupations. Combined, these three sectors represent 37.3 percent of total openings for the state and 36.4 percent for the nation. Overall, by 2014 the state and national occupational employment structures are expected to be closer than they were in 2004. The index of dissimilarity¹³ is decreasing from 7.3 percent in 2004 to 6.6 percent in 2014.

The average growth rate for total employment is 1.4 percent. Twelve occupational groups have projected growth rates larger than the average, while ten are projecting lower than average growth rates. The fastest growing group was computer and mathematical occupations, while the lowest was farming and production occupations.

The projected annual average growth rates for the major occupational groups in Washington state are presented in *Figure 6.4*.

Figure 6.4
Annual Average Projected Growth Rates for Washington State for 2004-2014
Source: Employment Security Department/LMEA; Occupational Projections



¹³ Index of dissimilarity between two vectors X and Y is defined as $\frac{1}{2} \sum |X-Y|$. The theoretical possible value of the index is between 0 and 1 (0 for fully equal structures and 1 for completely opposite structures).

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For all areas, the higher education levels¹⁴ are associated with higher wages.¹⁵ *Figure 6.5* contains the average employment and wage estimations (between the state and total of all areas¹⁶). All occupations are divided into the four educational categories.

Figure 6.5

Employment and Wages by Education Levels
 Source: Employment Security Department/LMEA
 U.S. Bureau of Labor Statistics

Education Level	Est. 2004	Avg. Annual Growth Rate 2004-2014	Avg. Annual Opening Due to Growth 2004-2014	Avg. Annual Total Openings 2014	Avg. Annual Wages (est. for June 2006)
Bachelor's Degree or Higher	657,302	1.71%	12,154	25,309	\$68,929
AA degree, Post-sec. Training, or Long-term on-the-job Training	733,183	1.49%	11,678	28,072	\$47,934
Moderate on-the-job Training (1-12 months)	549,532	1.44%	8,450	20,584	\$37,094
Short-term on-the-job Training (Short Demonstration up to One Month)	1,072,049	1.36%	15,514	50,710	\$24,643

The average gain for all areas (including state) in wages is largest with the transition from an associate's degree to a bachelor's degree, equal to \$20,996. The gain due to the transition from moderate on-the-job training to an associate's degree is \$10,839. There is a difference of \$12,451 in wages between moderate on-the-job training and short-term on-the-job training. As the educational requirements increase, employment growth is also expected to increase. Further analysis will focus on top-ranked¹⁷ occupations for different education categories.

Bachelor's Degree or Higher

Washington state and King County have the same top 15 occupations. *Figure 6.6* displays the top 15 occupations for Washington state and Seattle-King in ranking order. Five of them are classified as computer and mathematical occupations. Three are in architect and engineering occupations. The top three computer-related occupations are the same for both areas. King County's share for these occupations is about 84 percent of total state employment.

Figure 6.6

Top 15 Occupations Requiring a Bachelor's Degree or Higher
 Washington State and Seattle-King County Comparison
 Source: Employment Security Department/LMEA

Washington State			Seattle-King County	
Rank	SOC	Title	SOC	Title
1	151031	Computer Software Engineers, Applications	151031	Computer Software Engineers, Applications
2	151021	Computer Programmers	151021	Computer Programmers
3	151032	Comp. Software Engineers, Syst. Software	151032	Comp. Software Engineers, Syst. Software
4	193021	Market Research Analysts	193021	Market Research Analysts
5	172011	Aerospace Engineers	271014	Multimedia Artists and Animators
6	172051	Civil Engineers	172051	Civil Engineers
7	271014	Multimedia Artists and Animators	273042	Technical Writers
8	131111	Management Analysts	131111	Management Analysts
9	131071	Empl, Recruitment, and Placement Spec.	172011	Aerospace Engineers
10	151081	Ntwrk Systems and Data Comm. Analysts	171011	Architects, Except Landscape and Naval
11	273042	Technical Writers	131071	Empl, Recruitment, and Placement Spec.
12	151071	Network and Comp. Systems Administrators	151081	Ntwrk Systems and Data Comm. Analysts
13	171011	Architects, Except Landscape and Naval	191042	Medical Scientists, Except Epidemiologists
14	191042	Medical Scientists, Except Epidemiologists	113021	Computer and Info. Systems Managers
15	113021	Computer and Info. Systems Managers	151071	Network and Comp. Systems Administrators

¹⁴ The education categories for specific occupations are an aggregated version of education clusters from the Occupational Outlook Handbook, Bureau of Labor Statistics. They are estimates of typical preparation levels required for the occupation.

¹⁵ Wages are not part of the occupational projections. Source data for wages come from the Occupational Employment Statistics (OES) survey and are subject to restrictions and limitations of the survey. Agricultural employment is excluded except for agricultural services. Self-employment and Private Households are not included in the survey. All wage estimations are adjusted as of June 2006. Wages for specific workforce areas are based on survey wages from the most closely related metropolitan areas. For more information regarding OES programs, go to http://www.bls.gov/oes/oes_data.htm.

¹⁶ Occupational employment estimations and projections for local areas do not add up to the state totals.

¹⁷ The occupations are ranked based on the average of three criteria: average annual growth rate, number of job openings due to growth, and total number of job openings due to growth and replacement.

Chapter Six - Employment Projections

Twelve of the top 15 occupations in Snohomish are equally distributed among management, business, and architect and engineering. With the exception of Snohomish and Seattle-King, education occupations make up more than one-third of the remaining areas' 15 top-ranked occupations.

Top Occupations by WDA and Education Level

Occupations expected to be in highest demand over the next ten years in Washington state and local areas are shown in *Figure 6.7*.

Figure 6.7

Bachelor's Degree or Higher

Source: Employment Security Department/LMEA; Occupational Projections

WDA Title	SOC Title
State	Computer Software Engineers, Applications
Olympic Consortium	Computer Programmers
Pacific Mountain	Rehabilitation Counselors
Northwest	Accountants and Auditors
Snohomish	Aerospace Engineers
Seattle-King	Computer Software Engineers, Applications
Pierce County	Accountants and Auditors
Southwest	Writers and Authors ¹⁸
North Central	Rehabilitation Counselors
South Central	Substance Abuse and Behavioral Disorder Counselors
Eastern Washington	Electrical Engineers
Benton-Franklin	Computer and Information Scientists, Research
Spokane	General and Operations Managers

AA Degree, Post-Secondary Training, or Long-Term On-the-Job Training

Three of Washington's top 15 occupations, requiring an associate's degree or similar, are classified as construction and extraction occupations. Healthcare practitioners and technical occupations and computer and mathematical occupations account for another four top occupations. Ten of the top 15 occupations in Seattle-King are also in the state's top 15 occupations. The same construction and extraction occupations in Washington's top 15 are also found in Seattle-King's top 15. The same goes for the computer support occupations; Seattle-King area's influence over Washington's economic health is evident.

¹⁸ This occupation is highly related to Advertising and Related Services industry which had significant growth between 2004 and 2005Q2. The high ratio of self-employment for this occupation made this growth significant in terms of the number of jobs.

The majority of jobs in the top 15 occupations for all areas fall within healthcare, construction, personal care, and office and administration. *Figure 6.8* shows the top occupations by WDA requiring an associate's degree, post-secondary training, or long-term on-the-job training.

Figure 6.8

AA Degree, Post-secondary Training, or Long-term On-the-Job Training

Source: Employment Security Department/LMEA; Occupational Projections

WDA Title	SOC Title
State	Computer Support Specialists
Olympic Consortium	Medical Secretaries
Pacific Mountain	Medical Secretaries
Northwest	Machinists
Snohomish	Aircraft Struc., Surf., Rigging, and Sys. Assemblers
Seattle-King	Computer Support Specialists
Pierce County	Carpenters
Southwest	Computer Support Specialists
North Central	Semiconductor Processors
South Central	Registered Nurses
Eastern Washington	Medical Secretaries
Benton-Franklin	Managers, All Other
Spokane	Medical Transcriptionists

Moderate On-the-Job Training (1-12 Months)

Ten of Washington's top 15 moderate on-the-job training occupations are distributed equally between construction and extraction and office and administrative occupations. *Figure 6.9* shows the top occupation by WDA requiring moderate on-the-job training.

Figure 6.9

Moderate On-the-Job Training

Source: Employment Security Department/LMEA; Occupational Projections

WDA Title	SOC Title
State	Painters, Construction and Maintenance
Olympic Consortium	Dental Assistants
Pacific Mountain	Customer Service Representatives
Northwest	Roofers
Snohomish	Painters, Construction and Maintenance
Seattle-King	Painters, Construction and Maintenance
Pierce County	Roofers
Southwest	Dental Assistants
North Central	Cooks, Institution and Cafeteria
South Central	Painters, Construction, and Maintenance
Eastern Washington	Painters, Construction, and Maintenance
Benton-Franklin	Dental Assistants
Spokane	Team Assemblers

Chapter Six - Employment Projections

Short-Term On-the-Job Training (Short Demonstration up to One Month)

The main occupational group for the top 15 short-term preparation occupations for all areas but two, North Central and Benton-Franklin, is office and administration. North Central is largely concentrated in transportation and materials moving occupations while Benton-Franklin has a higher portion of workers in food preparation and serving-related occupations (five of its top 15). *Figure 6.10* includes the top occupation by WDA requiring short-term on-the-job training.

Figure 6.10

Short-Term On-the-Job Training
Source: Employment Security Department/LMEA;
Occupational Projections

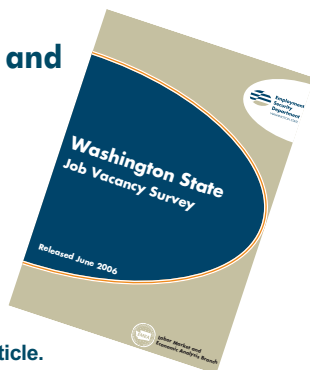
WDA Title	SOC Title
State	Landscaping and Groundskeeping Workers
Olympic Consortium	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
Pacific Mountain	Personal and Home Care Aides
Northwest	Landscaping and Groundskeeping Workers
Snohomish	Landscaping and Groundskeeping Workers
Seattle-King	Security Guards
Pierce County	Laborers and Freight, Stock, and Material Movers, Hand
Southwest	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
North Central	Personal and Home Care Aides
South Central	Landscaping and Groundskeeping Workers
Eastern Washington	Landscaping and Groundskeeping Workers
Benton-Franklin	Waiters and Waitresses
Spokane	Bill and Account Collectors

Occupational Projections and the Job Vacancy Survey

The Job Vacancy Survey (JVS) provides unique up to date information about the current state of the labor market. Detailed results can be found at:

<http://www.workforceexplorer.com/article.asp?ARTICLEID=6791>

Survey results allow us the opportunity to compare Washington's occupational employment projections to another source of occupational information. The fundamental difference between the two is that the JVS survey gives a snapshot picture of vacancies at one point in time,



while projections estimate the annual number of openings. In addition, since JVS represents one month of the year, it exhibits a high impact of seasonal variations not seen in the projections data. Occupational projections estimate anticipated changes in employment, while job vacancies from JVS do not necessarily translate to hiring. Due to these differences, data are not directly comparable. However, relative rankings of occupations can be used to apply a “reality check” on both.



Rank correlation was used to make comparisons. After testing at multiple levels of detail, it was found that the hypothesis of independence is rejected with the probability not less than 99.99 percent (for 95 percent confidence level) for 3-, 4-, and 6-digit Standard Occupational Classification levels of detail. In other words, the two data sets are highly related and tell similar stories about employers' demands for certain occupations.

The regional structure of job openings in the Job Vacancy Survey and short-term projections (see *Figure 6.11*) is close with index dissimilarity less than six percent.

Figure 6.11

Regional Structure of Job Openings
Source: Employment Security Department/LMEA;
Job Vacancy Survey; Occupational Projections

WDA	JVS	Short-Term Projections
Olympic Consortium	5.2%	4.0%
Pacific Mountain	4.5%	5.2%
Northwest	5.7%	5.7%
Snohomish County	8.4%	9.8%
Seattle-King County	44.5%	40.8%
Pierce County	8.7%	9.6%
Southwest Washington	5.1%	6.2%
North Central	4.1%	3.0%
South Central	3.0%	3.5%
Eastern Washington	2.0%	2.5%
Benton-Franklin	2.4%	2.7%
Spokane	6.4%	6.9%

Chapter Six - Employment Projections

The occupational structure of job openings for short-term projections and JVS (see *Figure 6.12*) differ significantly more than the regional structure with an index dissimilarity of 16.2 percent. This indicates similar structures. The



Job Vacancy Survey indicates a significantly larger share of openings (compared with short-term projections) for healthcare practitioners and technical occupations (three times), computer and

mathematical occupations (1.64 times), farming, fishing, and forestry occupations (1.61 times) and healthcare support occupations (1.54 times). The share of openings for protective service occupations, food preparation and serving-related occupations and office and administrative support occupations are significantly larger for short-term projections than they are for the Job Vacancy Survey.

Figure 6.12

Occupational Structure of Job Openings

Source: Employment Security Department/LMEA;
Job Vacancy Survey; Occupational Projections

SOC	Occupational Title	Projections	JVS
110000	Management	2.9%	3.7%
130000	Business and Financial Operations	4.1%	5.7%
150000	Computer and Mathematical	3.4%	5.6%
170000	Architecture and Engineering	3.5%	3.8%
190000	Life, Physical, and Social Science	1.6%	1.6%
210000	Community and Social Services	1.3%	1.5%
230000	Legal	0.5%	0.4%
250000	Education, Training, and Library	5.0%	3.7%
270000	Arts, Design, Entertain., Sports, and Media	1.6%	1.5%
290000	Healthcare Practitioners and Technical	3.7%	11.2%
310000	Healthcare Support	2.0%	3.0%
330000	Protective Service	2.1%	0.9%
350000	Food Preparation and Serving Related	12.5%	8.6%
370000	Bldg. and Grounds Cleaning and Maint.	3.2%	2.7%
390000	Personal Care and Service	3.8%	3.8%
410000	Sales and Related	12.4%	9.5%
430000	Office and Admin. Support	14.1%	10.4%
450000	Farming, Fishing, and Forestry	1.4%	2.2%
470000	Construction and Extraction	6.3%	4.4%
490000	Installation, Maintenance, and Repair	3.5%	3.4%
510000	Production	5.0%	4.5%
530000	Transportation and Material Moving	6.2%	7.9%

Employment projections concentrate more on expected employment changes and number of jobs filled. On the other hand, JVS concentrates on the number of announced vacant positions, but not necessarily filled positions. For example, the estimated (based on OES survey) annual average em-

ployment growth for the last three years for healthcare-related occupations (2003-2005) was 3,754, computer and mathematical occupations were estimated at 3,477 jobs. We predict annual growth of 4,352 for healthcare-related occupations and 3,542 for computer and mathematical occupations. This translates to 7,907 total annual openings due to growth and net replacement for healthcare-related occupations and 4,730 for computer and mathematical occupations. JVS estimations of openings are 11,593 for healthcare-related occupations and 4,558 for computer and mathematical occupations. JVS and occupational projections both contain the same 15 occupations among their top 25 occupations.

Links to Download Detailed Information

Detailed methodology - 2006 Washington state employment projections:

http://www.workforceexplorer.com/admin/uploadedPublications/7164_ProjectionsAug_06.pdf

Medium and long-term industry projections:

http://www.workforceexplorer.com/admin/uploadedPublications/5004_inclongp.xls

Short-term industry projections:

http://www.workforceexplorer.com/admin/uploadedPublications/5003_indshortp.xls

Industry control total files for combined data:

http://www.workforceexplorer.com/admin/uploadedPublications/4957_ictall.xls

Medium and long-term projections:

http://www.workforceexplorer.com/admin/uploadedPublications/1608_1608_long.xls

Short-term projections are available at:¹⁹

http://www.workforceexplorer.com/admin/uploadedPublications/1609_short.xls

The staffing patterns used for employment estimations and projections can be downloaded at:

http://www.workforceexplorer.com/admin/uploadedPublications/4959_ocup_indmatrixes.xls

Estimations and projections of occupational employment:

http://www.workforceexplorer.com/admin/uploadedPublications/4960_alloccupproj.xls

http://www.workforceexplorer.com/admin/uploadedPublications/1647_longoccup.xls

http://www.workforceexplorer.com/admin/uploadedPublications/1646_shortoccup.xls

¹⁹ Due to confidentiality, staffing patterns for suppressed industries are not published.

Chapter Seven - Wages and Income

Wages and Income

Washington enjoyed strong economic growth in the latter half of the 1990s, which was reflected in higher wages and incomes. With the onset of the 2001 recession, both wages (for individual jobs) and income (at the household and family level) declined, and for the most part have yet to return to pre-recession levels.

Hourly Wages

Washington is one of four states in the country that collects data on hours worked on a job, allowing the calculation of an average hourly wage, median hourly wages, and a mapping of the full spectrum of hourly wages for over 3 million jobs each year.



It should be no surprise that during the recession, growth in hourly wages stagnated. However, the recovery has brought little change in the average or median wages.

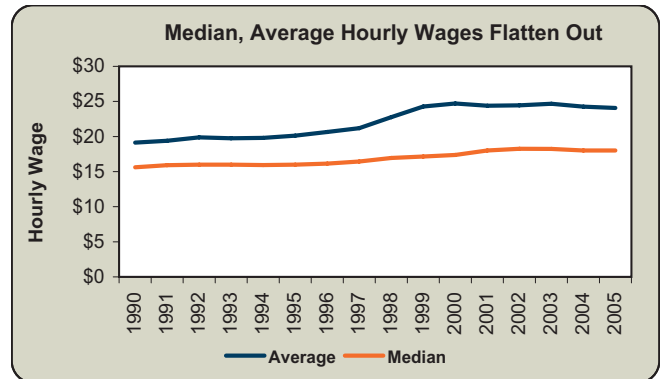
- Average hourly wages are calculated by dividing total payroll by total hours worked. The average reached an inflation-adjusted \$24.70 per hour in 2000, at the height of stock options, and came within a few pennies of that figure in 2003, before declining over the past two years to \$24.06 in 2005. Some of the decline has been due to regulations which eliminated the inclusion of stock options in the wage reports from employers.
- The median hourly wage is the wage at which half of all jobs pay more, and half pay less.²⁰ The median hourly wage in 2005 was \$18.01 per hour, a penny less than the previous year and almost a quarter below the inflation-adjusted 2002 peak of \$18.25 per hour.
- The average hourly wage was 23 percent above the median in 1990, before rising to 42 percent in 2000, and has been close to 34 percent higher over the past five years.

²⁰ Jobs in this case are calculated on an FTE basis, with 2,080 hours per year equal to one full-time job.

Figure 7.1

Average Hourly Wage, and Median Hourly Wage, Adjusted for Inflation, 1990-2005

Source: Employment Security Department/LMEA



Wage Distribution

In 2005, the lowest-paid 10 percent of jobs averaged \$7.80 per hour (see *Figure 7.2*) – eight cents (1 percent) below the previous year and fifteen cents below 2003 after adjustment for inflation. The best-paid 10 percent of jobs averaged \$72.87 per hour, \$3.10 per hour lower than in the previous year, a 4 percent decline, and well below the 1999 peak of \$92.87 per hour. The decline of stock options in the intervening years, and the elimination of stock options from the reporting system in 2004 (only partially implemented that year, but fully implemented in 2005), had an impact on the upper end.

If stock options were removed from the 2004 data, then it is likely that the highest decile of earners enjoyed an increase in 2005. For the other deciles, there is almost a linear relationship, with the lowest end of the scale declining by 1 percent, the median almost breaking even, and the percentage gain positive and increasing as one proceeds up.



The disparity in wages widened from 1990 (the first year data are available) through 2000, but has narrowed since then. In 1990, the average wage for the top 10 percent of jobs was 7.6 times the average wage for the lowest-paid 10 percent (the 90/10 ratio). By 2005, that ratio had grown to 12.4, before narrowing in the past five years to

Chapter Seven - Wages and Income

9.3 – still a widening of 23 percent. The gap between the median wage and the upper 10 percent similarly expanded and contracted, and is now at 4.0, a 26 percent increase. The distance between the median and the lower 10 percent, in contrast, has fluctuated to a much smaller degree, stretching from 2.4 to 2.5 before closing to 2.3, due to the increase and indexing of the minimum wage in recent years (see *Figure 7.4*). If King County is removed from the picture, the results are somewhat different. There is still a modest increase in inequality across the wage spectrum, but it is not as pronounced.

Figure 7.2

Average Hourly Wage, by Decile (10 percent) of FTE Jobs, 2005
Source: Employment Security Department/LMEA

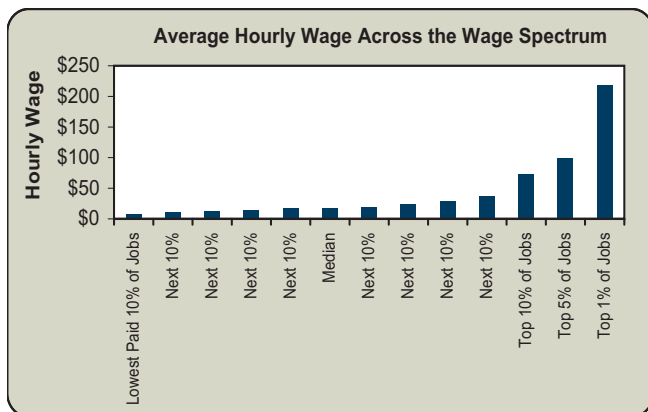


Figure 7.3

Increase in Average Hourly Wage, by Decile (10 percent) of FTE Jobs
Source: Employment Security Department/LMEA

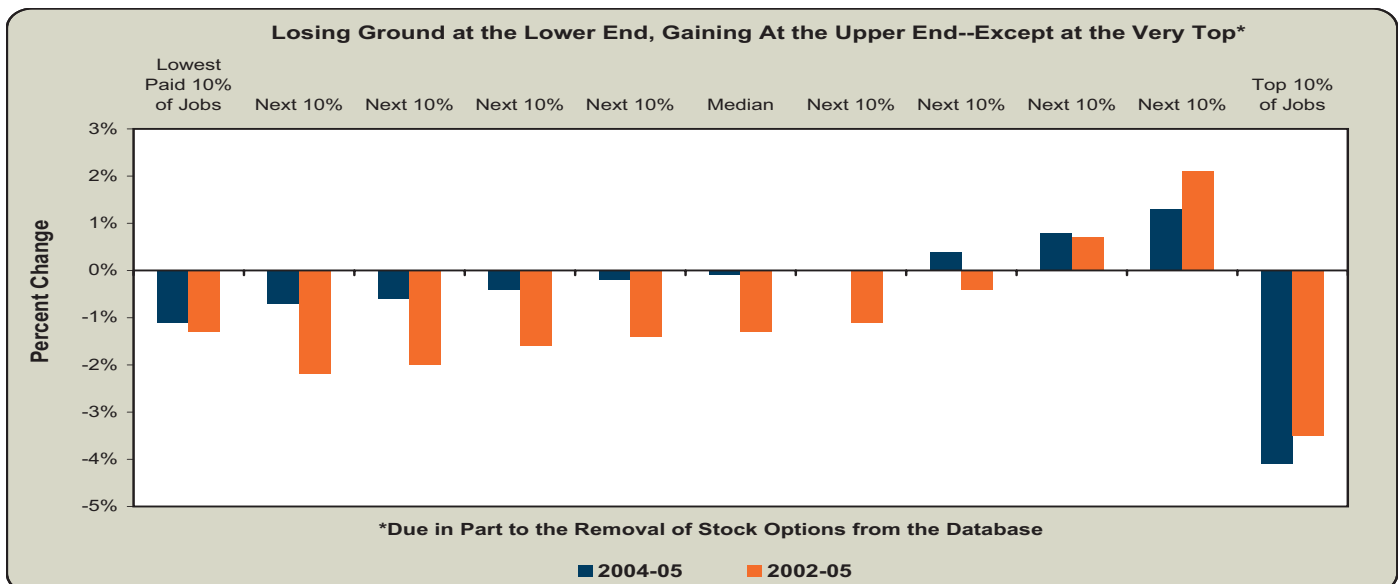


Figure 7.4

Measuring the Wage Gap, 1990 to 2005, in 2005 Dollars
Source: Employment Security Department/LMEA

Average Wage for...	All Counties		All Except King	
	1990	2005	1990	2005
Lowest-Paid 10 Percent of Jobs	\$6.63	\$7.80	\$6.38	\$7.60
Median Job	\$15.62	\$18.01	\$14.29	\$16.11
Highest-paid 10 Percent of Jobs	\$50.34	\$72.87	\$43.12	\$56.07
Highest 10/Lowest 10 Ratio	7.6	9.3	6.8	7.4
Highest 10/Median Ratio	3.2	4.0	3.0	3.5
Median/Lowest 10 Ratio	2.4	2.3	2.2	2.1

Wages by Area

Hourly wages vary widely across the state. In 2005, King County once again topped the state with a median wage of \$21.31. Only two other counties – Benton and Snohomish – bested the state median, while Thurston matched it. Excluding King, the rest of the state had a median hourly wage of \$16.11. Columbia County narrowly edged Okanogan for the lowest median, at \$11.18. Out of the fifteen lowest-wage counties, fourteen are located east of the Cascades.

Only fourteen counties enjoyed an increase in their median hourly wage in 2005; eight of these were on the east side, and ten were rural counties. Klickitat County's median, which took a dive a few years ago after the closure of the aluminum smelter in Goldendale, jumped by 74 cents, while in Adams County the median rose by 61 cents. Columbia County suffered a 46-cent decline.

Chapter Seven - Wages and Income

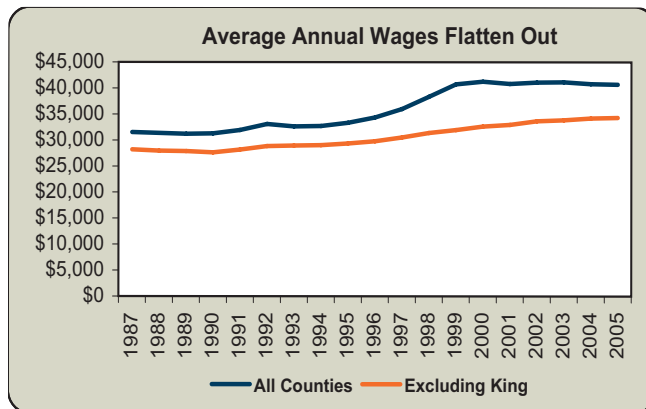
Since 1990, the state median hourly wage has increased by 15 percent after adjustment for inflation. Many counties had larger increases – the San Juans at 31 percent, Asotin at 29 percent. Columbia County also did better than average. Cowlitz County's median rose by less than 1 percent, while Ferry (-5 percent) and Klickitat (-7 percent) both suffered declining wages.

Average Annual Wages

Most jobs are covered by unemployment insurance. In 2005, monthly covered employment averaged almost 2.8 million jobs, with a total payroll of \$112.6 billion. Dividing the two, the average annual wage comes out to be \$39,021. This was slightly higher than the 2002 inflation-adjusted figure, but lower than in 2000. Annual wages have been flat since 1999, as shown in *Figure 7.5*.

Figure 7.5

Average Annual Wage, Adjusted for Inflation, 1987-2005
Source: Employment Security Department/LMEA



If King County is taken out of the picture, things look different – the average annual wage has increased steadily since the early 1990s.

Personal Income

Personal income data are compiled by the U.S. Bureau of Economic Analysis. It reflects pre-tax income received by or on behalf of individuals from all sources:

- 1) Wages and salaries
- 2) Proprietors' income
- 3) Investment income
- 4) Government transfer payments
- 5) Employer payments for employee insurance ("other labor income")

Adjustments are made for contributions to social security and for cross-border commuters, so that income is truly residence-based.

Pension checks are not tracked in personal income; instead, the net earnings of pension funds are allotted to counties and states in proportion to actual payments of interest and dividends.



The most commonly used indicator from personal income is per capita income, which equals total personal income divided by population. The advantages of using per capita income as an economic measure include its broad definition (more than wages) and its comparability across all geographic areas. The main disadvantage is that it is an average, while income is highly skewed.

All personal income data have been adjusted for inflation using the U.S. implicit price deflator for personal consumption.

State and Metro Areas, 2005

After growing rapidly during the 1990s, inflation-adjusted per capita personal income peaked in Washington in 2000 at \$35,431 (in 2005 constant dollars), 6.5 percent above the national average. Income then declined over the next three years, more so than for the rest of the nation. In 2004, the Microsoft dividend gave some pocketbooks a huge shot in the arm; as a result, per capita income jumped by 3 percent that year before falling in the next. If the dividend is factored out, per capita income increased in both years. The 2005 preliminary estimate of \$35,234 was still below the 2000 peak and was 2.1 percent above the nation as a whole – the smallest margin since 1990.

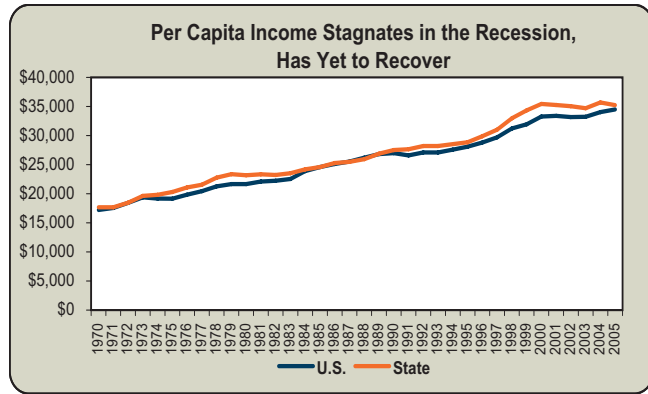


Chapter Seven - Wages and Income

Figure 7.6

Adjusted for Inflation Per Capita Income in the U.S. and Washington State, 1971 through 2005

Source: U.S. Bureau of Economic Analysis



Personal income is the sum of earned income (from owning a business or holding a job), investment income, and transfer payments, chiefly from government programs such as social security and unemployment insurance. Each of these three contributed to the rapid climb in Washington's per capita income during the 1990s. Over the past five years, however, growth in per capita earnings disappeared, and per capita investment income declined. Only transfer payments continued to expand, mostly in Medicare, Medicaid, and social security payments. One type of transfer payment that has not increased – welfare, which on a per capita basis has been cut in half over the past decade, despite an increase in the poverty rate.

Figure 7.7

Selected Per Capita Transfer Payments, State of Washington, Adjusted for Inflation

Source: U.S. Bureau of Economic Analysis

Type of Payment	1995	2000	2005	Average Annual Growth Rate	
				2000-2005	1995-2005
Total Transfer Payments	3,879	4,209	4,739	2.4%	2.0%
Retirement and Disability	1,656	1,769	1,943	1.9%	1.6%
Medical	1,271	1,444	1,789	4.4%	3.5%
Income Support	397	344	403	3.2%	0.2%
Family Support (Welfare)	137	68	57	-3.6%	-8.4%
Food Stamps	93	46	89	14.0%	-0.5%
Unemployment Insurance	206	180	132	-5.9%	-4.3%
Veterans' Benefits	118	141	173	4.2%	3.9%

Preliminary estimates were also available for metropolitan areas for 2005. All enjoyed an increase in real per capita income, and all but Cowlitz County reached their all-time high.

Regions and Counties, 2004

Personal income data at the county level become available a year later than the state due to the enormous amount of source data that are analyzed (e.g. all Schedule C tax returns from the IRS).

Going to Extremes

Welcome to Loving County, Texas, home to 51 residents and a couple of cattle ranches, where the drinking water is piped in and the per capita income, just shy of \$90,000, was higher than any other county in the nation in 2004. Did we forget to mention the oil fields? The best Washington could do was the relatively-impooverished King County, at \$49,286. That was an 8 percent jump above 2003, with the Microsoft dividend playing a big role. King ranked 29th among U.S. counties. San Juan County was once again the only other county in the state to outdo the state average, at \$40,457. At the other extreme was Ferry County's \$19,336 – still far above Starr County, Texas, at \$11,362.



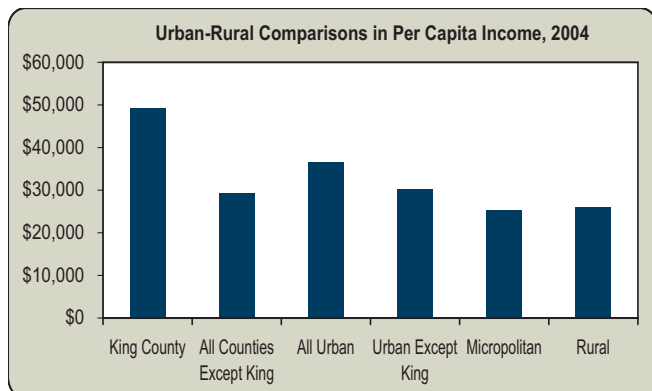
If King County is taken out of the equation, per capita income for the rest of the state was \$29,234. Nine counties topped that figure, all of them metro areas with the exception of San Juan and Jefferson.

Urban vs. Rural

Rural counties collectively had a per capita income of \$25,862, slightly above the average for micropolitan areas, but well below metro areas and one of the state's metropolitan divisions (King-Snohomish). If the new urban counties are included, that average slips very slightly. The gap between King and other urban counties, inflated to \$20,000 in 2004, was much larger than that between other urban and rural counties, still substantial at \$4,300.

Figure 7.8

2004 Per Capita Income for Selected Sub-State Areas
 Source: U.S. Bureau of Economic Analysis



In Skamania County, 57 percent of earned income came from residents working in a different county. That was on a net basis, which means that the actual incoming flow was higher, but there was also a small offsetting outflow due to residents of other counties working in Skamania. Douglas, Asotin, Wahkiakum, Mason, and Clark all had between 30 and 40 percent net inflows. On the other hand, in King County there was a net outflow equal to 18 percent of its earned income. Whitman, Chelan, and Walla Walla were also in the double digits.

Household Income, Family Income, and Poverty Rates

Annual estimates of median and family income and poverty rates are now available through the Census Bureau's American Community Survey. The Census Bureau recommends looking at a three-year trend as opposed to year-to-year fluctuations.

Median household income for the state was \$49,262 in 2005, showing little change through the 2002-2005 period but well-below the inflation-adjusted 2000 Census figure. Washington still exceeded the national average by \$3,000 or six percent. Median family income, at \$60,077, has also held steady since 2002, but was down two percent from the 2000 Census. Non-family households – most of which are comprised of one person living alone – took the brunt of the decline in household income. The poverty rate was estimated at 11.9 percent in 2005, higher than the 2000 rate of 10.6 percent.

Coming in January
Fall 2006
Job Vacancy Survey Report
2006 Washington
Employee Benefits Report

The Fall 2006 Job Vacancy Survey Report, a statewide measure of vacant positions and their characteristics.

The 2006 Washington Employee Benefits Report, which provides estimates of the nature and number of firms that offer benefits as well as the number of workers receiving benefits.

Do you ever wonder why the unemployment rate goes up when employment increases? Data come from different surveys. We will provide not only a comparison of employment from the Current Employment Statistics Program and the Local Area Unemployment Statistics Program, but also provide a series that takes into account both definitions.

State forecasts cannot be provided in a vacuum. It is important to take into account both the global and national environment. Our upcoming analysis will show the bridge between national and state employment forecasting.

APPENDIX 1

Nonfarm Payroll Growth by Industry in Washington State and Relative Contribution Share

	Oct 05 to Oct 06		Percent Share		
	Difference	% change	2004	2005	2006
Total Nonfarm	101,200	3.6%			
Total Private	96,100	4.2%	93.5%	96.0%	95.0%
Goods Producing	32,500	7.0%	20.9%	32.8%	32.1%
Natural Resources and Mining	100	1.1%	1.4%	-0.8%	0.1%
Logging	-200	-3.7%	0.9%	-0.7%	-0.2%
Construction	18,000	10.0%	14.7%	19.4%	17.8%
Construction of Buildings	5,000	10.5%	1.9%	6.0%	4.9%
Heavy and Civil Engineering	2,400	11.1%	2.1%	1.3%	2.4%
Speciality Trade Contractors	10,600	9.5%	10.7%	12.1%	10.5%
Manufacturing	14,400	5.2%	4.7%	14.2%	14.2%
Durable Goods	12,000	6.1%	6.7%	15.2%	11.9%
Wood Product Manufacturing	400	2.0%	2.8%	1.1%	0.4%
Nonmetallic Mineral Product Manufacturing	800	8.2%	0.7%	0.7%	0.8%
Primary Metal Manufacturing	200	3.9%	0.0%	0.4%	0.2%
Fabricated Metal Product Manufacturing	1,100	5.9%	1.4%	1.2%	1.1%
Machinery Manufacturing	1,200	8.7%	1.4%	0.9%	1.2%
Computer and Electronic Product Manufacturing	700	3.2%	-0.7%	0.0%	0.7%
Electrical Equipment and Appliance Mfg.	0	0.0%	0.4%	0.1%	0.0%
Transportation Equipment Manufacturing	6,900	8.4%	0.4%	10.2%	6.8%
Aerospace Product and Parts Manufacturing	6,100	8.9%	-1.6%	9.4%	6.0%
Ship and Boat Building	400	5.6%	0.7%	0.8%	0.4%
Other Durable Goods Manufacturing	700	3.5%	0.4%	0.5%	0.7%
Non Durable Goods	2,400	3.0%	-1.9%	-0.9%	2.4%
Food Manufacturing	1,100	3.3%	-0.2%	-0.8%	1.1%
Petrol and Coal Prods. Mfg. and Plastics and Rubber Prods. Mfg.	300	2.4%	0.5%	0.4%	0.3%
Paper Manufacturing	-100	-0.8%	-1.4%	-0.8%	-0.1%
Printing and Related Support Activities	0	0.0%	-0.4%	0.0%	0.0%
Services Providing	68,700	2.9%	79.1%	67.2%	67.9%
Trade, Transportation and Utilities	17,600	3.3%	20.7%	12.9%	17.4%
Wholesale Trade	4,400	3.6%	6.8%	3.1%	4.3%
Retail Trade	9,000	2.8%	7.5%	12.0%	8.9%
Motor Vehicle and Parts Dealers	400	1.0%	0.7%	0.1%	0.4%
Furniture and Home Furnishing Stores	300	2.5%	0.4%	0.5%	0.3%
Building Material and Garden Supply Stores	1,700	6.0%	1.1%	2.1%	1.7%
Food and Beverage Stores	2,000	3.2%	0.4%	2.9%	2.0%
Health and Personal Care Stores	200	1.3%	0.2%	0.7%	0.2%
Clothing and Clothing Accessories Stores	900	3.3%	1.2%	2.7%	0.9%
General Merchandise Stores	1,300	2.3%	3.3%	1.7%	1.3%
Other Retail Trade	2,200	2.9%	0.4%	1.2%	2.2%
Transportation, Warehousing and Utilities	4,200	4.7%	6.3%	-2.1%	4.2%
Utilities	100	2.2%	0.0%	0.1%	0.1%
Transportation and Warehousing	4,100	4.8%	6.3%	-2.3%	4.1%
Air Transportation	-300	-2.7%	0.2%	-1.5%	-0.3%
Water Transportation	300	9.7%	0.0%	-0.1%	0.3%
Truck Transportation	800	3.3%	1.9%	1.1%	0.8%
Support Activities for Transportation	1,100	6.1%	1.6%	1.1%	1.1%
Support Activities for Water Transportation	500	8.8%	0.2%	-0.1%	0.5%
Warehousing and Storage	1,500	17.0%	1.4%	0.3%	1.5%

APPENDIX 1

Nonfarm Payroll Growth by Industry in Washington State and Relative Contribution Share

	Oct 05 to Oct 06		Percent Share		
		Difference % change	2004	2005	2006
Total Nonfarm (Continued)					
Information	7,800	8.2%	0.9%	2.5%	7.7%
Newspaper, Book and Directory Publishers	100	0.9%	-0.7%	-0.1%	0.1%
Software Publishers	5,200	12.5%	2.5%	2.7%	5.1%
Broadcasting, except Internet	0	0.0%	-0.2%	-0.1%	0.0%
Telecommunications	-100	-0.4%	-1.9%	-1.1%	-0.1%
Wired Telecommunications Carriers	-400	-5.3%	-1.2%	-0.7%	-0.4%
Wireless Telecommunications Carriers	700	5.5%	0.4%	-0.5%	0.7%
Financial Activities	1,200	0.8%	-1.8%	4.4%	1.2%
Finance and Insurance	-500	-0.5%	-1.9%	3.6%	-0.5%
Credit Intermediation and Related Activities	-500	-0.9%	-0.9%	3.2%	-0.5%
Insurance Carriers and Related Activities	-300	-0.8%	-0.9%	0.3%	-0.3%
Real Estate and Rental Leasing	1,700	3.4%	0.2%	0.8%	1.7%
Professional and Business Services	18,500	5.8%	24.0%	18.1%	18.3%
Professional, Scientific and Technical Services	7,100	4.9%	7.4%	7.6%	7.0%
Legal Services	0	0.0%	0.0%	-0.1%	0.0%
Accounting and Bookkeeping Services	400	2.6%	0.0%	1.1%	0.4%
Architectural and Engineering Services	1,500	4.5%	3.0%	0.8%	1.5%
Computer Systems Design and Related Services	800	3.4%	0.4%	2.8%	0.8%
Management of Companies and Enterprises	900	2.7%	0.9%	0.4%	0.9%
Admin and Support and Waste Mgmt. and Remediation	10,500	7.4%	15.8%	10.1%	10.4%
Administrative and Support Services	10,700	8.3%	14.4%	10.4%	10.6%
Employment Services	6,900	13.1%	9.1%	6.0%	6.8%
Other Administrative and Support Services	3,800	5.0%	5.3%	4.4%	3.8%
Waste Management and Remediation Services	-200	-1.5%	1.4%	-0.3%	-0.2%
Education and Health Services	9,100	2.7%	14.0%	12.5%	9.0%
Education Services	3,900	8.9%	1.8%	1.1%	3.9%
Health Services and Social Assistance	5,200	1.8%	12.3%	11.4%	5.1%
Ambulatory Health Care Services	1,800	1.5%	5.8%	3.7%	1.8%
Hospitals	1,200	1.9%	-0.4%	2.7%	1.2%
Nursing and Residential Care Facilities	1,300	2.4%	1.2%	0.8%	1.3%
Social Assistance	900	1.7%	5.6%	4.3%	0.9%
Leisure and Hospitality	8,500	3.2%	10.9%	9.7%	8.4%
Arts, Entertainment and Recreation	500	1.1%	1.9%	-1.1%	0.5%
Accommodation and Food Services	8,000	3.6%	8.9%	10.8%	7.9%
Accommodation	900	3.1%	0.9%	0.5%	0.9%
Food Services and Drinking Places	7,100	3.7%	8.1%	10.2%	7.0%
Other Services	900	0.9%	3.9%	3.1%	0.9%
Repair and Maintenance	-200	-0.7%	0.2%	0.4%	-0.2%
Personal and Laundry Services	400	1.6%	0.5%	0.7%	0.4%
Membership Associations and Organizations	700	1.4%	3.2%	2.0%	0.7%
Government	5,100	1.0%	6.5%	4.0%	5.0%
Federal Government	-1,000	-1.4%	-0.9%	-0.4%	-1.0%
Total State Government	800	0.5%	3.3%	0.1%	0.8%
State Government Educational Services	700	0.9%	1.6%	0.9%	0.7%
Total Local Government	5,300	1.7%	4.0%	4.3%	5.2%
Local Government Educational Services	200	0.1%	1.2%	2.7%	0.2%

Source: Employment Security Department/LMEA

APPENDIX 2

Estimated and Projected Occupational Employment Structure

SOC	Occupational Title	Estimated and Projected Employment Shares				Shares of Total Average Annual Openings	
		Washington		Nation		Washington	Nation
		Year 2004	Year 2014	Year 2004	Year 2014	State	
110000	Management Occupations	3.5%	3.4%	6.3%	6.2%	3.0%	5.0%
130000	Business and Financial Operations Occupations	4.6%	4.6%	4.0%	4.3%	4.0%	4.0%
150000	Computer and Mathematical Occupations	3.3%	3.7%	2.2%	2.5%	3.5%	2.5%
170000	Architecture and Engineering Occupations	2.5%	2.6%	1.7%	1.7%	2.7%	1.6%
190000	Life, Physical, and Social Science Occupations	1.5%	1.6%	0.9%	0.9%	1.7%	1.0%
210000	Community and Social Services Occupations	1.6%	1.7%	1.6%	1.7%	1.6%	1.7%
230000	Legal Occupations	0.9%	0.9%	0.8%	0.9%	0.5%	0.6%
250000	Education, Training, and Library Occupations	6.0%	6.0%	6.0%	6.3%	5.6%	6.5%
270000	Arts, Design, Entertainment, Sports, and Media Occupations	1.9%	1.9%	1.7%	1.8%	1.7%	1.6%
290000	Healthcare Practitioners and Technical Occupations	4.4%	4.5%	4.7%	5.2%	4.2%	5.6%
310000	Healthcare Support Occupations	2.3%	2.4%	2.4%	2.8%	2.2%	3.1%
330000	Protective Service Occupations	1.7%	1.8%	2.2%	2.2%	2.1%	2.4%
350000	Food Preparation and Serving Related Occupations	7.5%	7.5%	7.4%	7.6%	10.9%	10.9%
370000	Building and Grounds Cleaning and Maintenance Occupations	4.0%	4.0%	3.8%	4.0%	3.6%	3.8%
390000	Personal Care and Service Occupations	4.1%	4.0%	3.2%	3.5%	3.9%	3.9%
410000	Sales and Related Occupations	10.4%	10.1%	10.5%	10.2%	11.7%	11.9%
430000	Office and Administrative Support Occupations	14.8%	14.9%	16.4%	15.4%	14.7%	13.6%
450000	Farming, Fishing, and Forestry Occupations	2.4%	2.1%	0.7%	0.6%	1.5%	0.5%
470000	Construction and Extraction Occupations	6.3%	6.5%	5.3%	5.3%	6.2%	4.5%
490000	Installation, Maintenance, and Repair Occupations	3.9%	3.8%	3.9%	3.9%	3.5%	3.6%
510000	Production Occupations	5.4%	5.1%	7.3%	6.4%	4.7%	5.3%
530000	Transportation and Material Moving Occupations	6.9%	6.9%	6.9%	6.8%	6.7%	6.3%

Source: Employment Security Department/LMEA; Bureau of Labor Statistics; Occupational Projections

About the Economic and Policy Analysis Unit

The Economic and Policy Analysis unit within the Labor Market and Economic Analysis (LMEA) Branch of the Employment Security Department has primary responsibility for providing occupational information analysis and commentary on Washington's current labor market situation. Toward that end, it is the chief voice for the department and principal point of contact with the public for statewide labor market information and analysis. In addition to the *Labor Market and Economic Report*, the unit's other notable publications include the *Washington Labor Market Quarterly Review*, *Employment Situation Report*, *Job Vacancy Report*, *Employee Benefits Report*, *County Profiles*, *Agricultural Workforce in Washington State*, and *Occupational Outlooks*. These publications are available on the Workforce Explorer (www.workforceexplorer.com). The unit's work is also showcased at the annual LMEA Economic Symposium, presentations from which are available on the Workforce Explorer.

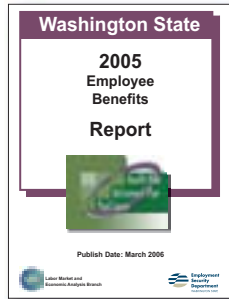
Publications

www.workforceexplorer.com



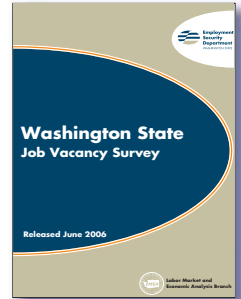
- ◆ **Washington State Labor Market and Economic Report for 2006** - A report that includes the year in review, the national outlook, seasonal, structural, and cyclical employment, unemployment and its dimensions, demographics of the labor force, employment projections, and wages and income information.

- ◆ **Washington Labor Market Quarterly Review** - A report that gives an overview on current state economic conditions and unemployment rates on a quarterly basis.



- ◆ **Washington State Job Vacancy Report** - A snapshot of demand for workers taken each spring and fall. Results are broken down by several characteristics of available jobs such as wage offered, educational requirement, and length of time job has been vacant.

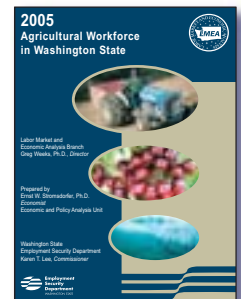
- ◆ **2005 Washington State Employee Benefits Report** - An overview of health insurance, retirement plans, and paid leave for workers and their dependents. Information is displayed by industry, region, and size of business.



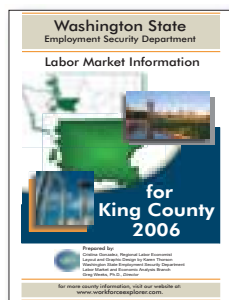
- ◆ **2005 Agricultural Workforce in Washington State** - A report that brings together all relevant information on this critical industry's workforce. The report includes employment by industry and location, wage information by activity, farm worker demographic information, and industry outlook.



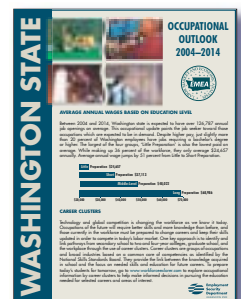
- ◆ **Washington State Employment Situation Report** - A monthly tool giving you an up-to-date report on the state of the state economy as reflected in our labor market data. Employment by industry and labor force data at the state and substate level are displayed.



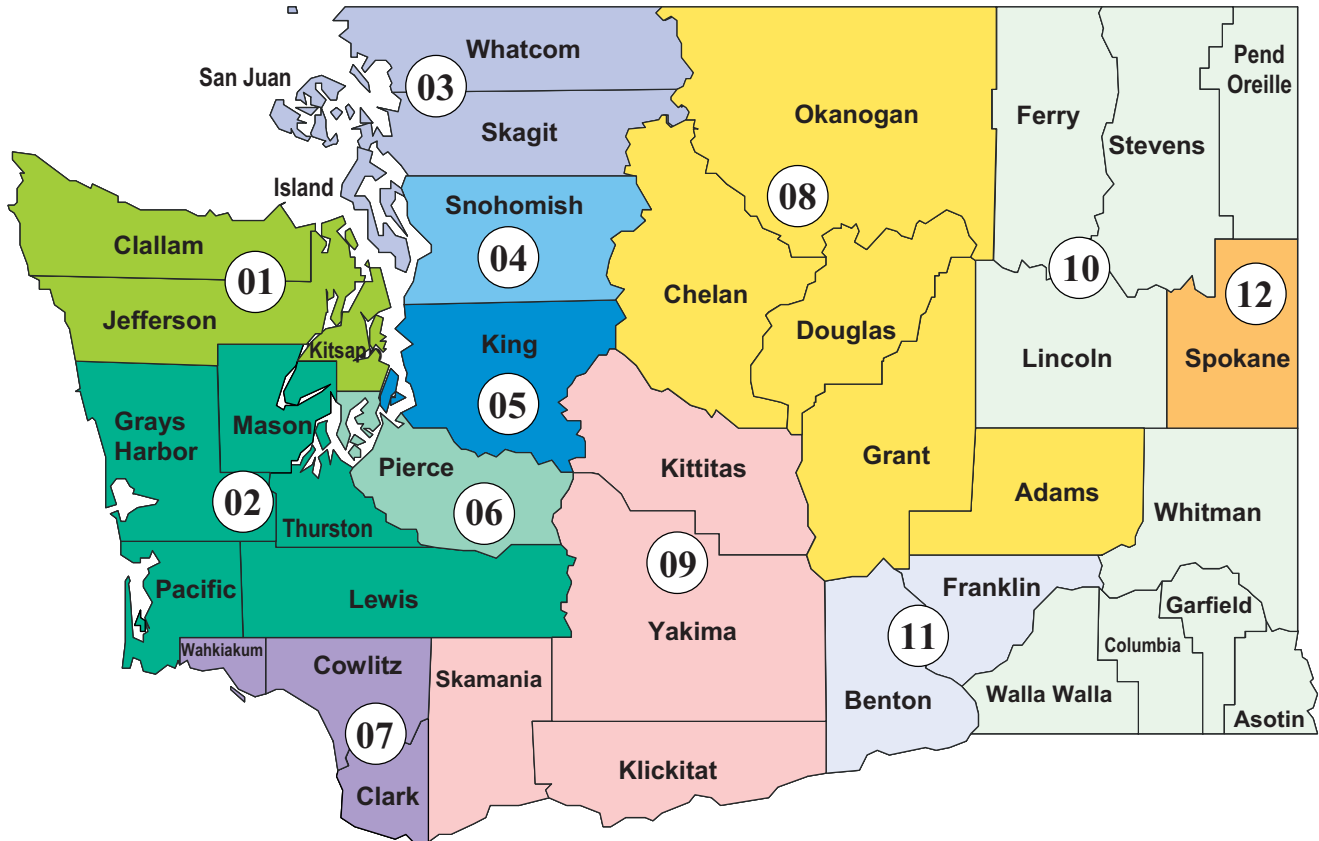
- ◆ **Labor Market Information for King County 2006** - One of 32 reports profiling individual or groups of counties. Each report deals with the economic health of a specific area – including employment trends, demographics, wages, and changes in labor force and population.















- ◆ **2004-2014 Occupational Outlooks** - An annual flyer intended to guide students and jobs seekers toward growth occupations. Careers are divided by education/training level and listed in order of growth potential. Current employment, long-term average growth, average annual openings, and estimated average wage are also included for these demand occupations.



Workforce Development Areas



- | | | | |
|---|---------------------------|---|--|
|  | 01 – Olympic Consortium |  | 07 – Southwest Washington |
|  | 02 – Pacific Mountain |  | 08 – North Central Washington/Columbia |
|  | 03 – Northwest Washington |  | 09 – South Central Washington |
|  | 04 – Snohomish County |  | 10 – Eastern Washington |
|  | 05 – Seattle-King County |  | 11 – Benton-Franklin |
|  | 06 – Pierce County |  | 12 – Spokane County |