

2008

WASHINGTON STATE

LABOR MARKET AND ECONOMIC REPORT



Employment Security Department
Karen T. Lee, Commissioner

Labor Market and Economic Analysis
Greg Weeks, Ph.D., Director

Prepared by

Economic and Policy Analysis Unit
Mary Ayala, Ph.D., Chief Economist

**Washington State
Employment Security Department**

Labor Market and Economic Analysis



December 2008

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2008 Washington State Labor Market and Economic Report

This report has been prepared in accordance with the Revised Code of Washington (RCW) 50.38.040.

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Mary Ayala, Ph.D., *Chief Economist*

Economic and Policy Analysis Unit
(360) 438-4800

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Report Authors

Fast Facts: Jami Mills, Economist
Chapter 1: Mary Ayala, Chief Economist
Chapter 2: Dave Wallace, Economist
Chapter 3: Dave Wallace, Economist
Chapter 4: Michele Petritz, Economist
Chris Thomas, Economist
Chapter 5: Jami Mills, Economist
Chapter 6: Alex Roubinchtein, Economist
Chapter 7: Scott Bailey, Regional Economist
Chapter 8: Alex Roubinchtein, Economist

Reviewers and Design

Ivars Graudins, LMI Manager
Gary Bodeutsch, UI Research Manager
Bonnie Dalebout, Graphic Design Unit Supervisor
Sandra K. Jones, Communications Consultant/Designer

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2008 Washington State Labor Market Fast Facts

Labor Force and Unemployment, Washington, 1980-2008

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	3,050,000	2,898,700	151,300	5.0%
2001	3,052,700	2,863,700	189,000	6.2%
2002	3,104,700	2,877,000	227,700	7.3%
2003	3,149,200	2,916,000	233,200	7.4%
2004	3,208,900	3,008,400	200,600	6.3%
2005	3,270,480	3,090,000	180,500	5.5%
2006	3,326,500	3,160,400	166,200	5.0%
2007	3,403,200	3,242,500	160,600	4.7%
2008*	3,463,700	3,282,200	181,500	5.2%

Source: LME/ESD, Local Area Unemployment Statistics (LAUS), Haver Analytics

Note: *(Year-to-Date Averages as of September) Not Seasonally Adjusted

Labor Force and Unemployment, Washington Metro Areas, 2008*

Metro Area	Labor Force	Employment	Unemployment	Unemployment Rate
Washington State	3,463,700	3,282,200	181,500	5.2%
Bellingham MSA	109,000	103,400	5,500	5.0%
Bremerton MSA	124,200	117,700	6,500	5.2%
Clark County	214,000	199,400	14,600	6.8%
Kennewick-Pasco-Richland MSA	121,700	114,900	6,800	5.6%
Longview MSA	44,400	40,800	3,700	8.3%
Mt. Vernon-Anacortes MSA	59,300	55,900	3,400	5.7%
Olympia MSA	131,100	124,200	6,800	5.2%
Seattle-Bellevue-Everett**	1,457,300	1,398,900	58,400	4.0%
Spokane MSA	235,200	221,500	13,700	5.8%
Tacoma**	395,800	372,800	23,000	5.8%
Walla Walla MSA	29,500	28,000	1,600	5.4%
Wenatchee MSA	63,000	59,400	3,600	5.7%
Yakima MSA	121,500	112,600	8,900	7.3%

Source: LME/ESD, U.S. Bureau of Labor Statistics (BLS), and Local Area Unemployment Statistics (LAUS)

Note: *(Year-to-Date Averages as of September) Not Seasonally Adjusted

**Metropolitan Division

Projected Growth Rates, Washington, 2006-2016

Industry	Annual Average Employment Growth		
	2007:Q2-2009:Q2	2006-2011	2011-2016
Total	0.9%	1.6%	1.3%
Construction	-2.0%	0.7%	1.3%
Manufacturing	-0.1%	0.7%	0.0%
Wholesale Trade	0.2%	1.0%	1.2%
Retail Trade	0.4%	1.1%	0.8%
Transportation, Warehousing and Utilities	0.6%	1.3%	1.1%
Information	1.6%	2.5%	2.4%
Financial Activities	0.6%	1.1%	0.8%
Professional and Business Services	1.5%	3.3%	2.1%
Education and Health Services	3.1%	2.7%	2.0%
Leisure and Hospitality	1.5%	1.9%	1.2%
Government	0.8%	1.1%	1.0%

Source: LME/ESD, Industry Projections

Covered Employment Classified by Industry, First Quarter 2008 (Preliminary)

Washington State Industry Description	Firms	Total Wages (in \$ Billions)	Average Employment	Average Monthly Wage
TOTAL	195,380	\$34.0	2,907,513	\$3,894
Government	2,056	\$6.1	518,095	\$3,948
Education and Health Services	15,960	\$3.3	335,987	\$3,251
Professional and Business Services	27,829	\$4.9	335,073	\$4,861
Retail Trade	14,619	\$2.4	319,134	\$2,462
Manufacturing	7,266	\$4.6	289,667	\$5,302
Leisure and Hospitality	15,107	\$1.2	270,745	\$1,511
Construction	25,406	\$2.2	184,607	\$3,935
Financial Activities	13,100	\$2.6	150,378	\$5,783
Wholesale Trade	12,911	\$2.0	126,506	\$5,184
Other Services	46,436	\$0.7	114,677	\$2,114
Information	2,517	\$2.5	103,028	\$7,998
Transportation, Warehousing and Utilities	4,379	\$1.1	89,398	\$3,982
Agriculture, Forestry, Fishing, and Hunting	7,621	\$0.4	67,468	\$2,071

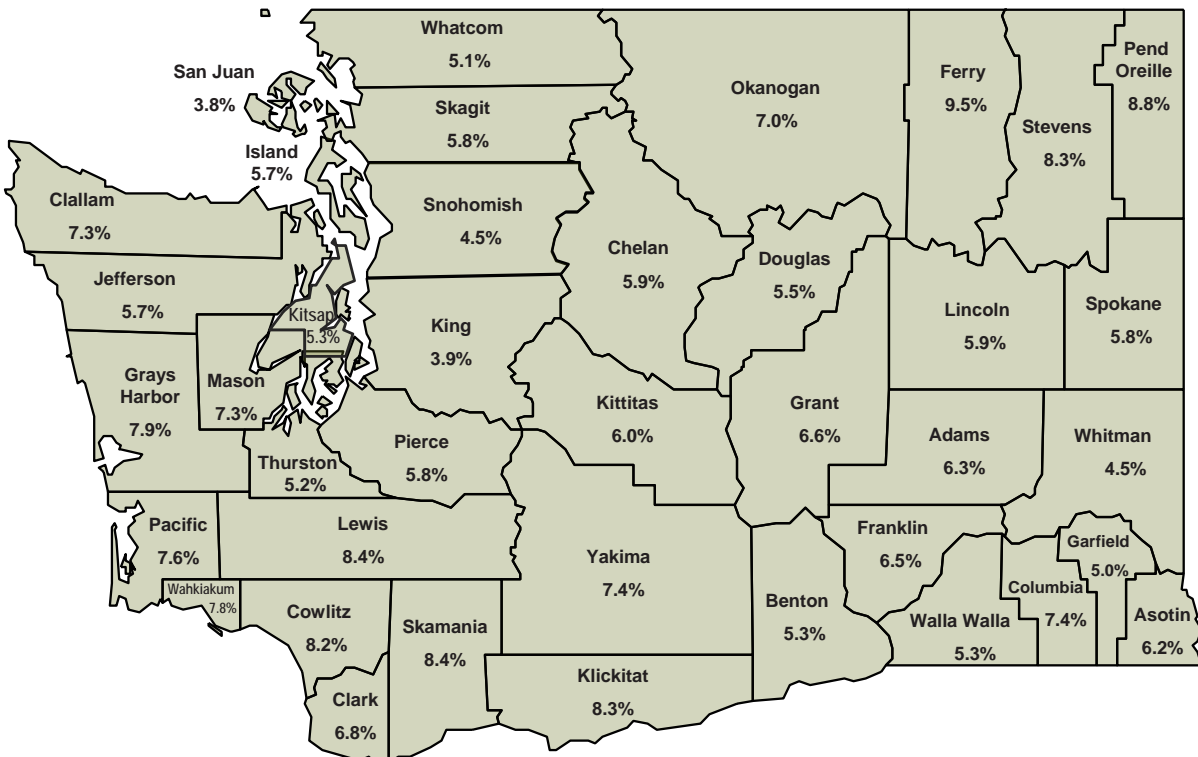
Source: LME/ESD, and Quarterly Census of Employment and Wages (QCEW)

Note: Public Education is Included in Government
Sum of Presented Industries Will Not Equal Total Due to Exclusion of Mining

Average Monthly Unemployment Insurance Claims by Occupation Groups, Washington, 2007-2008

Occupational Groups	Beneficiaries* (Oct. 2007 - Sept. 2008)	Percent Change from Previous 1-Year Period	Estimated Employment 2007:Q2**
Total	222,335	12.0%	3,363,354
Architecture and Engineering	3,770	20.4%	84,806
Arts, Design, Entertainment, Sports, and Media	3,076	9.6%	68,155
Building and Grounds Cleaning and Maintenance	4,950	4.7%	121,109
Business and Financial Operations	6,806	14.6%	149,892
Community and Social Services	1,216	-6.3%	57,120
Computer and Mathematical	4,594	-7.6%	110,096
Construction and Extraction	46,241	30.7%	231,362
Education, Training, and Library	2,382	-14.9%	192,706
Farming, Fishing, and Forestry	11,972	-6.4%	93,712
Food Preparation and Serving Related	7,999	-0.6%	257,530
Healthcare Practitioners and Technical	2,582	2.5%	143,324
Healthcare Support	2,677	-4.6%	75,519
Installation, Maintenance, and Repair	11,166	15.7%	131,239
Legal	1,181	10.3%	27,163
Life, Physical, and Social Science	1,890	1.0%	48,996
Management	19,844	18.8%	118,404
Office and Administrative Support	24,521	18.6%	497,001
Personal Care and Service	4,021	-3.8%	139,053
Production	24,787	12.1%	184,121
Protective Service	2,535	-1.7%	55,514
Sales and Related	14,847	-6.0%	350,007
Transportation and Material Moving	19,278	15.4%	226,525

Source: *Unemployment Insurance Data Warehouse: Continued Claims Database
 **LMEA/ESD - Occupational Projections



Not Seasonally Adjusted Unemployment Rates:

Washington = 5.2% (Increased in 2008)
 United States = 5.5% (Increased in 2008)

- Unemployment Rate Increased From 2007
- Unemployment Rate Decreased From 2007
- Unemployment Rate Same as 2007

Source: Household Employment, Bureau of Labor Statistics, Haver Analytics

*November 2008 and December 2008 are Estimated

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Washington State Labor Market and Economic Report

Executive Summary

The Year in Review:

Higher energy, health care, and food prices added to consumers' woes in the United States during 2008. Housing foreclosures accelerated, which had a crippling effect on the economy by initially shutting down the construction and financial services sectors. By late 2008, virtually all sectors of the economy showed weakness, and for all practical purposes, the economy was in a recession. Congress hopes that the *Emergency Economic Stabilization Act of 2008* enacted shortly before the national presidential election will restore solvency to the financial markets and mitigate foreclosures.

In 2009, assuming the federal government can restore liquidity to its financial markets, a second federal stimulus package may be needed to jump-start the economy. Inflation does not seem to be problematic until 2010 when receipts of Social Security taxes and Medicare taxes will initially fall short of the federal government's ability to meet its obligations.

The Washington Labor Market

Over the past year Washington's labor market experienced slowing growth, as 28,100 jobs were added between September 2007 and September 2008. The number of jobs added during this period was about one-half that of the previous year, and about one-third from two years prior. The outlook for the coming year is somewhat dependent on trends nationally and globally. If the national and global economies continue to struggle it can't but negatively impact Washington state.

Seasonal–Structural–Cyclical Industry Employment

Changes in employment and unemployment can be classified as being seasonal, structural, or cyclical. Identifying industries that are historically influenced by one or more of these factors gives us a better understanding of labor markets and causes of unemployment. Education, tourism, and agriculture industries were found to be the most seasonal. The list of most cyclically influenced industries has strong representation from the transportation and resource extraction industries. The software, education, health care, and services industries were found to be very structurally influenced.

Unemployment and its Dimensions

The regular unemployment rate, after being extremely low in 2007, has increased throughout 2008. When comparing industries, the mining and construction industries had the

highest number of unemployment insurance beneficiaries as a share of employment. Generally, the duration of employment and the number of those who have exhausted benefits have also been increasing throughout 2008. Conversely, the number of Mass Layoff events actually declined between March 2007 and September 2008.

Washington's Aging Workforce

The retirement of *baby boomers* will likely have a large impact on both the nation and the state, presenting a combination of challenges and opportunities. About 13 percent of Washington's workforce, ages 45 to 64, is in the health care industry. Higher patient volume associated with an aging population, coupled with 13 percent of workers in the health care industry nearing retirement age, add to fears of potential labor shortages. However, impacts of turbulent housing and financial markets could defer retirement for some.

Employment Projections

Looking forward to 2016, occupations will experience varying rates of employment growth. Employment projections attempt to incorporate observable demands and trends, but as we have seen with the current financial crisis, trends can change unexpectedly.

Washington's industry employment shares are lower than the nation for financial activities. We expect further gains in the share for information, but slight decreases for construction and financial activities.

Wages and Income

This analysis of wages and income tracks the last hurrah of the short-lived 2003 to 2007 recovery from the 2001 recession. Both the average annual wage and the median hourly wage reached all-time highs. The number of hours worked, and the average hours per worker, were the highest on record going back to 1990. During the expansion not all news was good; wage progression was smaller in 2002 to 2007 than in any five-year period dating back to 1990. Also, the number and percentage of households paying more than 30 percent of their income in housing costs have increased substantially.

Data Comparisons with Other States

In Chapter 8, figures are presented that show how Washington ranks relative to other states in the nation.

The Year in Review

Introduction

A decline in U.S. home values and an unprecedented number of home foreclosures dominated the news during 2008, resulting in a non-partisan response in October from Congress to rescue its financial system from near collapse. Passage of the *Emergency Economic Stabilization Act of 2008* should facilitate restoration of solvency to the financial markets; but before this legislation was enacted, housing foreclosures already had a crippling effect on the overall economy. As a result, by the third quarter of 2008, virtually all sectors of the economy showed signs of weakness; and for all practical purposes, the economy was in a recession.



Before legislation was enacted, housing foreclosures already had a crippling effect on the overall

Interest rates in the credit market trended upward during 2008, unresponsive to the Federal Reserve Board's actions to lower them. Inflation, as measured by the consumer price index (CPI-U) was 5.6 percent as of the third quarter 2008; but excluding the cost of food and energy, the annual inflation rate was roughly 2.6 percent. The U.S. economy's unemployment rate rose throughout 2008 ending at 6.5 percent in October, from a low of 4.6 percent in 2007. Therefore, a federal stimulus package may be needed in order to improve employment levels. Absent any wage-pull inflation associated with tight labor market conditions, and absent any supply-induced inflation attributable to higher energy prices, fears about higher inflation rates are not a major concern at this time.

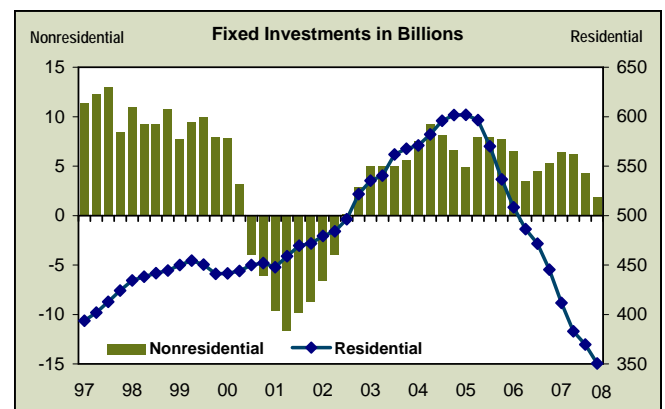
Beyond 2009, restoring liquidity to the financial markets may have inflationary impacts. In addition, beyond 2009 baby boomers will be entering their retirement years; and

the Congressional Budget Office anticipates that receipts of Social Security taxes and Medicare taxes will fall short of the federal government's ability to meet its obligations. In lieu of raising taxes, Congress may decide to increase the national debt to make these payments. As of October 2008, servicing the national debt costs roughly \$400 billion per year. Adding to national debt, like adding to the money supply, can be inflationary depending on how that debt is financed.

The Collapse of the U.S. Housing Market

Permitted housing starts declined from 2.1 million homes in 2005 to 0.9 million starts in 2008. A reduction in housing starts is reflected in *Figure 1*, as a reduction in residential investment expenditures. Both real consumption and real investment expenditures are the major drivers of economic growth. Real residential investment declined by 4.3 percent as early as the second quarter of 2006, indicating when the economy started to show signs of weakness. However, this weakness was overshadowed by positive growth in nonresidential investment until the fourth quarter of 2006. By the third quarter of 2008, residential investment totaling \$350.5 billion was roughly half (58 percent) of its 2005 third quarter level; and relative to 2007 third quarter, real residential investment declined 21.3 percent.

Figure 1
Real Private Residential and Real Private Nonresidential Fixed Investments
Percent Change Year to Year, Seasonally Adjusted Annual Rate, Billions of Year 2000 Dollars
United States 1997:Q4 to 2008:Q3
Source: Bureau of Economic Analysis/Haver Analytics



Home Foreclosures Reach Unprecedented Levels

The decline in residential investment coincided with home foreclosures that increased at an accelerated pace between 2005 and the second quarter of 2008. As of 2008 second quarter, financial institutions were servicing 45.4 million mortgages, relative to 32.6 million during the 2001 recession (*Figure 3*). The foreclosure rate for the first two quarters of the 2001 recession was 0.9 percent. The two-quarter (Q2) foreclosure rate for the first half of 2008 was 2.2 percent (*Figure 2* shows foreclosure rates per quarter).

Figure 2
Mortgage Foreclosures Started
Seasonally Adjusted, Percent
United States, 1997:Q4 to 2008:Q2
Source: Mortgage Bankers Association/Haver Analytics

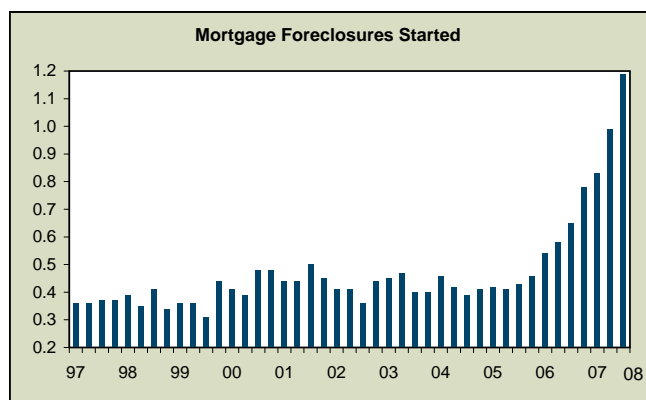


Figure 3 reports the number of mortgages that were serviced in 2005 relative to the second quarter of 2008, by type of mortgage instrument (fixed rate mortgages [FRM] versus adjustable rate mortgages [ARM]), and by type of market (i.e., the prime versus subprime market) of borrowers. *Figure 4* reports the number of properties that were subjected to initial foreclosure proceedings. The highest foreclosure rates were associated with the Subprime FRMs and Subprime ARMs; but the Subprime ARMs and Prime ARMs actually accounted for the larger share of the total number of homes that went through initial foreclosure proceedings.

Figure 3
Number of Serviced Mortgages by Type of Mortgage
United States, 2005 and 2008
Source: Haver Analytics

Conventional Mortgages by Type	2005 (Millions)	Year Over Year Percent Change 2004 to 2005	2008:Q2 (Millions)	Year Over Year Percent Change 2007 to 2008
Prime FRM	21.8	5.6%	27.9	17.1%
Prime ARM	5.6	24.3%	6.1	3.3%
Subprime FRM	2	11.4%	2.8	9.3%
Subprime ARM	2.8	24.2%	2.5	2.7%
<i>Subtotal</i>	32.2		39.3	
<i>Percent of Total</i>	78.2%		86.6%	
All Mortgages	41.2	4.9%	45.4	2.7%

Figure 4
Number of Initiated Foreclosures by Type of Mortgage
United States, 2005 and 2008
Source: Haver Analytics

Conventional Mortgages by Type	2005:Q2 Foreclosure Rate	2005:Q2 Number of Initiated Foreclosures	2008:Q2 Foreclosure Rate	2008:Q2 Number of Initiated Foreclosures
Prime FRM	0.3%	65,400	0.6%	167,400
Prime ARM	0.4%	19,600	3.4%	207,000
Subprime FRM	2.1%	42,000	3.9%	109,200
Subprime ARM	2.9%	81,200	13.0%	325,000
Total		208,000		809,000

The Federal Reserve Board (FRB) of Governors reduced the Federal Funds Rate (FFR) in 2008, anticipating that lenders would lower their mortgage rates. This might have stabilized the housing market (i.e. mitigated foreclosures and made funds available to home buyers). However, as *Figure 5* illustrates, between 2001 and 2006, 30-Year FRMs and ARMs were not all that responsive to substantial reductions in the FFR.¹ The Federal Reserve Board repeatedly cut the FFR from 6.0 percent to 1.1 percent between 2000 and 2003, while the average FRM and ARM rate remained about 5.5 percent between 2001 and 2005.

¹ The Federal Reserve Board controls growth in the money supply and the federal funds rate (FFR). In theory, a directional change in the FFR should cause a similar directional change to occur in other domestic interest rates, if all other influential factors are held constant. Between 2004 and the third quarter of 2007, however, it appears that U.S. lenders set their mortgage rates and the FFR caught up to them until the first quarter of 2008.

Figure 5
Federal Funds (effective) Rate; Nonjumbo Fixed Rate 30-Year Home Mortgage Loans; Adjustable Rate Home Mortgage Loans, Contract Interest Rate, Percent United States, 1997:Q4 to 2008:Q3
Source: Federal Reserve Board, Haver Analytics

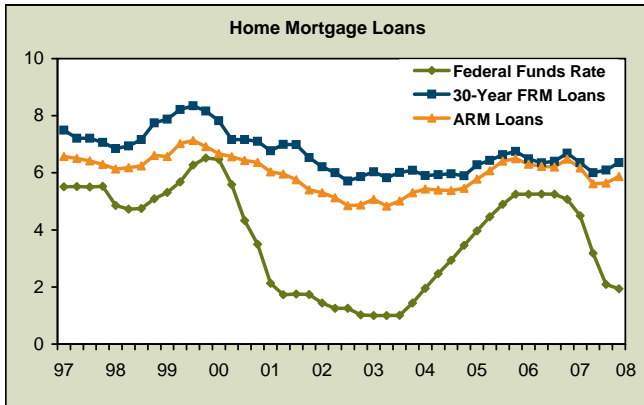


Figure 6
Historical Spreads between Financial Instruments and the Federal Funds Rate United States, 1990 to 2007
Source: LMEA/ESD, Mortgage Bankers Association, Haver Analytics

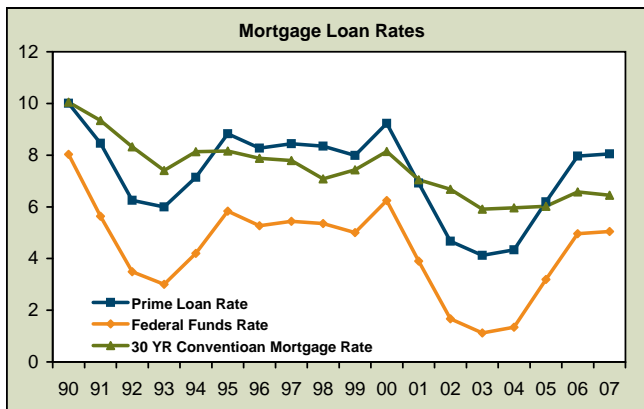


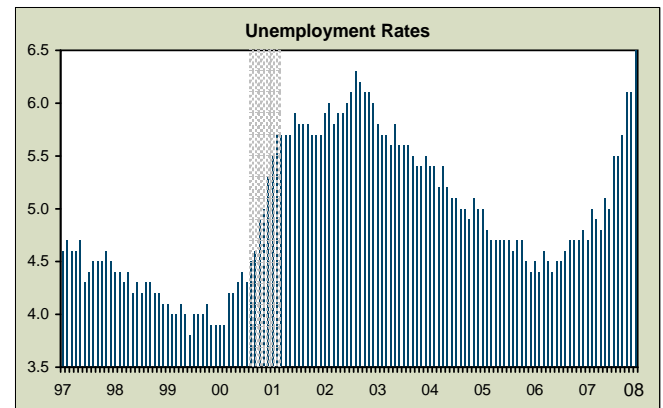
Figure 6 provides an alternative way of looking at lenders' credit practices. It shows that between the first quarter of 2001 and 2004, lenders added a 5 percentage point premium (spread) to their 30-Year FRM rates when the historical spread prior to 2001 was about 2 percentage points. Therefore, during this period, lenders may have been relaxing their qualifying requirements for home mortgagees; but they were also adding a 3 percentage point risk premium as an offset to anticipated higher foreclosure rates in the future. Another

possible explanation for the higher spreads is that lenders were signaling liquidity problems. However, Figure 6 shows the spread for the prime interest rate that remained about 3 percentage points for roughly 15 years.² The stability of the spread attached to the prime rate suggests that the additional risk premium was concentrated in the mortgage market.

Higher Unemployment Follows the Collapse of the Housing Market

Housing foreclosures had a slow crippling effect on the economy that began by shutting down the construction and financial services sectors. Unemployment rates remained fairly low, in the 4.6 percent range during 2006 and 2007. However, they accelerated in 2008 to 6.5 percent, when virtually all sectors of the economy showed weakness (Figure 7).

Figure 7
Unemployment Rates, Seasonally Adjusted, Percent United States, November 1997 to October 2008
Source: Bureau of Labor Statistics, Haver Analytics



The Economic Outlook for 2009

Restoring Solvency and Liquidity to the Financial Markets

Congress enacted the *Emergency Economic Stabilization Act of 2008* in mid-October. Section 122 raised the statutory limit on the national debt to \$11.32 trillion in order to partially finance the Act, the provisions of which enable the Treasury to purchase \$700 billion in mortgage-related

² The prime rate is the rate lenders extend to their most credit-worthy, commercial customers. These customers have a very low probability of defaulting on their loans.

assets from U.S.-headquartered financial institutions.³ A financial oversight panel will review whether various actions that were taken, were in accord with the Act and assisted American families in the preservation of home ownership.⁴

One of the more complex aspects of restoring solvency to the financial markets will be valuing the troubled assets that the Treasury Department will purchase and determining how these purchases will impact the national economy. The oversight panel will receive monthly reports from the appropriate federal agencies' staff about the impacts of the Act on the financial markets and on the effectiveness of foreclosure mitigation efforts (Section 125). At the end of five years, if there is a shortfall in the amount of funds needed to implement the Act, the President shall submit a proposal to Congress to recoup the amount due from the financial industry in order to ensure that neither the federal deficit nor the national debt will be increased (Section 134).

Direct controls over financial institutions' lending practices were omitted from the *Emergency Economic Stabilization Act of 2008*. However, the Federal Reserve Board lowered the FFR to 3.9 percent in the first quarter of 2008, and continued to do so for the next three quarters until it reached 0.97 percent in October 2008. As *Figure 8* illustrates, the FRM and ARM spreads increased from 2 percentage points to over 4 percentage points during the first 10 months of 2008. Therefore, one of the major problems confronting the next administration will be restoring liquidity to the financial sector, possibly by guaranteeing more loans that are granted to home buyers.



Historically, owner-occupied homes have been a good inflation hedge.

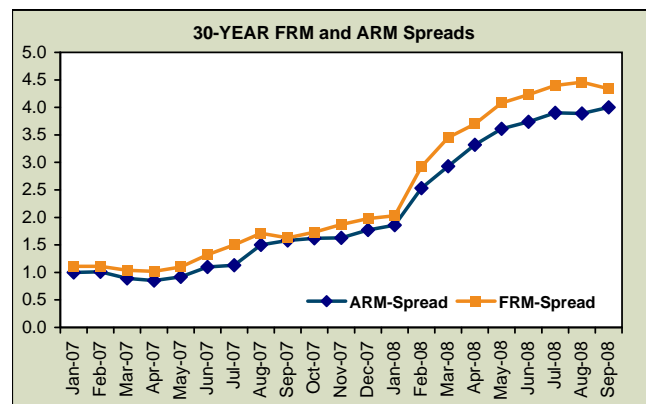
³ The Treasury can not propose any purchase valued at more than \$250 billion at a single time, (Section 115 (a) (1)). The President may ask for approval to purchase assets that do not exceed \$350 billion at a single time. In this instance, however, within 15 days of receipt of this proposal, Congress may reject the proposal if it enacts a joint resolution of disapproval (Source: Section 115 (a) (3) (c)) <http://johnshadegg.house.gov/UploadedFiles/Bill.pdf>

Figure 8

Recent 30-Year Fixed Rate Mortgage and Adjusted Rate Mortgage Spreads

United States, January 2007 to September 2008

Source: Mortgage Bankers Association, Haver Analytics



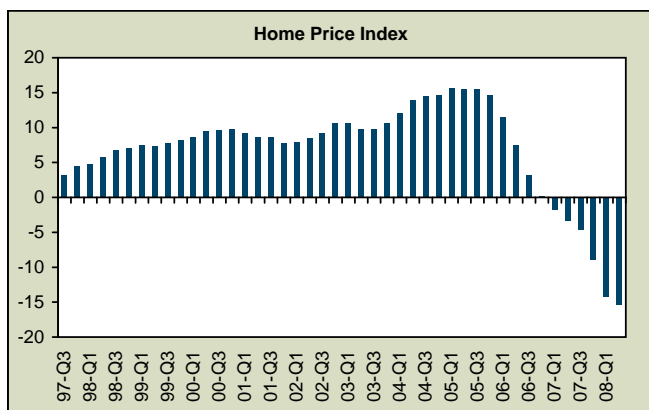
Stabilizing Home Values

Historically, owner-occupied homes have been a good inflation hedge. For example, applying the Shiller Home Price Index to a home valued at \$100,000 in 2000, its value would have increased 46 percent by the third quarter of 2008. The same \$100,000 indexed to the CPI-U inflation rate would have increased by 16 percent over the same eight-year period. However, as *Figure 9* illustrates, the Shiller Home Price Index did not increase consistently over the last eight years. That is, the same \$100,000 home purchased in 2004 would have declined in value by 1.9 percent as of the third quarter of 2008, while the inflation rate would have grown that \$100,000 by 8.5 percent. The instability of the home values between 2004 and 2008 wiped out home owners' equity which greatly curtailed consumer expenditures in 2008 and accelerated the economy's tailspin. In the short term, provisions in the *Economic Stabilization Act of 2008* should mitigate foreclosures and help with refinance loans. Long term, if home mortgage rates are not excessive, home owners will accumulate sufficient equity in homes over time, thereby enabling them to withstand temporary downturns in home values which will stabilize the housing market.

⁴ Title IV establishes **HOPE for Home owners**, an FHA program starting October 1 to help delinquent or at-risk borrowers to refinance into affordable mortgages, if lenders write down the balance owed to 87 percent of current value or below. It also creates a legal "safe harbor" to encourage servicers to modify delinquent mortgages.

Figure 9

S&P/Case-Shiller Home Price Index
 Percent Change Year to Year,
 Not Seasonally Adjusted, Q1-00=100
 United States, 1997:Q3 to 2008:Q2
 Source: S&P, Fiserv, Macro Markets LLC, Haver Analytics



Controlling Inflation

Volatility in the inflation rate coupled with higher unemployment rates diminishes consumers' confidence. As *Figure 10* shows, it was the cost of energy that fluctuated over 100 percent between 2007 and 2008 that had the greatest impact on the inflation rate in 2008. The cost of food and beverages increased by 1 percentage point between 2007 and 2008. Over the same period the cost of medical care dropped a percentage point.

Inflation for all goods as measured by the consumer price index (CPI-U) was 5.6 percent in 2008 for all goods, and 2.6 percent for all goods less food and energy. Since the U.S. economy's unemployment rate rose to 6.5 percent as

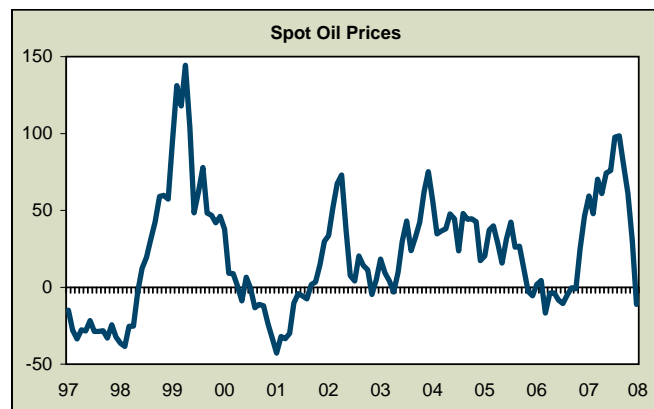


A new economic stimulus is a likely outcome for 2009.

of October 2008, absent any wage-pull inflation associated with tight labor market conditions, and absent any supply-induced inflation attributable to higher energy prices, the inflation rate should not be excessive in 2009.

Figure 10

Spot Oil Prices, West Texas Intermediate,
 Dollars per Barrel
 Percent Change Year to Year (Prior '82=Posted Price)
 United States, November 1997 to October 2008
 Source: *Wall Street Journal*, Haver Analytics



The Outlook for the U.S. Economy Beyond 2009

A new economic stimulus package is a likely outcome for 2009. If some controls or guidelines are imposed on lenders' home mortgage rates, the housing market should stabilize and home values should begin to appreciate.

Beyond 2009, several issues point toward higher inflation rates. First, the stabilization package can be inflationary depending on how this debt is financed. Second, by 2010, baby boomers will be entering their retirement years; and the Congressional Budget Office anticipates that receipts of Social Security taxes and Medicare taxes will fall short of the federal government's ability to meet its obligations. In lieu of raising taxes, Congress can either revamp these programs or it may decide to increase the national debt to meet these obligations. As of October 2008, the U.S. Treasury reports that the national debt increased 47 percent in just over five years.

The third cause of inflation is the national debt. This debt is currently \$10.5 trillion and it has been growing each day since September at a rate of \$3.8 billion.⁵ Based on the U.S. population level that is currently 305.0 million, the per capita share of the national debt is about \$34,000⁶. If one considers the cost of servicing the national debt, it would warrant as much, if not more attention, than the \$700 billion piece of legislation enacted in 2008 to rescue the U.S. financial markets. The \$700 billion



The third cause of inflation is the national debt.

price tag for restoring solvency to the financial markets is a one-time cost. The interest payment alone to service the national debt is a recurring annual cost of \$400 billion; and this debt service will increase each year as long as the federal annual budget produces a deficit. Adding to the national debt, like adding to the money supply, can increase the inflation rate.

⁵ Source: http://www.brillig.com/debt_clock/

⁶ Only 90 million of 112.3 million U.S. households actually paid federal income taxes in 2007. Therefore, if the national debt is distributed across the households that would have to repay this debt by paying higher taxes, it totals about \$116,000 per household. The debt service per household on the \$116,000 at 5 percent would be roughly \$5,800 per year. (Source: U.S. Census Bureau, American Fact Finder for 2007, Table B19051).

The Washington Labor Market

Introduction

Over the past year Washington's labor market experienced slowing growth. Twenty-eight thousand and one hundred jobs were added between September 2007 and September 2008, growing at a 1.0 percent clip. The number of jobs added during this period was about one-half that of the previous year, and about one-third from two years prior. While this is less than spectacular, it was much better than that experienced by the nation as a whole, which actually declined by 519,000 over the same period (or -0.4 percent change). A similar picture emerges with unemployment; the ranks of unemployed in Washington rose by 28 percent during the past year, a little slower than the national rise of 31 percent. Similarly, the unemployment rate rose by 1.2 percentage points, compared to 1.4 percentage points for the nation as a whole. As of September 2008, Washington's unemployment rate stood at 5.8 percent compared to 6.1 for the nation (*Figure 11*).

Figure 11
Historical Unemployment Rates (seasonally adjusted)
United States and Washington State, 1976 to 2008
Source: LMEA/ESD, U.S. Bureau of Labor Statistics,
Haver Analytics

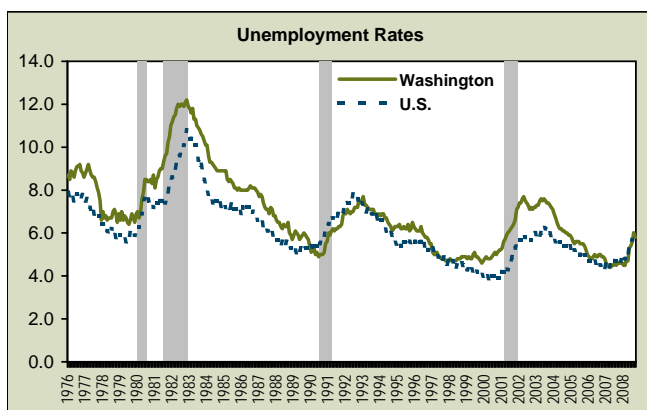
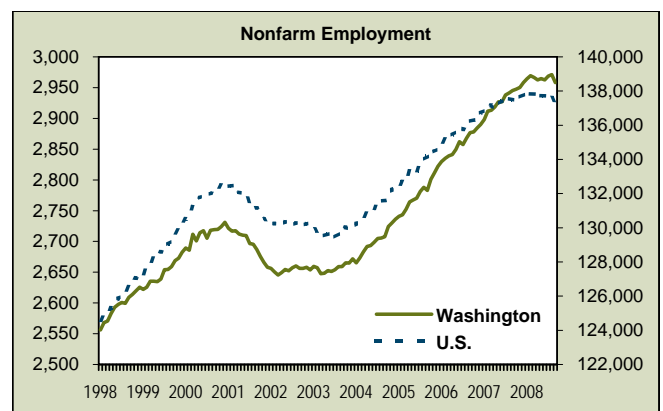


Figure 12 contrasts employment growth in Washington state to that of the nation over the past ten years. Since the recession of 2001, the state's employment growth rate has been more than twice that of the United States.

In addition to having stronger post-recession growth, Washington labor markets continued growing for about eight months beyond that of the country. Employment

growth nationally began to level off about the middle of 2007, whereas in Washington it didn't crest until the early months of 2008. There is some historical precedent for the state economy to lag that of the country, but it was also due in part to the nature of the present downturn.

Figure 12
Nonfarm Employment
Seasonally Adjusted in Thousands
United States and Washington State, 1998 to 2008
Source: LMEA/ESD, U.S. Bureau of Labor Statistics,
Haver Analytics



As discussed in the previous chapter, the current economic problems were precipitated by plummeting housing values and rising mortgage foreclosures, which in turn led to a wider financial meltdown. Washington state has suffered declining home values, but not nearly to the degree of areas such as Las Vegas, Phoenix, and San Diego. The state has lost jobs in construction and finance sectors, but again, at a slower pace than many other regions. Some employment declines in residential construction were countered by growth in non-residential construction, and Washington is a region with normal, but not heavy concentration in finance (like say New York). This



The state has lost jobs in construction at a slower pace than many other regions.

employment in construction has been somewhat sustained by the rising trend in home ownership rates (Figure 13). Home ownership rates in Washington state are lower than the average for the U.S. and significantly lower than in Idaho. They are close to the rates in Oregon. Home prices in Idaho historically were lower than in Oregon and Washington, and this could partly explain the higher home ownership rates.

Figure 13
Home Ownership Rates
United States, Idaho, Oregon, and
Washington State, 1997 to 2007
Source: LMEA/ESD, U.S. Bureau of Labor Statistics,
Haver Analytics

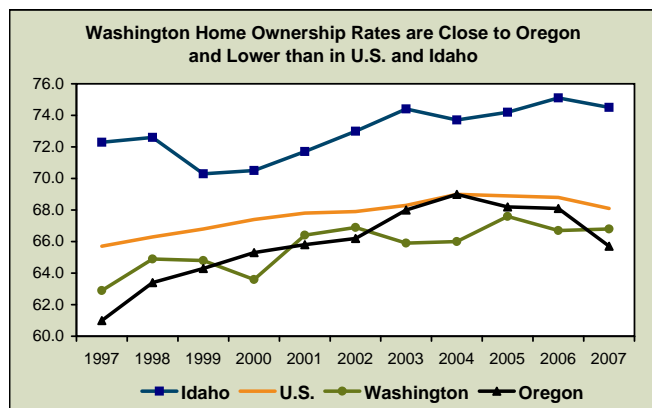


Figure 14
Industry Job Growth by Year
Washington State, September to September
Source: LMEA/Employment Security Department

Industry	Sept. 2006		Sept. 2007		Sept. 2008		Avg. Rank
	Rank	Employment Change	Rank	Employment Change	Rank	Employment Change	
Total Nonfarm	-	93,200	-	63,700	-	28,100	-
Education and Health Services	5	7,100	2	10,500	1.0	8,800	2.7
Professional and Business Services	3	14,200	1	12,700	2.0	7,400	2.0
Government	10	3,500	8	3,700	3.0	6,200	7.0
Leisure and Hospitality	4	7,900	4	8,600	4.0	5,000	4.0
Retail Trade	9	3,900	6	6,200	5.0	3,800	6.7
Information	7	5,200	9	3,000	6.0	3,500	7.3
Other Services	12	1,600	12	1,000	7.0	3,200	10.3
Wholesale Trade	8	4,400	10	2,100	8.0	1,300	8.7
Transportation, Warehousing and Utilities	11	2,300	11	1,400	9.0	700	10.3
Manufacturing	1	26,300	5	7,300	10.0	200	5.3
Natural Resources and Mining	13	-300	13	-400	11.0	-700	12.3
Financial Activities	14	-300	14	-1,900	12.0	-1,600	13.3
Admin. and Support, Waste Mgmt. and Remediation	6	5,700	7	4,500	13.0	-2,500	8.7
Construction	2	17,400	3	9,500	14.0	-9,700	6.3

Consumer goods that have faced strong declines in demand have been automobiles (due to high gas prices, among other things) and building supplies (housing markets), neither of which are strongly associated with Washington state.

Washington Industry Employment

The industry having the best year was education and health services, which added 8,800 jobs since September 2007, amounting to a growth rate of 2.5 percent. Other industries that added jobs at a healthy clip were professional and business services, government, and leisure and hospitality. All three of these sectors grew by 5,000 or more over the year.

Employment in hospitals was the largest job contributor to growth in the education and health services sector. Hospital employment jumped by 3,000 over the year, sustaining a growth rate of 4.5 percent. In contrast, private sector education services only added 1,000 jobs. The accounting and bookkeeping services industry was the driving force behind the professional and business services employment growth – it added 2,600 to payrolls (up 15.6 percent). Local government grew much faster than either state or federal government; and arts, entertainment, and recreation was the top performer in the leisure and hospitality sector.

Four sectors contracted between September of 2007 and September of 2008. Construction lost the most, overall down by 9,700. It was followed by administration and support, waste management, and remediation; financial activities; and natural resources and mining.

The downturn was particularly glaring (if not wholly unexpected) for construction. As shown in *Figure 14*, the construction sector had the third best job growth performance in 2007 and the second best in 2006. Another previously high-flying industry was manufacturing. Back in 2006 it added more jobs than any other sector.

September to September job losses in the construction sector were led by residential specialty trade contractors. This industry includes firms that do all kinds of construction work (such as plumbing, pouring concrete, or wiring), but are not responsible for the entire construction project. Five thousand and five hundred jobs were lost in this industry during this period. The residential segment of construction has been contracting for more than a year now. Meanwhile the non-residential sector, which had been holding up, has shown job losses from about the mid-point of 2008 forward (*Figure 16*).

Employment services (typically a bellwether of the business cycle) lost 3,500 jobs – far more than any other industry in the administration and support, waste management, and remediation sector. Financial sector employment losses were led by the credit intermediation and

related activities industry. This sub-sector, which lost 1,600 over the year, includes commercial banks, credit card issuers, and mortgage loan brokers.

As far as wages were concerned in 2007, the information industry had the highest average annual wage at \$95,332. It was followed by the management of companies and enterprises and utilities sectors (*Figure 15*). Accommodation and food services tallied the lowest wage in 2007, followed by agriculture and other services.

Figure 16
Residential and Non-residential Employment in Building Construction and Specialty Trade Contractors Washington State, September 2007 to September 2008
Source: LMEA/Employment Security Department

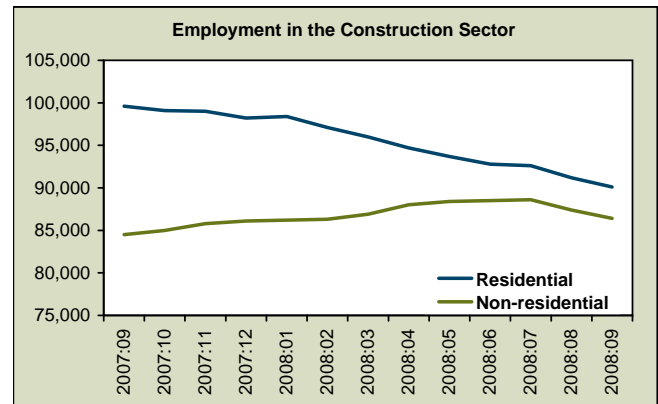


Figure 15
Average Annual Wage by Industry Sector Washington State, 1990 to 2007
Source: LMEA/Employment Security Department

Industry Sector	Average Annual Wage	Inflation Adjusted Wage Change		
	2007	1990-2007	1990-2001	2001-2007
Information	\$95,332	76%	125%	-22%
Management of Companies and Enterprises	\$86,859	70%	45%	17%
Utilities	\$71,811	16%	7%	9%
Finance and Insurance	\$70,049	51%	26%	19%
Professional and Technical Services	\$67,241	35%	23%	10%
Manufacturing	\$59,989	15%	4%	10%
Wholesale Trade	\$59,359	28%	14%	12%
Mining	\$58,143	0%	-8%	9%
Public Administration	\$54,718	21%	8%	11%
Transportation and Warehousing	\$47,657	0%	-5%	6%
Construction	\$46,843	14%	7%	7%
Health Care and Social Assistance	\$40,482	23%	10%	12%
Educational Services	\$37,942	2%	-3%	6%
Real Estate and Rental and Leasing	\$36,700	36%	19%	14%
Administrative and Waste Services	\$36,209	31%	20%	10%
Arts, Entertainment, and Recreation	\$29,349	34%	23%	9%
Retail Trade	\$29,047	7%	4%	3%
Other Services, except Public Administration	\$24,444	-3%	-13%	11%
Agriculture, Forestry, Fishing and Hunting	\$23,434	8%	0%	8%
Accommodation and Food Services	\$16,068	15%	10%	4%

Across the State

While most areas across the state hold to the statewide pattern of slowing growth there are some sizable differences. The Seattle area carried a disproportionate amount of the burden in the 2001 recession and for several years after. Conversely, most of the non-Seattle areas of the state weathered the recession in better shape and recovered more quickly (Figure 17). From about the third quarter of 2005, Seattle employment growth took off and has since led the state.



Seattle employment growth took off and has since led the state.

Figure 17

Year-Over-Year Nonfarm Employment Growth
Seattle, Spokane, Tacoma, and Rest of State,
2001 to 2008

Source: LMEA/Employment Security Department

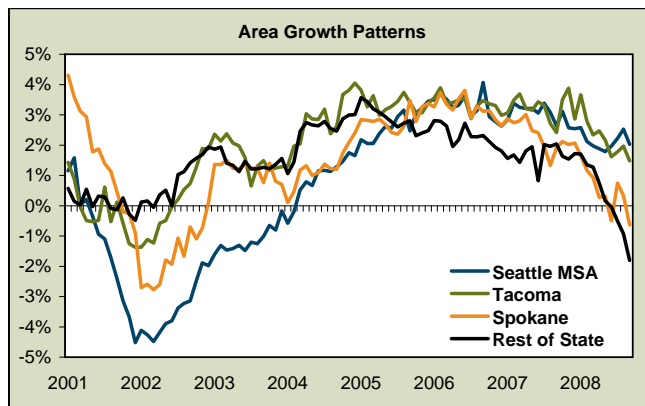
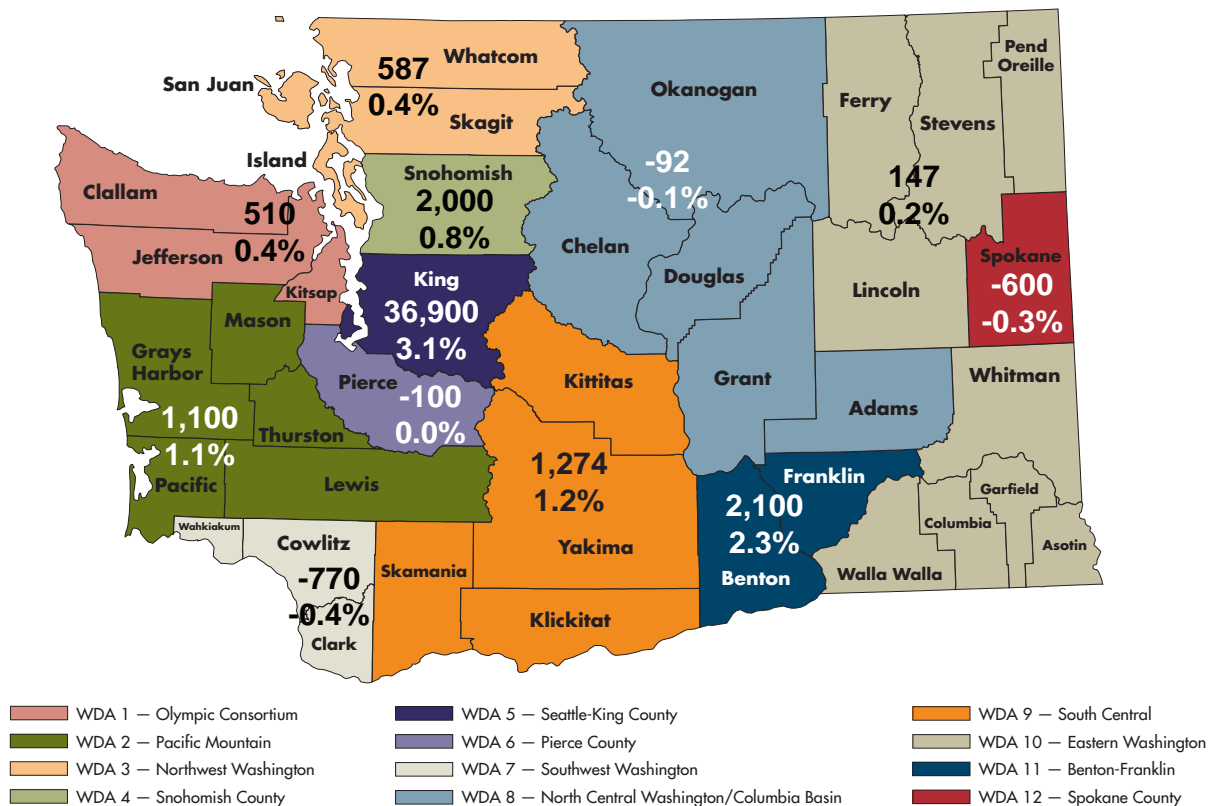


Figure 18

Nonfarm Employment Change by
Workforce Development Area
Washington State, September 2007 to September 2008

Source: LMEA, Employment Security Department

Washington State Workforce Development Areas



From the Map displayed on page 10, one can see that in terms of jobs added between September of this year and September of last year, a strong majority (87 percent) of jobs added over the year came from King County. Snohomish County managed 2,000 jobs over the space of twelve months, but this was only an increase of 0.8 percent. The Benton-Franklin area (Tri-Cities) was the only other area to add jobs at a healthy pace, 2.3 percent from September to September.



A recession at the national level doesn't necessarily mean a recession at the state level.

The Outlook for Washington: Past as Prologue?

The recent economic downturn at the national level inevitably leads to questions as to how it will affect things in Washington state. A recession at the national level doesn't necessarily mean a recession at the state level, or of the same severity. Past history has shown that the state's experience with national recessions is varied.

Going back to the "double-dip" recessions of the early 1980s (*Figure 19*), one can see that employment losses in Washington were somewhat worse than that of the nation (primarily during the "second dip"). Washington lost 16,500 jobs during the 1980 recession and a further 60,100 jobs during the 1981 to 1982 recession. The statewide unemployment rate reached a high-water mark of 12.2 percent in October 1982, the month the recession officially ended. At the same time the national rate reached a high of 10.8 percent. Then between October 1982 and July 1991 (the next official recession), employment in Washington grew by 38.0 percent, adding 591,700 to employment payrolls. Nationally employment grew by 21,005,000 or 23.7 percent during the expansion. Washington also weathered the recession of the early 1990s better than did the nation.

Employment nationally declined by 1.1 percent, whereas it actually grew by 0.7 percent in the state (one might even argue that the recession did not reach the state).

During the next growth cycle (March 1991 to March 2001), Washington and the nation added jobs at roughly the same rate, 25.5 and 22.1 percent respectively. However, the ensuing recession was particularly harsh for the state. Washington employment payrolls dropped by nearly 2 percent (-51,800) compared to a decline of 1.2 percent nationally. Washington continued losing jobs well after the official recession period ended. Between March 2001 and March 2003, the state suffered a 2.7 percent drop. Since the last recession, the state rebounded much stronger, growing by 11.0 percent, while the nation grew by less than 5 percent.

Figure 19
Business Cycles Since 1980
Washington and United States Employment in Thousands
Source: U.S. Bureau of Labor Statistics,
National Bureau of Economic Research,
LMEA/ESD, Haver Analytics

Event	Period	Washington Employment		United States Employment	
		Number Change	Percent Change	Number Change	Percent Change
Recession	Jan-July 1980	-16.5	-1.0%	-968.0	-1.1%
Recession	July 1981-Nov 1982	-60.1	-3.7%	-2,824.0	-3.1%
Expansion	Nov 1982-July 1990	591.7	38.0%	21,005.0	23.7%
Recession	July 1990-Mar 1991	16.1	0.7%	-1,240.0	-1.1%
Expansion	Mar 1991-Mar 2001	552.9	25.5%	23,965.0	22.1%
Recession	Mar 2001-Nov 2001	-51.8	-1.9%	-1,599.0	-1.2%
Expansion	Since Nov 2001	292.6	11.0%	6417.0	4.9%

How well Washington fares during a national recession is largely dependent on which sectors of the national economy are hit the hardest. Overall, Washington state lost jobs at a faster rate in the early 1980s. The sectors in the state that hemorrhaged the most jobs were construction, manufacturing, and timber. Nationally, job losses were concentrated in manufacturing (to an even stronger degree than in Washington), and to a lesser degree in construction. This order was reversed during the early 1990s as construction, and to a lesser extent manufacturing, drove the national economy into recession. The Washington economy did suffer job losses in these sectors but at a much lower rate. However, the recession of 2001 was an entirely different matter. During the downturn, the nation lost 7 percent of its manufacturing jobs and 5 percent of information jobs. As these are two pivotal industries in

Washington, it had a disproportional impact on the state's economy. As these sectors bled jobs, it had ripple effects throughout the economy, eventually leading to significant employment declines in other sectors such as construction and professional and business services. These last two sectors have led the rebound since, growing respectively by 33 and 21 percent.

Looking at changes in wages by industry is also insightful (*Figure 15*). For the period 1990 to 2007, the information industry experienced the highest growth in real wages (76 percent). However, it was not even growth; from 1990 to 2001, it rose by 125 percent, only to drop by 22 percent thereafter. This strong wage growth prior to the 2001 recession, followed by weaker growth or actual declines, occurred in many, but not all sectors. Agriculture, construction, educational services, health care, manufacturing, mining, and public administration were sectors for which wage growth in the latter period matched or exceeded the growth in the earlier period.

As mentioned previously, the nation has experienced a more difficult labor market recently than has the state. The most troubled sectors across the country between September 2007 and 2008 were construction (employment down 6.1 percent), manufacturing (-3.2 percent), and finance (-1.3 percent). With energy prices reaching historic highs, the natural resources sector has seen employment jump by 9.8 percent over the year. Education and health, leisure and hospitality, and other services were the only other growth sectors nationwide.



The Aerospace Industry in Washington looks solid due to the number of outstanding orders.

While Washington state has suffered through some well-documented difficulties in the construction and finance sectors, it has not been as hard as other areas of the country. Manufacturing in Washington is dominated by the aerospace industry, as opposed to say, the Midwest, where

the automobile industry is the predominant manufacturing sub-sector. This has played to the region's benefit this time around as aerospace remains strong in contrast to automobile production. Manufacturing grew by only 200 jobs from September 2007 to September 2008 in Washington, but at least it grew. However, if aerospace is excluded from manufacturing, there would have been a net decline in employment of 2.1 percent over the year. Leisure and hospitality and government also helped prop up Washington's labor market as both grew by nearly 1.8 percent since September of last year. Information, though smaller in employment than these other sectors, is important and continued to add jobs (3,500) over the year.



As a relatively export-dependent state, we are strongly influenced by global demand.

The outlook for the coming year is somewhat dependent on trends nationally and globally. If the United States economy continues to struggle it can't but negatively impact Washington's economy. As a relatively export-dependent state, we are strongly influenced by global demand; this is positive as long as the dollar remains weak, but could alter if it appreciates. As long as the value of the dollar remains low, it will help Washington's export-oriented industries. As of this writing there's no apparent end in sight for declines in the housing sector. Therefore, it is likely the state will continue to lose jobs in the construction and finance sectors. Aerospace looks solid due to the number of outstanding orders. Information also looks strong, and sectors such as education and health and government should be stabilizing forces.

Currently, it appears that the national downturn may be less severe in Washington state; however this is not a foregone conclusion. In historical context, it may end up looking more like the recession of the early 1990s than the recessions of the early 1980s and 2001.

Seasonal—Structural—Cyclical Industry Employment

Introduction

Changes in employment and unemployment can usually be classified in one of three categories – seasonal, cyclical, or structural (otherwise referred to as trend). Identifying industries that are historically influenced by one or more of these factors gives us a better understanding of labor markets, causes of unemployment and ways to plan for its impact.

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, 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, also referred to as trend 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.

In this analysis we examine two different approaches to analyzing economic cycles. 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 employment changes are related 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 primarily at the three- and four-digit North American Industry Classification System (NAICS) level, with the Employment Security Department’s covered employment data series¹. Using a time series for each of these industries, factors of employment change were broken into four different components – seasonal, cyclical, trend (structural), and irregular. Overall there are 98 time series.

¹ For more information on the methodology used as well as the complete table, go to: http://www.workforceexplorer.com/admin/uploadedPublications/9390_NAICS_Empl_timeseries.pdf

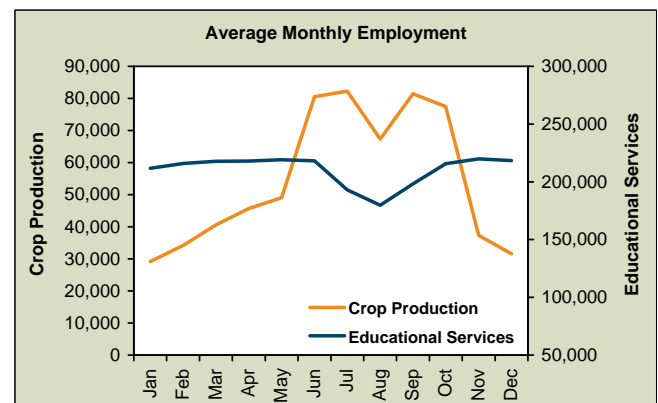
Seasonal

Figure 20
Industries Showing the Highest Degree of Seasonality
Washington, January 1990 to December 2007
Source: LMEA/Employment Security Department

Highly Seasonal Industries		
Codes	Titles	Seasonal Factor
111	Crop Production	35.2%
487	Scenic and Sightseeing Transportation	14.9%
115	Agriculture and Forestry Support Activities	13.9%
237	Heavy and Civil Engineering Construction	9.3%
213	Support Activities for Mining	9.0%
114	Fishing, Hunting and Trapping	9.0%
711	Performing Arts and Spectator Sports	7.9%
721	Accommodation	6.0%
611	Educational Services	5.0%
311	Food Manufacturing	4.8%
448	Clothing and Clothing Accessories Stores	4.6%
713	Amusements, Gambling, and Recreation	4.5%
512	Motion Picture and Sound Recording Ind.	4.4%
452	General Merchandise Stores	4.3%
492	Couriers and Messengers	4.2%
312	Beverage and Tobacco Product Manuf.	4.1%

According to this methodology, since 1990, crop production employment has been more influenced by seasonal patterns than any other category showing a seasonal factor of 35.2 percent. As depicted in *Figure 21* below, employment in educational services, the eighth most seasonal industry, is very stable until the summer months when it dips before returning to form in the fall. Crop production has a nearly opposite employment pattern. Employment quickly rises in the spring, takes a dip in the late spring between the cherry and apple harvests, and peaks in late summer/early fall.

Figure 21
Average Monthly Employment in Educational Services and Crop Production
Washington, January 1990 to December 2007
Source: LMEA/Employment Security Department



At the other end of the spectrum are industries showing virtually no seasonal impact. The industries listed in *Figure 22* have the least amount of seasonal fluctuation. The credit intermediation and related activities 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, as well as those from the medical field, are predominant in this list of non-seasonal industries.

Figure 22

Non-seasonal Industries

Washington, January 1990 to December 2007

Source: LMEA/Employment Security Department

Non-seasonal Industries		
Codes	Titles	Seasonal Factor
522	Credit Intermediation and Related Activities	0.3%
622	Hospitals	0.3%
524	Insurance Carriers and Related Activities	0.4%
541	Professional and Technical Services	0.4%
551	Management of Companies and Enterprises	0.4%
621	Ambulatory Health Care Services	0.4%
334	Computer and Electronic Product Manuf.	0.4%
623	Nursing and Residential Care Facilities	0.4%
523	Securities, Commodity Contracts, Investments	0.5%
511*	Other Publishers	0.5%
423	Merchant Wholesalers, Durable Goods	0.6%
3366	Ship and Boat Building	0.6%
3364	Aerospace Product and Parts Manufacturing	0.6%
518	ISPs, Search Portals, and Data Processing	0.6%
331	Primary Metal Manufacturing	0.7%
5171	Wired Telecommunications Carriers	0.7%
521	Monetary Authorities - Central Bank	0.7%
333	Machinery Manufacturing	0.7%
335	Electrical Equipment and Appliance Manuf.	0.7%
325	Chemical Manufacturing	0.7%
323	Printing and Related Support Activities	0.8%
562	Waste Management and Remediation Services	0.8%
5112	Software Publishers	0.8%
515	Broadcasting, except Internet	0.8%
624	Social Assistance	0.9%
488	Support Activities for Transportation	1.0%
486	Pipeline Transportation	1.0%
481	Air Transportation	1.0%

Note: *This is an aggregated code including all other publishers.

Trend/Structural

Industry employment over time can also be analyzed to see the long-term trend. This is referred to as the structural component of growth, and is typically due to changes in technology or management of policies that favor or discourage growth within certain industries.

Essentially, the process is to measure how much long-term trends contribute to employment growth (as opposed to cyclical ups and downs). According to this process, the

software publishers industry is the one for which employment growth is most influenced by long-run trends (*Figure 23*). A full 74 percent of employment changes between 1990 and 2007 can be explained by trend as opposed to cyclical changes. During this period, over 40,000 jobs were added amounting to an increase of 543 percent. Clearly this industry was in its infancy in the early 1990s and has experienced tremendous growth since. After software publishers, the industries most strongly influenced by trends were ambulatory health care services, food services, and social assistance.

Figure 23

Industries Most Influenced by Employment Trends

Washington, January 1990 to December 2007

Source: LMEA/Employment Security Department

Codes	Industry Title	Trend Component	1990 to 2007 Employment Change	
			Percent	Number
5112	Software Publishers	74.3%	543%	40,180
621	Ambulatory Health Care Services	67.0%	70%	49,098
722	Food Services and Drinking Places	62.7%	44%	60,704
624	Social Assistance	60.9%	128%	37,666
453	Miscellaneous Store Retailers	58.7%	30%	4,798
903	Local Government (other)	58.1%	N/A	N/A
541	Professional and Technical Services	58.1%	45%	42,195
238	Specialty Trade Contractors	58.1%	101%	61,250
611	Educational Services	57.3%	48%	78,450
423	Merchant Wholesalers, Durable Goods	56.3%	36%	17,806
622	Hospitals	55.5%	47%	31,524
425	Electronic Markets and Agents and Brokers	55.3%	37%	3,477
333	Machinery Manufacturing	53.3%	28%	3,266
523	Securities, Commodity Contracts, Invest.	53.1%	91%	5,125
516	Internet Publishing and Broadcasting	53.1%	N/A	N/A

Cyclical

Using the same method of breaking down contributions to employment growth, we can also identify cyclical industries (*Figure 24*). More specifically, it would be industries that have internal cycles that show persistent deviation from trend.



The software publishers industry is the one for which employment growth is most influenced by long-run trends.

Figure 24
Industries Most Influenced by Cyclical Employment
Washington, January 1990 to December 2007
Source: LMEA/Employment Security Department

Codes	Titles	Cycle	Correlation with Total Employment
487	Scenic and Sightseeing Transportation	83.2%	-74.9%
111	Crop Production	83.0%	-13.6%
213	Support Activities for Mining	79.5%	-80.4%
562	Waste Mgmt. and Remediation Services	78.9%	-23.5%
112	Animal Production	78.5%	72.0%
483	Water Transportation	77.5%	-11.3%
316	Leather and Allied Product Manufacturing	74.3%	-85.2%
486	Pipeline Transportation	74.1%	-86.5%
515	Broadcasting, except Internet	73.5%	-72.2%
221	Utilities	73.2%	-87.6%
446	Health and Personal Care Stores	72.7%	80.4%
324	Petroleum and Coal Products Manuf.	71.9%	34.2%
901	Federal Government (other)	71.7%	-26.4%
313	Textile Mills	71.7%	-77.4%
711	Performing Arts and Spectator Sports	71.5%	-17.6%

The scenic and sightseeing industry has the growth that is most attributable to cyclical factors (83.3 percent). It has exhibited inconsistent trends, primarily because component sub-industries are trending differently. The two industries with the next highest levels of cyclicity are crop production and support activities for mining. Overall, the top 15 list has strong representation from the transportation and resource extraction industries. Note also that most of the industries listed in *Figure 24* have a negative correlation with total employment. This means that industry employment tends to move in patterns opposite to the pattern of overall employment.

Figure 25
Industries Most Influenced by Total Employment
Washington, January 1990 to December 2007
Source: LMEA/Employment Security Department

Codes	Titles	Cycle	Correlation with Total Employment
561	Administrative and Support Services	47.9%	98.7%
441	Motor Vehicle and Parts Dealers	53.0%	98.6%
541	Professional and Technical Services	41.9%	98.6%
335	Electrical Equip. and Appliance Manuf.	59.3%	98.3%
812	Personal and Laundry Services	48.2%	98.3%
722	Food Services and Drinking Places	37.3%	98.1%
485	Transit and Ground Passenger Trans.	60.4%	97.5%
423	Merchant Wholesalers, Durable Goods	43.7%	97.4%
611	Educational Services	42.7%	97.3%
443	Electronics and Appliance Stores	64.3%	97.3%
5112	Software Publishers	25.7%	97.1%
713	Amusements, Gambling, and Recreation	50.8%	97.1%
444	Bldg. Material and Garden Supply Stores	54.4%	96.7%
532	Rental and Leasing Services	50.0%	96.5%
238	Specialty Trade Contractors	41.9%	96.1%

We can also focus on industries that move in close conjunction with the economy as a whole (or at least total employment). The administrative and support services industry shows the strongest relationship to the state's business cycle, with a correlation of 98.7 percent (*Figure 25*). Services and retailers are the most common among industries highly influenced by total employment. Presumably, as the economy grows, there is more overall demand for various services, and with more people employed there is more overall consumption. It is worth noting that the "cycle" percentages displayed in *Figure 25* are not particularly high. For all industries analyzed, the average cyclical percentage was 52.4, a number only surpassed by five of the fifteen industries shown in *Figure 25*.



The administrative and support services industry shows the strongest relationship to the state's business cycle, with a correlation of 98.7 percent.

Unemployment and its Dimensions

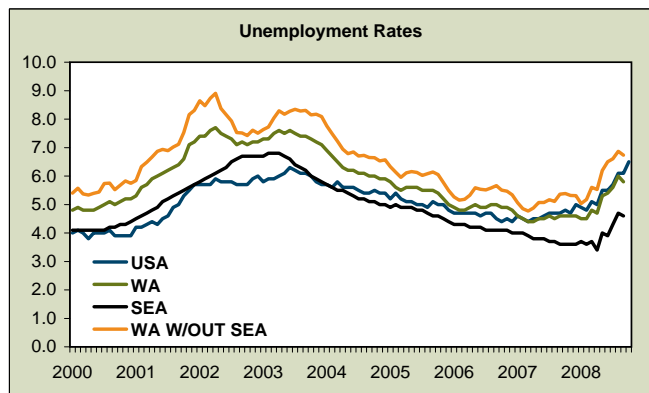
Introduction

Many indicators are used to determine the difficulty of obtaining employment in a given labor market. The regular unemployment rate is widely used in economic research as a lagging indicator of the overall direction of the economy.¹ 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 the long-term unemployed as well as the industries that commonly contribute to cyclical unemployment.

The Regular Unemployment Rate

Figure 26

Unemployment Rates by Area
United States, Washington State, Seattle, and
Non-Seattle Washington
January 2000 to September 2008
Source: Local Area Unemployment Statistics,
Haver Analytics



For the first nine months of 2008 (*Figure 26*) the average unemployment rate was 4.6 for the U.S., 4.5 for Washington, 3.8 for Seattle, and 5.1 for non-Seattle Washington.

¹ The regular unemployment rate is based on a monthly survey of households (Current Population Survey or CPS), a joint effort of the Bureaus of the Census and Labor Statistics. The regular unemployment rate is also referred to as the CPS unemployment rate or the Total Unemployment Rate (TUR).

² Under current state law, individuals can receive unemployment benefits for up to 26 weeks in any 52-week benefit year. The 52-week benefit year begins upon application for UI benefits, and a person may have one or more episodes of unemployment during a single benefit year. In times of high unemployment,

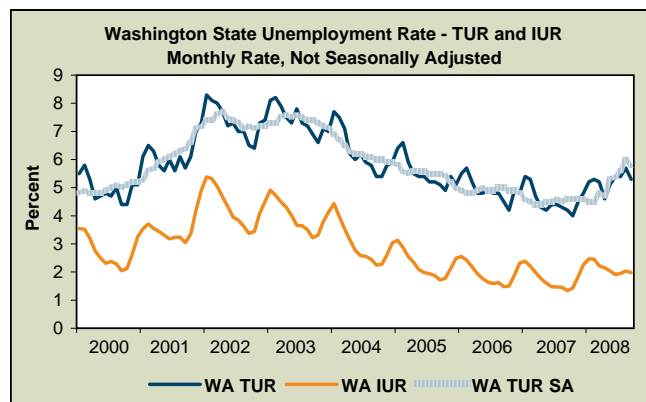
However, in September and October these rates rose dramatically to 6.3 and 6.5 for the nation and to 5.7 and 6.3 for Washington, respectively.

The Insured Unemployment Rate

The *insured unemployment rate*, calculated solely from Unemployment Insurance (UI) program data, is of special importance during times of rising joblessness because it has the potential to trigger an extension of UI benefits.² This rate does not attempt to represent the entire economy. It refers to people working in industries that are *covered* by unemployment insurance.³ In Washington state, 90 percent of all workers are covered by unemployment insurance.⁴

Figure 27

Monthly Unemployment Rates, Washington State
January 2000 through September 2008
Source: Haver Analytics



Note: TUR - Total Unemployment Rate
IUR - Insured Unemployment Rate

Unemployment Insurance Beneficiaries

A *new* beneficiary means that an individual received the first payment on a new UI claim. For example, the data reported in *Figure 28* show that between October 2007 and September

additional weeks of benefits are available through the *extended* and *emergency* benefit programs. Additional weeks of benefits may also be available to laid-off workers who need job-related training to find new employment.

³ The term *covered* means that individuals losing jobs in these industries are entitled to receive UI benefits, in contrast to people working in *noncovered* industries who are not entitled to receive UI benefits.

⁴ Noncovered employees include the self-employed, elected officials, railroad employees, workers at religious and private education organizations, and exempt corporate officers.

2008 the construction industry had 23 percent of all new UI beneficiaries. In contrast, construction's share of total covered employment was only 6.6 percent. The ratio of these two percentage shares (23 percent divided by 6.6 percent) yields a factor of 3.5, meaning that construction had a high share of beneficiaries relative to its share of total employment.

Figure 28
Unemployment Insurance New Beneficiaries Relative to Covered Employment
Washington State, October 2007 through September 2008
Source: Unemployment Insurance Data Warehouse, Continued Claims Database, QCEW 2007 Annual Average, Preliminary

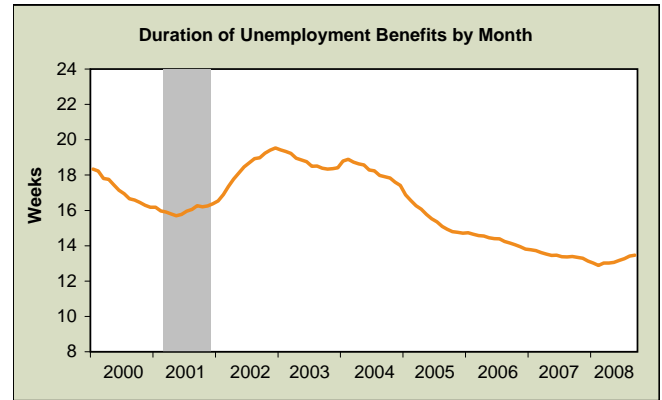
Industry	New Beneficiaries to Employment Ratio	Share of Total Covered Employment	Share of Total New Beneficiaries
Mining	4.0	0.1%	0.4%
Construction	3.5	6.6%	23.0%
Agric., Forestry, Fishing and Hunting	2.0	2.9%	5.9%
Admin. Support and Waste Mgmt.	1.5	5.1%	7.9%
Manufacturing	1.4	9.9%	14.3%
Educational Services	1.3	1.1%	1.4%
Transportation and Warehousing	1.2	2.9%	3.6%
Finance and Insurance	1.0	3.5%	3.4%
Real Estate and Rental Leasing	1.0	1.7%	1.7%
Utilities	1.0	0.2%	0.2%
Wholesale Trade	1.0	4.3%	4.2%
Arts, Entertainment, and Recreation	0.9	1.6%	1.5%
Professional and Technical Services	0.8	5.2%	4.2%
Other Services	0.7	3.9%	2.7%
Retail Trade	0.7	11.0%	8.2%
Accommodation and Food Services	0.6	7.9%	4.5%
Information	0.6	3.5%	2.0%
Health Care and Social Assistance	0.5	10.1%	5.4%
Government (excluding Educ. Svcs.)	0.1	17.4%	2.0%
Mgmt. of Companies and Enterprises	0.1	1.2%	0.1%
Information Not Available	-	-	3.3%
Total		100.0%	100.0%

Note: Covered employment available with a 6-month lag.

Duration of Unemployment Benefits

The *duration* of benefits refers to the number of weeks that UI benefits are paid during the benefit year. *Figure 29* shows that the duration of benefits in Washington state since 2000 was highest immediately following recessionary periods (such as the 2001 national recession – shaded area); and it was lowest during prosperous times when unemployed workers could find replacement jobs more readily.

Figure 29
Duration of Unemployment Benefits
Washington State, January 2000 through September 2008
Source: ETA Monthly Program and Financial Data



Long-Term Unemployment

For the 12-month period ending September 30, 2008, unemployed individuals in Washington were paid benefits for an average of 13.5 weeks. However, eligible unemployed persons do not *exhaust* their benefits until they have received all 26 weeks of their UI payments. In difficult economic times when jobs are scarce, UI benefit exhaustees may well become part of the long-term unemployed.

Figure 30 shows the number of UI benefit exhaustees by month for the past three years. The current year's data show a changing pattern in exhaustions, with the August 2008 level of 4,421 exhaustees surpassing the previous monthly high recorded in April 2006. The rising level of exhaustees has occurred despite rising total state employment in 2006, 2007, and during the first three quarters of 2008.



Eligible unemployed persons do not exhaust their benefits until they have received all 26 weeks of their UI payments.

Figure 30
 Number of Beneficiaries who Exhausted Their Unemployment Insurance Benefits by Month Washington State, January 2006 through September 2008
 Source: Unemployment Insurance Data Warehouse, Continued Claims Database

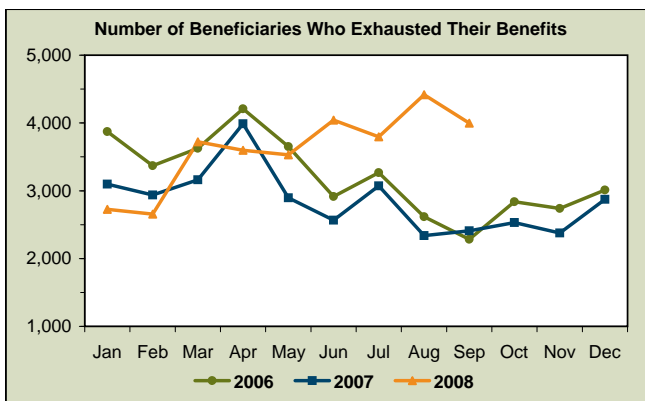
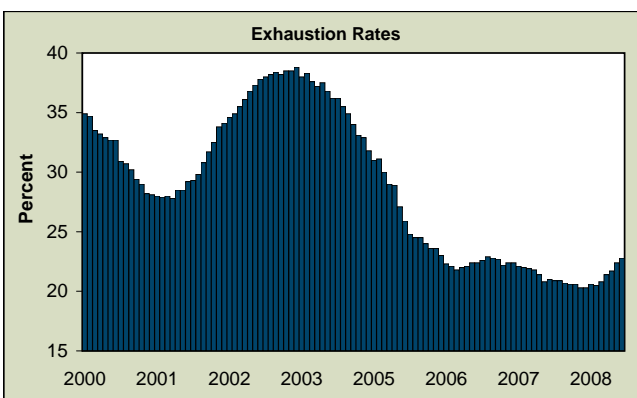


Figure 31 shows Washington’s exhaustion rate calculated on a monthly basis.⁵ This calculation uses moving average data and allows for the fact that it takes 26 weeks to exhaust benefits. In September 2008, Washington’s monthly exhaustion rate was 22.8 percent.

Figure 31
 Unemployment Insurance Exhaustion Rate Washington State, January 2000 through August 2008
 Source: Haver Analytics



⁵ While federal officials release this information quarterly, a comparable monthly figure can be obtained from state UI Program data.

UI Exhaustions by Region, Industry, and Occupation

In some cases, higher exhaustion rates are associated with long-term unemployment conditions. This means that the information presented in Figure 30 can be further analyzed by area, industry, and/or occupation in order to provide information about areas, industries, and/or occupations that are potentially confronted with this situation.

For example, using Workforce Development Areas (WDAs) as the geographic basis, Figure 32 shows that the exhaustion rate varied from a low of 15.0 percent in the North Central WDA to a high of 24.6 percent in Seattle-King County during the October 2007 to September 2008 period. Seattle-King County is an area of intense economic activity. Therefore, a high exhaustion rate for Seattle-King County could predate a period of long-term unemployment; or it may simply reflect the fact that UI exhaustees must compete with the large resident labor force in WDA 5.

Figure 32
 Unemployment Insurance Exhaustions by Area Washington State, October 2007 through September 2008
 Source: Unemployment Insurance Data Warehouse, Continued Claims Database

Workforce Development Area		Annual Exhaustions	Annual Exhaustion Rate
1	Olympic	1,756	23.7%
2	Pacific Mountain	3,112	21.4%
3	Northwest WA	1,860	19.1%
4	Snohomish County	3,787	22.4%
5	Seattle-King County	9,464	24.6%
6	Pierce County	4,601	23.3%
7	Southwest WA	3,052	24.0%
8	North Central WA	1,565	15.0%
9	South Central WA	2,773	20.5%
10	Eastern WA	836	19.4%
11	Benton-Franklin	1,335	17.0%
12	Spokane County	2,638	20.9%
	Information Not Available	16	0.0%
Total		36,779	21.9%

Figure 33 reports the exhaustion rates, by industry, for the period between 2007 and 2008. The finance and insurance sector’s 35 percent exhaustion rate is consistent with its declining employment trend during 2008. The lowest exhaustion rates were in agriculture, transportation and warehousing, and accommodation and food services.

These types of industries may provide more plentiful replacement work for UI beneficiaries because of their seasonal and worker turnover characteristics.

Despite the sharp contraction in construction employment during 2008, the exhaustion rate for this industry remains low at 16.7 percent. This reflects a variety of factors, including but not limited to the ability of unemployed construction workers to qualify for UI, and the ability of construction workers to find replacement work.

Figure 33
Unemployment Insurance Exhaustions by Industry
Washington State, October 2007 through September 2008
Source: Unemployment Insurance Data Warehouse,
Continued Claims Database

Industry (2-Digit NAICS)	Annual Exhaustions	Annual Exhaustion Rate
Agric., Forestry, Fishing and Hunting	1,503	14.5%
Mining	171	23.4%
Utilities	69	24.3%
Construction	6,165	16.7%
Manufacturing	4,814	19.5%
Wholesale Trade	1,817	26.7%
Retail Trade	3,266	24.3%
Transportation and Warehousing	1,201	20.0%
Information	1,047	31.7%
Finance and Insurance	2,077	35.0%
Real Estate and Rental Leasing	904	31.5%
Professional and Technical Services	1,772	25.7%
Mgmt. of Companies and Enterprises	52	25.1%
Admin. Support and Waste Mgmt.	3,035	22.8%
Educational Services	671	27.1%
Health Care and Social Assistance	2,538	26.5%
Arts, Entertainment, and Recreation	659	24.1%
Accommodation and Food Services	1,433	18.4%
Other Services	1,308	28.9%
Government (excl. Educ. Services)	1,055	29.1%
Information Not Available	1,222	20.9%
Total	36,779	21.9%

Figure 34, which analyzes UI exhaustions by occupation, shows that occupations facing potentially more long-term unemployment included business and financial operations, office and administrative support, management, protective service, and personal care and service. In contrast, during the October 2007 to September 2008 period, UI beneficiaries in construction and extraction and transportation and material moving had the lowest exhaustion rates at 16.1 percent.

Figure 34
Unemployment Insurance Exhaustions by Occupational Group
Washington State, October 2007 through September 2008
Source: Unemployment Insurance Data Warehouse,
Continued Claims Database

Occupational Group (2-Digit SOC)	Annual Exhaustions	Annual Exhaustion Rate
11 Management	4,009	29.8%
13 Business and Financial Operations	1,461	32.5%
15 Computer and Mathematical	785	20.7%
17 Architecture and Engineering	566	23.2%
19 Life, Physical, and Social Science	310	26.7%
21 Community and Social Services	271	27.4%
23 Legal	233	28.8%
25 Education, Training, and Library	354	16.9%
27 Arts, Design, Entertain., Sports, and Media	529	24.6%
29 Health Care Practitioners and Technical	488	25.7%
31 Health Care Support	492	24.5%
33 Protective Service	521	29.4%
35 Food Preparation and Serving Related	1,136	17.7%
37 Building and Grounds Cleaning and Maint.	770	18.9%
39 Personal Care and Service	930	29.1%
41 Sales and Related	3,343	26.5%
43 Office and Administrative Support	5,232	32.0%
45 Farming, Fishing, and Forestry	1,821	17.5%
47 Construction and Extraction	5,750	16.1%
49 Installation, Maintenance, and Repair	1,618	20.7%
51 Production	3,441	18.7%
53 Transportation and Material Moving	2,525	16.1%
Information Not Available	194	30.3%
Total	36,779	21.9%



In difficult economic times when jobs are scarce, UI benefit exhaustees may well become part of the long-term unemployed.

Unemployment and its Dimensions: 2008 Mass Layoff Statistics

The Mass Layoff Statistics (MLS) program is a federally funded program that has collected Washington state mass layoffs information since 1996. Each week this program collects data on firms with 35 or more unemployment insurance (UI) initial claims that are filed against an establishment during a consecutive five-week period. If those initial claims total 50 or more, the MLS program contacts those establishments to determine whether those separations are at least 31 days in duration. The program also asks the employer:

- what the reason was for the layoff;
- if there will be an expected recall; and
- if the layoff is associated with the movement of work domestically or globally.



The general purpose of the MLS program is to identify areas and industries within the state that are potentially economically distressed.

The general purpose of the MLS program is to identify areas and industries within the state that are potentially economically distressed. The data are also used to help allocate services and funding to those distressed workers and areas for re-employment resources.

As of September 2008, many national economic indicators began to show a general decline. However, since this report covers MLS activity between March 2007 and September 2008, it may not be until late January 2009 before the economic trends of the fourth quarter are reflected in Washington's MLS data.

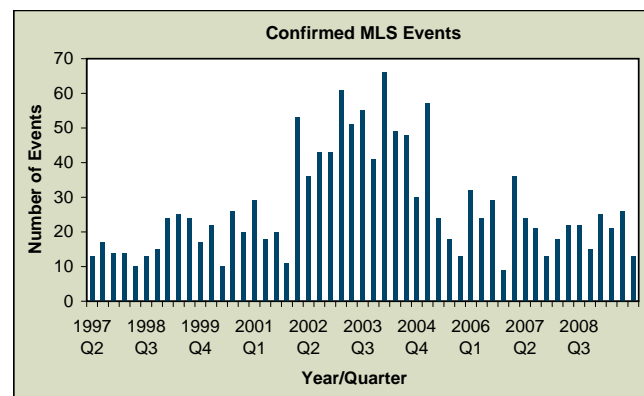
The historical data for Washington have shown fewer Mass Layoff events and separations since the 2001 recession. This trend continued in to 2008 with a slight increase in layoff activity from the previous year, but well below the recession activity from 2001 to 2003. In the four quarters from the fourth quarter of 2007 to the third quarter of 2008, Washington state employers reported 85 Mass Layoff Events (MLEs) that resulted in the separation of 10,068 workers from their jobs for at least 31 days. MLEs increased by 10.4 percent for the four quarters from the fourth quarter of 2007 to the third quarter of 2008 compared to the same four quarters from a year earlier.

Figure 35

Confirmed MLS Events

Statewide from 1997:Q2 to 2008:Q3

Source: Mass Layoff Statistics Program, 2008

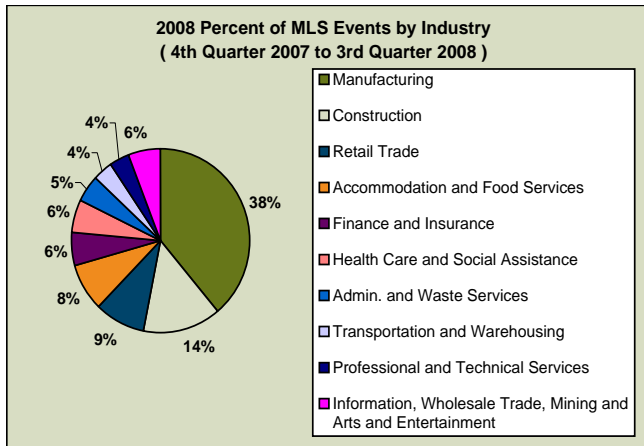


Note: *Includes all events triggered including *Refusal* and *Does Not Know*.

Mass Layoffs by Industry

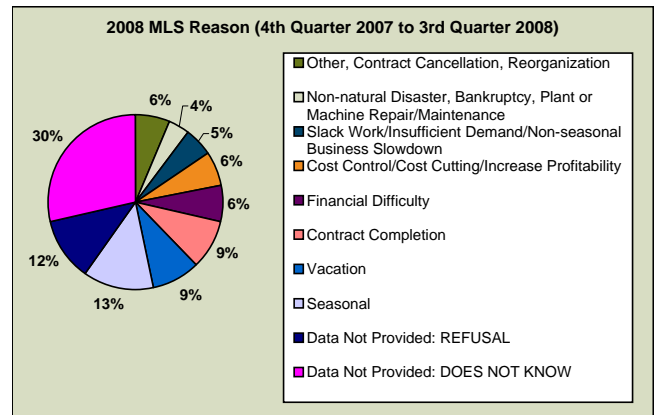
The data for the fourth quarter of 2007 through the third quarter of 2008 showed an increase in events from the previous four quarters in the manufacturing, accommodations and food, health care and social assistance, administrative and waste services, transportation and warehousing services, and information industry sectors. Industries that showed a decline in MLS events were: construction, retail trade, finance and insurance, and professional and technical services.

Figure 36
Confirmed MLS Events Statewide by Industry
From 2007:Q4 to 2008:Q3
Source: Mass Layoff Statistics Program, 2008



Mass Layoffs by Reason

Figure 37
Confirmed MLS Reasons Statewide
From 2007:Q4 to 2008:Q3
Source: Mass Layoff Statistics Program, 2008



Other Mass Layoff Trends

From the fourth quarter of 2007 to the third quarter of 2008, there were no reported extended mass layoffs that involved the movement of work within the same company or to a different company, whether domestic or outside of the United States. There has been a trend of less layoff events that involved the movement of work since 2005. Current mass layoffs do not seem to involve the movement of workers domestically to outside of the United States.

In 46 MLS events employers anticipated recalling most of their workers, which is 54 percent of the total event for the four quarters reported. This involved an anticipated recall of 3,522 MLS separations or about 35 percent of all reported MLS separations. Between the fourth quarter of 2007 and the third quarter of 2008, permanent worksite closures were reported in less than three MLS events. From the fourth quarter of 2006 to the third quarter of 2007, there were four reported closures associated with mass layoff events.



Current mass layoffs do not seem to involve the movement of workers domestically to outside of the United States.

Washington's Aging Workforce

Introduction

The retirement of baby boomers will likely have a huge impact on both the nation and the state, presenting a combination of challenges and opportunities. The purpose of this chapter is to inform on the age demographics of Washington job holders. The Local Employment Dynamics (LED)¹ dataset, as well as a few other sources of demographic data, help to inform on which industries will most likely be affected and how the retirement of the baby boomers may affect our state. About 13 percent of Washington's workforce, ages 45 to 64, is in the health care industry. Higher patient volume associated with an aging population coupled with 42 percent of workers in the health care industry nearing retirement age, add to fears of potential labor shortages. However, impacts of turbulent housing and financial markets could defer retirement for some.

This report defines *older workers* as those job holders aged 55 and older, as many reports on an aging workforce have done. *Baby boomer* refers to anyone born in this country between 1946 and 1964; this group is now at or near retirement age.

Age Demographics of Washington State's Workforce

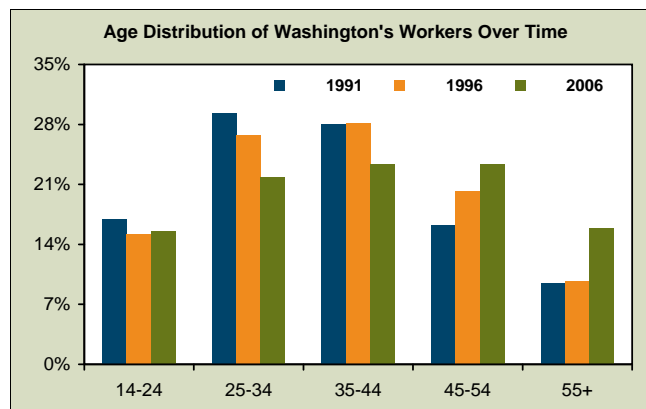
Figure 38 displays the age distribution of Washington's job holders over time. The data strikingly suggest that the state's workforce has indeed aged. The two older groups – those job holders between the ages of 45 and 54 and 55 and older – made up a substantially larger portion of the entire workforce in 2006 (the latest year for which this data are available) than they did in 1991.

¹ The LED program is a partnership between the U.S. Census Bureau and participating states that combines state employment records and workers' demographic data from federal records. This new dataset provides age and gender demographic information at highly detailed industry levels that is updated quarterly and available at several different geographic levels, including state, workforce development area, county, and metro area. There are some important differences in how employment and industry are defined between LED and other LMEA data. LED defines employment as anyone who worked one hour for the same employer for two consecutive quarters. It includes private as well as all levels of government employment and introduces random error to protect confidentiality. Industries are defined strictly by NAICS, regardless of ownership. Detailed LED definitions are available at: http://lehd.did.census.gov/led/library/techpapers/QWI_definitions.pdf

Figure 38

Age Distribution of Washington's Job Holders Over Time
Washington State, 1991 to 2006

Source: U.S. Census Bureau, LED



Workers between the ages of 45 and 54 made up 16 percent of all Washington job holders in 1991; fifteen years later, that portion jumped to over 23 percent. (This portion is similar across the state, when comparing both urban/rural and eastern/western Washington in 2006.) Likewise, the portion made up by workers 55 and older increased from 9.5 percent in 1991 to 15.8 percent in 2006. This oldest cohort will continue to gain in proportion as the large multitude of workers in the 45 to 54 group age and pass into the 55 and older category.

Middle-aged job holders (between the ages of 35 and 44) made up a smaller portion of all job holders in the more recent period. However, the two youngest age groups (14 to 24 and 25 to 34) have decreased drastically in proportion to the whole, especially the 25 to 34-year-old age group. These declines will largely affect the state's workforce since there is a smaller fraction of workers ready to take the place of retiring workers in years to come.



Baby boomer refers to anyone born in this country between 1946 and 1964; this group is now at or near retirement age.

Also, the Cascade Mountain divide does represent a small demographic difference. Those Washington counties east of the mountains have a slightly larger portion (17 percent) of younger workers ages 14 to 24 than those counties to the west (15 percent), while 25 to 34-year-olds make up a larger portion of the entire workforce in the western counties than the east. The percentage made up by the older age groups does not differ much across Washington's Cascade Range.

Which Industry Sectors Have the Highest Portion of Older Workers?

Certain industry sectors in Washington's economy have higher portions of older workers and will likely be affected more drastically by the oncoming wave of retiring boomers. These older workers are at or near retirement age, meaning they will leave their respective industries within a relatively short period of time. There are two ways of viewing this departure; either they are leaving companies lacking the experience and knowledge they've acquired over years of work, or firms will adapt by getting leaner and more productive.

Figure 39
Portion of Workers Aged 55 and Older Across Industries Washington State, 2006
Source: U.S. Census Bureau, LED

Industry	Employment Aged 55 and Older	Percent of Total Employment
Educational Services	62,152	26%
Utilities	3,784	24%
Public Administration	29,315	22%
Real Estate and Rental and Leasing	9,879	19%
Other Services (except Public Administration)	20,407	19%
Mining	643	19%
Transportation and Warehousing	18,301	19%
Agriculture, Forestry, Fishing and Hunting	15,312	18%
Health Care and Social Assistance	57,815	18%
Manufacturing	45,923	16%
All NAICS Sectors	437,361	16%
Wholesale Trade	18,868	15%
Professional, Scientific, and Technical Services	20,285	15%
Management of Companies and Enterprises	5,489	14%
Finance and Insurance	14,548	14%
Arts, Entertainment, and Recreation	8,286	14%
Administrative and Support and Waste Management and Remediation Services	20,436	14%
Retail Trade	40,899	13%
Construction	18,624	11%
Information	9,643	9%
Accommodation and Food Services	16,756	8%

Figure 39 depicts the proportion of total employment made up by workers aged 55 and older in 2006, in each of Washington's major industry sectors.

Educational services, utilities, and public administration sectors are highest in the percentage of older workers – over 21 percent in that category in the state. Older workers made up a very small percentage of accommodation and food services and information, both less than 10 percent in their respective category. When considering all industries, older workers made up 16 percent of the state's workforce. (These same sectors represent the older workers regardless of being on the west or east side of the mountain border.)

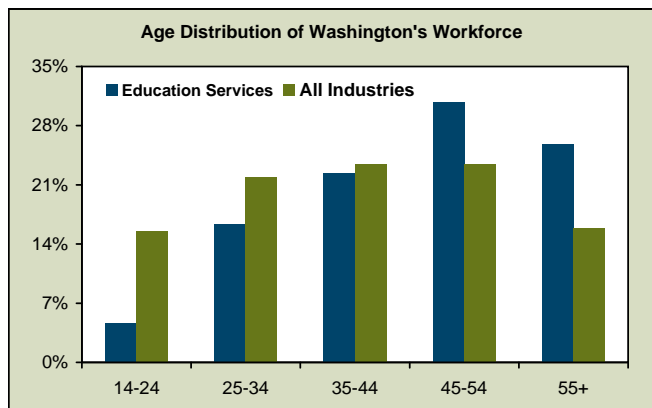


If the average retirement age is 65, then more than 200,000 workers will be of retirement age within the next ten years.

Several industry sectors employ especially large numbers of older workers. Educational services, health care and social assistance, manufacturing, and retail trade each employed more than 40,000 older workers in 2006, totaling 206,788 older workers in these four industries. If the average retirement age is 65, then more than 200,000 workers will be of retirement age within the next ten years. Such massive retirement numbers would leave tremendous voids in these industries, considering that there are relatively small portions of younger workers to fill these jobs.

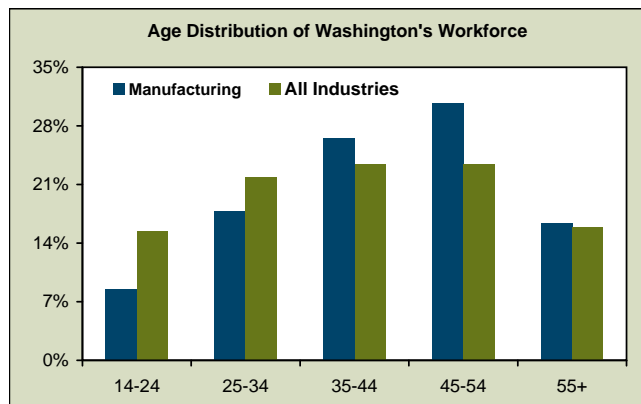
The educational services sector in Washington displays both a high proportion and large numbers of older workers (*Figure 40*).

Figure 40
Age Distribution of Washington's Educational Services Sector
Washington State, 2006
Source: U.S. Census Bureau, LED



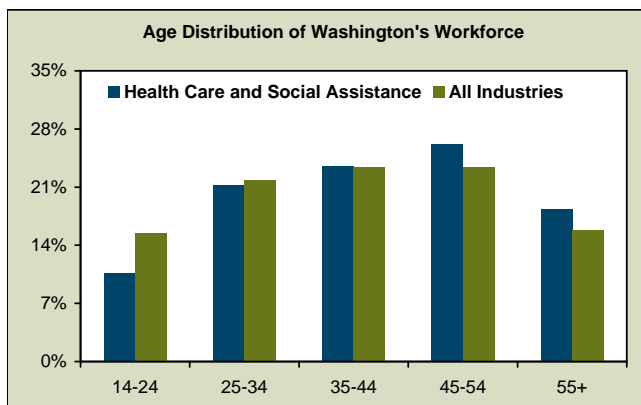
Washington's manufacturing sector is a good example of an industry with an older workforce (*Figure 41*). Notice that workers in the older three categories made up a significantly larger portion of total employment than the all-industry average – and a relatively small number of workers in the pipeline acquiring the skills and knowledge to take over when the baby boomers retire. Of course the manufacturing sector is also well positioned to add technology and increase efficiency to replace lost workers.

Figure 41
Age Distribution of Washington's Manufacturing Sector
Washington State, 2006
Source: U.S. Census Bureau, LED



Meanwhile, Washington's health care and social assistance sector also has significant numbers of *older* workers, but the distribution across age categories is much more similar to the all-industry average (*Figure 42*). This means that there are relatively more young people working in the industry, and thus this industry sector will likely be less affected by an aging workforce than the manufacturing sector, for example.

Figure 42
Age Distribution of Health Care and Social Assistance Sector
Washington State, 2006
Source: U.S. Census Bureau, LED



Occupations

Another way to look at data is by occupation as opposed to industry. Demographic occupational data are hard to come by, but there is some available in the *2006 Washington State Population Survey*.²

Occupational groups such as education, training, and library and health care practitioners closely match their industry counterparts, but many do not. Legal occupations had the highest proportion of workers aged 50 and over – 46 percent (*Figure 43*). However, it should be noted that the data do not include self-employed workers, which are fairly common in legal occupations. The education, social service, and health care occupations all had high shares of older workers. Military specific, food preparation, computer, and construction-related occupations all had comparatively low portions of workers 50 and over. This tracks closely to the industry side where accommodation and food services, information, and construction sectors had relatively fewer older workers. (Note: Military data by industry are not available.)

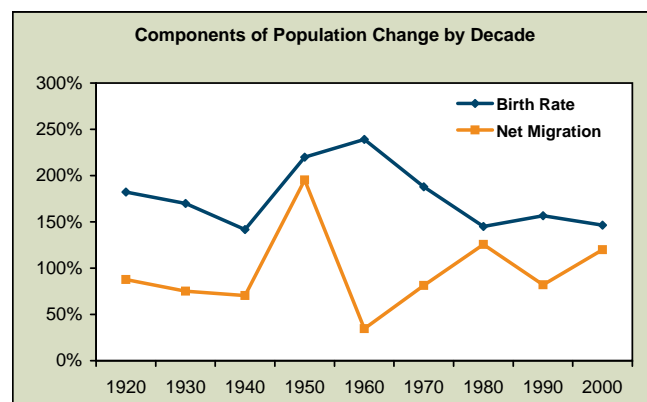
Figure 43
Occupational Groups by Percent Aged 50+ Washington State, 2006
Source: 2006 Washington State Population Survey

Occupational Group	Percent of Workforce 50 Years and Older
Legal	46.2%
Education, Training, and Library	45.7%
Community and Social Service	45.6%
Health Care Practitioners and Technical	43.4%
Management	43.0%
Business and Financial	42.7%
Architecture and Engineering	42.4%
Office and Administrative Support	40.2%
Installation, Maintenance, and Repair	40.0%
Building and Grounds, Cleaning and Maintenance	39.6%
All Occupations	37.1%
Life, Physical, and Social Science	36.1%
Productions	34.4%
Sales and Related	34.2%
Farming, Fishing, and Forestry	33.6%
Arts, Design, Entertainment, Sports, and Media	32.8%
Personal Care and Service	32.4%
Transportation and Material Moving	31.5%
Protective Service	30.2%
Health Care Support	30.1%
Construction and Extraction	29.1%
Computer and Mathematical	26.0%
Food Preparation and Serving Related	14.9%
Military Specific	5.9%

What is Driving This Trend?

As we can see from *Figure 44*, these trends are being caused primarily by changes in the larger population. Since the 1960s, the birth rate in Washington has been on decline. However, until the 1980s or so, this declining birth rate was offset by rising net migration. Since that period, migration has been a mixed bag and for the most part birth rates declined.

Figure 44
Population and Components of Population Change for the State: Per 1,000 Persons Washington State, 1920 to 2000
Source: Office of Financial Management (OFM)
Population/Components of Population Change



According to the Office of Financial Management (OFM), since 1990 the Washington population of 20-somethings has risen by 20 percent; 30-somethings by 1 percent; 40-somethings by 48 percent; and those 50 and over by 68 percent. The Washington state population is aging quickly and it is being matched by the age structure in the state's workforce.

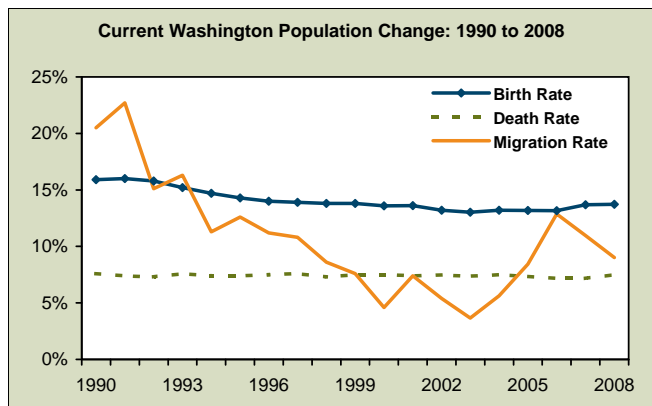
Washington's birth rate in 2008 remained unchanged from one year ago at 13.7 percent (*Figure 45*), according to OFM's population estimates. The death rate increased to 7.5 percent in 2008 after remaining unchanged the year prior at 7.2 percent. Washington had a natural increase in population (births less deaths) of 40,700. Net migration dropped two percentage points to 9 percent in 2008.

² The *2006 Washington State Population Survey* can be found at the Office of Financial Management's Website at: <http://www.ofm.wa.gov/sps/default.asp>.

Figure 45

Population and Components of Population Change for the State: Per 1,000 Persons
Washington State, 1990 to 2008

Source: Office of Financial Management (OFM)



The Office of Financial Management forecasts (out to 2030) the population in their 20s will grow by 17 percent; in their 30s by 27 percent; 40s by 19 percent; 50s by 6 percent; and those 60 and older by 100 percent. If accurate, Washington state will continue to see a relative shrinkage of its core age labor force, with those at or near retirement age increasing rapidly.

Implications of an Aging Workforce

Washington's aging workforce means that large numbers of employees will likely retire within a relatively short time-span, taking with them a great deal of knowledge and experience, and thus possibly affecting firms' productivity. It is often the case that those employees in management positions are also older workers – because they have invaluable industry wisdom – so as baby boomers retire, a good chunk of today's management will retire as well.



Some retirement-age employees will continue to work to keep from becoming bored or because he or she truly enjoys the work.

Of course, the ranks of management have always been filled by more senior employees and no doubt the retiring baby boomers will be followed by the next generation of managers. Also as previously mentioned, retiring workers shouldn't always be seen as a negative. In many cases, the loss of workers can allow companies to become leaner, more adaptive, innovative, and infuse more technology.

Naturally, some retirement-age employees will continue to work for a myriad of reasons, such as to keep from becoming bored in retirement or because he or she truly enjoys the work. Also due to a low savings rate in this country's recent past, a decline in the number of pensions offered to workers, and increases in the Social Security program's eligibility age, many retirement-aged workers will not be financially able to retire at the typical retirement age.



The trend of an aging workforce may shift focus toward recruiting younger workers.

However, local firms have begun to alter their recruiting methods and policies in anticipation of this inevitable retirement en masse. Local firms, such as the Weyerhaeuser Company, have decided to accommodate older workers in order to entice them to work into typical retirement ages, by creating flexible schedules that allow for weeks with lessened work hours or for extended periods of time off. According to the Boeing Company, the average age of their employees was 46 in 2006. This trend of an aging workforce may shift focus toward recruiting younger workers in order to better maintain the pipeline of workers and on educating students on careers in manufacturing. Organizations, such as Washington's Dream It-Do It, focus on broadening awareness of manufacturing careers and recruiting young people into the industry. Hopefully, such efforts will alleviate the challenges caused by a larger proportion of workers nearing retirement.

Employment Projections

Introduction

Occupational and industry employment projections are used by policy makers, business planners, job seekers, and economic analysts. Producing accurate employment projections at the state and smaller sub-state levels in a rapidly changing economy is a challenging task.

Currently, industry forecasts are produced looking two, five, and ten years into the future. The occupational staffing pattern for each industry is then used to convert the industry projections into occupational projections.

The main goal of employment projections is to provide details on projected job growth in Washington. Employment opportunities can be affected by technological advances and changes in the demand for goods and services. Reflected in state and national industry and occupational projections, the aging population will fuel many changes in the supply and demand for goods and services. Looking forward to 2016, occupations will experience varying rates of employment growth; some are projected to decline. Employment projections attempt to incorporate observable demands and trends, but as we have seen with the current financial crisis, trends can change unexpectedly.

Projections Results

Nationally, logging is included in agriculture employment but Washington state includes logging in nonfarm employment. To compare the structural changes in long-term employment projections for the main nonfarm industry sectors, we moved logging employment out of nonfarm employment for our state. The statewide and national industry structures are presented in *Figure 46*.

Overall, the expected structural changes between national and statewide long-term industry projections¹ are similar. However, significant differences were seen in information, construction, and financial activities. The national forecast calls for a slight decrease in industry employment share for information and financial activities while the share of construction employment is expected to remain unchanged. Statewide employment shares for construction and information are significantly higher than national shares in the base year. However, Washington's employment share is lower than the nation for financial activities. We expect further gains in the share for information, but slight decreases for construction and financial activities. Even after these changes, the employment share of Washington's construction industry is expected to be a whole percentage point larger than the nation.

Figure 46

Estimated and Projected State and National Industry Employment Structure

United States and Washington State, 2006 to 2016

Source: LMEA/ESD, U.S. Bureau of Labor Statistics

State and National Long-Term Industry Employment Projections

Industry Sectors	Washington State			National	
	Estimated Employment 2006	Employment Shares in 2006	Employment Shares in 2016	Employment Shares in 2006	Employment Shares in 2016
Mining	3,500	0.1%	0.1%	0.5%	0.4%
Construction	197,400	6.9%	6.6%	5.6%	5.6%
Manufacturing	285,700	10.0%	9.0%	10.4%	8.4%
Wholesale Trade	127,000	4.4%	4.3%	4.3%	4.2%
Retail Trade	322,100	11.3%	10.8%	11.2%	10.5%
Transportation, Warehousing and Utilities	94,000	3.3%	3.2%	3.7%	3.6%
Information	98,500	3.4%	3.8%	2.2%	2.1%
Financial Activities	156,800	5.5%	5.2%	6.1%	6.3%
Professional and Business Services	330,600	11.6%	13.1%	12.8%	14.2%
Education and Health Services	338,000	11.8%	12.9%	13.0%	14.8%
Leisure and Hospitality	272,400	9.5%	9.6%	9.6%	9.9%
Other Services	102,100	3.6%	3.5%	4.6%	4.7%
Government	529,900	18.5%	17.9%	16.1%	15.3%

¹ The BLS does not develop medium, five-year projections.

The fastest growth rate is expected to be in Snohomish County with an annual growth rate of 2.0 percent, down slightly from the previous ten-year average growth rate of 2.2 percent. The slowest growth rate is expected to be in Garfield (0.5 percent). Forecasted annual average growth rates for Washington state and King County (about 1.4 percent) are slightly lower than the actual rate of 1.7 percent for the state and 1.5 percent for King County for the last ten years. Among large areas, Cowlitz and Yakima are projected to have significantly higher growth rates for the next ten years compared to the previous ten-year period. The projected variance between area growth rates is significantly lower than the variance in the past ten years. This is probably due to different techniques used to smooth the projection results. Still, smoothing will probably lead to lower errors. Particularly in smaller areas, it is reasonable to expect larger errors in projections. 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.

Figure 47
Estimated and Projected Occupational
Employment Structure
United States and Washington State, 2006 to 2016
Source: LMEA/ESD, U.S. Bureau of Labor Statistics
Long-Term Occupational Projections

Occupational Title	Estimated and Projected Employment Shares				Shares of Total Average Annual Openings	
	Washington State		Nation		Washington State	Nation
	2006	2016	2006	2016		
Management	3.5%	3.5%	5.8%	5.6%	3.5%	4.7%
Business and Financial Operations	4.5%	4.4%	4.4%	4.6%	3.7%	4.3%
Computer and Mathematical	3.2%	3.6%	2.2%	2.5%	4.5%	3.1%
Architecture and Engineering	2.5%	2.6%	1.7%	1.7%	2.8%	1.7%
Life, Physical, and Social Science	1.5%	1.5%	0.9%	1.0%	1.7%	1.1%
Community and Social Services	1.7%	1.8%	1.6%	1.8%	1.7%	1.9%
Legal	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%
Education, Training, and Library	5.7%	5.7%	6.0%	6.2%	5.3%	6.0%
Arts, Design, Entertainment, Sports, and Media	2.0%	2.1%	1.8%	1.8%	2.3%	1.9%
Health Care Practitioners and Technical	4.3%	4.5%	4.8%	5.2%	4.6%	5.5%
Health Care Support	2.3%	2.5%	2.5%	2.8%	2.2%	2.8%
Protective Service	1.7%	1.7%	2.1%	2.2%	2.0%	2.6%
Food Preparation and Serving Related	7.6%	7.7%	7.5%	7.7%	10.6%	10.6%
Building and Grounds Cleaning and Maintenance	3.6%	3.6%	3.8%	4.0%	3.3%	3.6%
Personal Care and Service	4.1%	4.3%	3.3%	3.6%	4.7%	4.5%
Sales and Related	10.6%	10.3%	10.6%	10.3%	12.0%	12.2%
Office and Administrative Support	14.9%	14.9%	16.2%	15.7%	14.3%	14.6%
Farming, Fishing, and Forestry	2.8%	2.5%	0.7%	0.6%	1.9%	0.5%
Construction and Extraction	6.7%	6.4%	5.5%	5.5%	4.8%	4.4%
Installation, Maintenance, and Repair	3.9%	3.8%	3.9%	3.9%	2.9%	3.0%
Production	5.6%	5.2%	7.1%	6.1%	3.9%	4.6%
Transportation and Material Moving	6.8%	6.7%	6.8%	6.4%	6.5%	5.8%

Results of Occupational Projections

Figure 47 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 business and financial operations occupations, and health care and construction occupations. State projections are more optimistic for production, office and administrative support, transportation, and material moving 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 37.0 percent of total openings for the state and 37.4 percent for the nation.

Overall, by 2016 the state and national occupational employment structures are expected to be closer than they were in 2006. The index of dissimilarity² is expected to decrease from 6.8 percent in 2006 to 6.5 percent in 2016.

The average growth rate for total employment is 1.39 percent. Twelve of 22 occupational groups have projected growth rates larger than the average; the other ten are projected to have lower than average growth rates. The group projected to grow the fastest was computer and mathematical occupations; farming and production occupations were projected to grow the slowest.

The projected annual average growth rates for the major occupational groups in Washington state are presented in *Figure 48*.

Figure 48
Average Annual Projected Growth Rates
Washington State, 2006 to 2016
Source: LMEA/ESD, Long-term Occ. Projections



² The 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).

³ 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. Only occupations, which are not suppressed and for which educational codes and wages are identified, are included in calculations.

For all areas, higher education levels³ are associated with higher wages.⁴ *Figure 49* contains the average employment and wage estimations for the state. All occupations are divided into four educational categories.

Figure 49
Employment and Wages by Educational Levels
Washington State, 2006 to 2016
Source: LMEA/ESD, Bureau of Labor Statistics
Long-term Projections, and Occupational
Empl. Statistics (OES), Outlook Handbook

Preparation and Education Level	Estimated Employment 2006	Average Annual Growth Rate 2006-2016	Average Annual Total Openings 2006-2016	Average Annual Wages (Estimated for March 2008)
Long Preparation Bachelor's Degree or Higher	689,343	1.72%	27,430	\$73,517
Middle-Level Preparation Associate's Degree, Post-Secondary Training, or Long-term On-the-Job Training	828,023	1.37%	29,544	\$51,763
Short Preparation Moderate On-the-Job Training (1-12 Months)	572,071	1.15%	17,602	\$36,738
Little Preparation Short-Term On-the-Job Training (Short Demonstration up to One Month)	1,174,775	1.31%	51,373	\$26,437

The gain for the state in wages is largest with the transition from associate's degree to bachelor's degree, equal to \$21,754. The same is true for all other areas which average a gain of \$17,771. The gain due to the transition from moderate on-the-job training to associate's degree for the state is \$15,025 and averages \$12,450 for all other areas. There is a difference of \$10,301 in wages between moderate on-the-job training and short-term on-the-job training for the state and \$9,736 on average for all other areas. The largest growth rates are expected for occupations which require a bachelor's degree or higher.

Tables for the top 10 ranked⁵ occupations for the state and each local area are presented in the online appendix at: http://www.workforceexplorer.com/admin/uploadedPublications/9392_Top10Occup_Chp6.xls.

⁴ 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 March 2008. For more information regarding OES programs, go to http://www.bls.gov/oes/oes_data.htm.

⁵ Occupations are ranked based on the average of two criteria: average annual growth rate for 2006 to 2016 and total number of job openings due to growth and replacement.

Personal and home care aides and computer software engineers, applications are leading in the number of total openings among top 10 occupations, followed by landscaping and groundskeeping workers, computer software engineers, systems software, computer systems analysts, and computer programmers. However, if we rank total openings among all occupations (except suppressed) the largest number of openings will be for cashiers, retail salespersons, waiters and waitresses, and combined food preparation and serving workers, including fast food. Registered nurses would be ranked seventh on this list. Occupations that require short-term on-the-job training are most common on the list of top ten (61 occurrences), distantly followed by associate's degree, post-secondary training, or long-term on-the-job training (27 occurrences). Occupations that require a bachelor's degree or higher made the top ten list 21 times (13 of the cases are in Washington state and King County).

Use and Misuse of Occupational Projections

Occupational projections show how many job openings are expected due to occupational employment changes and replacement needs. Replacement includes openings created by retirement and separation from occupations for other reasons. It does not include the normal turnover in each occupation as workers go from one employer to another or from one area to another without changing their occupations. Total openings from occupational projections do not represent the total demand, but can be used as an indicator of the demand. Occupations with less than 50 employees are not included in the summary reports.

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, with more education targeting occupations (skills) with shortages there is a higher probability that this will cause an oversupply in those occupations (skills). Second, the general development of transferable skills is much more productive than trying to catch up with the shortage.

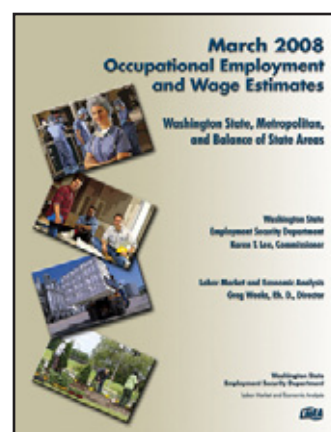
The purpose of our projections is to provide a general outlook for industries and occupations in Washington. While results may not provide a complete picture, our

projections do provide the best guess about Washington's industry and occupational future. For any serious decisions, you will not want to limit your research to just one information source.

Occupational projections are used as a major input for the Demand/Decline list of occupations by Workforce Development Area (WDA).

It is important to remember, that according to BLS: "Standard Occupational Classification (SOC) was designed solely for statistical purposes. Although it is likely that the SOC will also be used for various nonstatistical purposes (e.g., for administrative, regulatory, or taxation functions), the requirements of government agencies that choose to use the 2000 SOC for nonstatistical purposes have played no role in its development, nor will OMB modify the classification to meet the requirements of any nonstatistical program. Consequently, as has been the case with the 1980 SOC (Statistical Policy Directive No. 10, Standard Occupational Classification), the SOC is not to be used in any administrative, regulatory, or tax program unless the head of the agency administering that program has first determined that the use of such occupational definitions is appropriate to the implementation of the program's objectives."

Different programs use slightly different coding systems. Combining the employment projections with other data sources generally requires case-by-case analysis and an understanding of the differences in the programs. When this combination is done, by simple formal matching of the directories, it might create biases and misleading information. In all cases, restrictions and differences of each program should be clearly explained and handled properly.



The OES Survey Report covers Washington state, metropolitan and balance of state.

For example, combining occupational projections with wages requires an explanation. Wages come from the Occupational Employment Statistics (OES) survey and are subject to restrictions and limitations of the survey. The coding systems are slightly different and should be matched. Agricultural employment is excluded from the survey except for agricultural services. Self-employment and private households are also excluded from the survey. Wages for occupations with a significant share of excluded (from the survey) employment may contain significant biases and can be misleading. The best example of such biases is, applying the wages from agriculture services surveys to general agriculture occupations. The proposed solution would be to avoid publishing such data when biases are obvious and give implicit warning when the biases are expected.

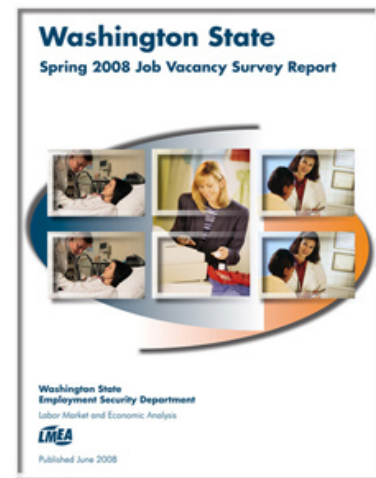
One significant problem occurs when attempts are made to use not-representative results of the projections to support an established point of view. Such cases are expressed well by the famous joke of Andrew Lang: “He uses statistics as a drunken man uses lamp posts – for support rather than for illumination.”

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.workforce-explorer.com/admin/uploadedPublications/9040_JVSApr_08Rep.pdf.

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 gives a snapshot picture of vacancies at one point in time, while projections estimate the annual number of openings. In addition, since the 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 the JVS do not necessarily translate to hiring.⁶ Due to these differences, data are not directly comparable. However, relative rankings of 22 occupational groups (excludes military occupations) can be used to apply a “reality check” on both.



The Job Vacancy Survey gives a snapshot picture of vacancies at one point in time, while projections estimate the annual number of openings.

Rank correlation was used to make comparisons. For projections we used a combined rank for short- and long-term projections based on two indicators: average annual growth rates and average annual total openings. For detailed occupations, the hypothesis of dependence has a low rejection level (less than 0.01 percent for 95 percent confidence level). In other words, the two data sets are highly related and tell similar stories about employers’ demands for certain occupations. However, there are significant differences in individual occupations’ ranks. Projections rank pediatricians general, landscape architects, and some computer-related⁷ occupations significantly higher.⁸ However, some construction-related occupations⁹ are ranked significantly lower relatively in the JVS.

On the aggregated level, the top ranked (ranked number 1) occupational group for employment projections, health care practitioners and technical occupations, is ranked 2nd

⁶ Some employers use openings as a marketing tool or attempt to create a pool of potential candidates. It may also express the need for people, but not necessarily the ability to hire. For example, an extreme number of job openings for registered nurses may not translate to extreme job growth in the occupation and can coexist with a significant number of unemployed workers in this occupation.

⁷ For example, computer specialists, all other ranked 41 in projections but 417 in the JVS. The ranking for individual occupations, at the six-digit SOC level is based on 560 occupations.

⁸ Pediatricians, general ranked 75 in projections but 515 in the JVS. Landscape architects ranked 79 in projections and 506 in the JVS.

⁹ This reflects the expected slowdown in the industry employment. An example of construction related occupations is construction laborers which ranked 491 in projections and 7 in the JVS.

for the JVS. The top ranked occupational group in the JVS is food preparation and serving-related occupations (ranked number four) for occupational projections. The legal occupations have the last rank in both occupational projections and the JVS. The largest difference is in production-related occupations: projections rank them 19th, while the JVS ranks them 8th among 22 aggregated occupational groups.

The projections and the JVS results, at the aggregate level, are much closer if we rank comparable numbers of total openings in short-term projections and the JVS. The occupational structure of job openings for state short-term projections and the JVS are presented in *Figure 50*. The index of dissimilarity for these two structures is 18.4 percent. The Job Vacancy Survey indicates a significantly larger share of openings (compared with short-term projections) for management and health care practitioners and technical occupations, but a significantly lower share of openings for office and administrative support and sales and related occupations.

Figure 50

Occupational Structure of Job Openings
Washington State, 2006 to 2016

Source: Employment Security Department
Short-Term Occupational Projections,
2007 Job Vacancy Survey

SOC	Occupational Title	Projections	JVS
11-0000	Management	3.1%	8.8%
13-0000	Business and Financial Operations	3.5%	3.3%
15-0000	Computer and Mathematical	4.2%	4.5%
17-0000	Architecture and Engineering	2.8%	3.4%
19-0000	Life, Physical, and Social Science	1.7%	0.8%
21-0000	Community and Social Services	1.9%	1.9%
23-0000	Legal	0.6%	0.2%
25-0000	Education, Training, and Library	5.6%	5.0%
27-0000	Arts, Design, Entertain., Sports, and Media	2.3%	1.4%
29-0000	Health Care Practitioners and Technical	5.5%	10.7%
31-0000	Health Care Support	2.7%	4.0%
33-0000	Protective Service	2.3%	0.9%
35-0000	Food Preparation and Serving Related	13.8%	11.7%
37-0000	Building and Grounds Cleaning and Maint.	2.9%	4.1%
39-0000	Personal Care and Service	5.8%	4.3%
41-0000	Sales and Related	12.9%	8.5%
43-0000	Office and Administrative Support	14.1%	9.2%
45-0000	Farming, Fishing, and Forestry	2.2%	1.2%
47-0000	Construction and Extraction	1.0%	3.6%
49-0000	Installation, Maintenance, and Repair	2.5%	2.7%
51-0000	Production	3.1%	4.5%
53-0000	Transportation and Material Moving	5.6%	5.2%

The ranking becomes closer when comparing the JVS and short term projections. Production occupations, in this case, rank 10th in projections; this is close to the JVS which ranks 8th. Computer and mathematical occupations also have similar ranks (8th in projections and 9th in the JVS). The largest number of openings in short-term projections (which ranks number 1) is expected to be in office and administrative support occupations (ranking 3rd in the JVS). The largest number of openings in the JVS is expected to be in food preparation and serving-related occupations, which also has a high rank (2nd) in projections. Legal occupations maintain the last rank for both employment projections and the JVS (22nd).

Regional structures of job openings in the Job Vacancy Survey and short-term projections (*Figure 51*) are much closer than the occupational structure, with an index of dissimilarity less than 4.5 percent.

Figure 51

Regional Structure of Job Openings
Washington State, 2007

Source: Employment Security Department
Short-Term Projections,
2007 Job Vacancy Survey

WDA	JVS	Short-term Projections
Olympic Consortium	4.4%	4.0%
Pacific Mountain	5.9%	5.9%
Northwest	5.3%	5.6%
Snohomish County	7.9%	8.9%
Seattle-King County	41.0%	39.6%
Pierce County	8.4%	9.6%
Southwest Washington	5.5%	6.5%
North Central	4.9%	3.4%
South Central	3.1%	3.8%
Eastern Washington	2.0%	2.2%
Benton-Franklin	4.4%	3.2%
Spokane	7.3%	7.3%

Employment projections concentrate more on expected employment changes and numbers of jobs filled. On the other hand, the JVS concentrates on the number of announced vacant positions, but not necessarily filled positions. For example, the estimated¹⁰ (based on base year numbers)

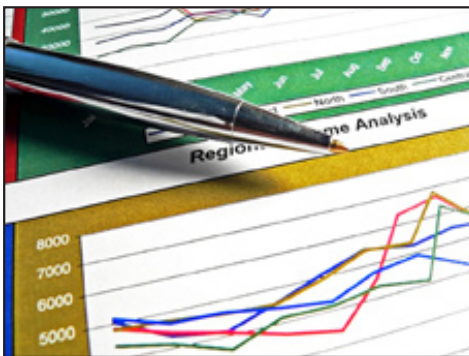
¹⁰ Employment estimations do not represent the historical series and should be used with a high level of caution. However, for some major occupational groups, the estimations are relatively stable and can give a general idea regarding the magnitude of the employment changes.

average annual employment growth for the last two years for health care-related occupations (2004 to 2006) was 3,280. In our short-term projections, we predict annual growth of 5,669 which translates to 8,731 total annual openings due to growth and net replacement for health care-related occupations. The JVS estimation for openings in health care-related occupations is 10,991 for this one point of time.

The standard time series technique advised by *The Projections Workgroup and the Projections Managing Partnership* combines alternative econometric forecasting methods to choose the best fit based on performance measures over the observed time periods.

There are two major sets of data required to produce a forecast:

- employment time series, and
- indicators (independent variables such as the national employment forecast).



The variance between predicted and actual observed results measures the accuracy of projections.

Autoregressive models only use historical employment time series to forecast future employment. Models that are more complex incorporate dependent and independent variables. Structural changes in employment should be incorporated in such complex models through the use of independent leading indicators.

The variance between predicted and actual observed results measures the accuracy of projections. Typically, time series models produce accurate results for industries, areas, and occupations with smooth patterns of development. However, such models tend to fail to predict sharp changes. There are no developed tools to predict structural changes, despite the fact that such predictions are very important.

The different goals for projections justify different priorities. In some cases the results are intended to be used to develop fast corrective actions. For example, employment projections which are used to drive budget forecasts and anticipated changes in the budget should be identified and dealt with immediately. In such cases, we focus on adaptive controls and forecasts which should be updated often to reflect the best and most current data. Up-to-date data take priority over consistency in such cases.

In other cases, projections are intended to be used for career development. Sharp changes that occur frequently would drive the value of such projections down significantly. Consistency takes priority in these cases.

The compromise between statistical accuracy and the ability to predict sharp changes could be achieved by developing a relatively smooth base line forecast (what happens if nothing changes) and a few alternative scenarios which would address the possibility of positive and negative shocks.

The details of methods and the data used to produce industry and occupational projections can be found at: http://www.workforceexplorer.com/admin/uploadedPublications/9061_Projections_June_08.pdf

Due to the combination of private and government employment for education and hospitals, industry control totals could not be directly aggregated to conventional industry sectors. In addition, it is not advisable to use them as detailed industry projections due to low statistical reliability of detailed industry cells. The goal of these processes is to provide input for occupational projections.



In other cases, projections are intended to be used for career development.

Detailed employment projections can be found online.

Medium- and long-term industry projections:

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

Short-term industry projections:

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

Industry control total files:

http://www.workforceexplorer.com/admin/uploadedPublications/4957_ictall.xls (for combined data)

Medium- and long-term industry control totals:

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

Short-term control totals:

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

Combined occupational projections:

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

Medium- and long-term occupational projections:

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

Short-term occupational projections:

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

Staffing patterns used for employment estimations and projections:

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

Full report on employment projections, methodology, and results:

http://www.workforceexplorer.com/admin/uploadedPublications/9061_Projections_June_08.pdf

Due to confidentiality requirements, staffing patterns for some industries are not published.

If you encounter problems accessing any of these sites, please call our Labor Market Information Center at (800) 215-1617 for assistance.

Washington Wage and Income, 2007

Introduction

- 2007 was a good year for wages and income in Washington.
- Both the average annual wage and the median hourly wage reached all-time highs.
- The number of hours worked, and the average hours per worker, were the highest on record going back to 1990.
- From 2002 to 2007, the number of low-wage jobs and high-wage jobs both increased substantially, while the number of mid-wage jobs changed little. Wage inequality increased.
- Wage progression – the median increase in hourly wages for full-time workers – was smaller in 2002 to 2007 than in any five-year period dating back to 1990.
- The percentage of full-time workers suffering a decline in hourly wages was the highest on record dating back to 1990.
- Per capita income in 2007 hit an all-time high, with each component – earned income, investment income, and transfer payments – increasing.
- Median household income and median family income both jumped up in 2006 after several years of stagnation.
- The poverty showed little change, and remained higher than in 2000.
- The number and percentage of households paying more than 30 percent of their income in housing costs – a sign of economic distress – have increased substantially in the past decade.

As Washington's strong economic performance continued in 2006 and into 2007, the question has been raised as to the quality of the recovery in terms of wages and income.

¹ The U.S. Implicit Price Deflator for Personal Consumption Expenditures was used to adjust for inflation. Other sources sometimes use the Consumer Price Index (CPI), but many economists believe that in the past, the CPI overstated inflation. Using different deflators can lead to different conclusions about wage trends.

Following the 2001 recession, job growth in the state of Washington didn't resume until June of 2003, so 2006 could be classified as the third year of the state's recovery. Typically, as a recovery unfolds, it takes a while for the labor market to tighten up again and generate any increase in wages. This was the case for both the nation and the state following the last downturn.

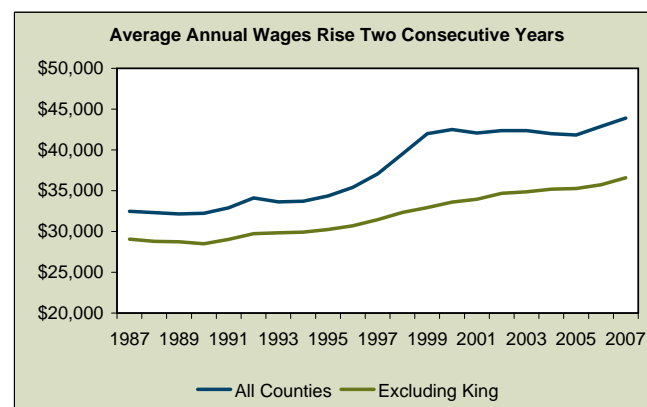
So, has the recovery generated high-wage jobs or low-wage jobs, or both? Have wages moved up at all? How have individual wage-earners fared? How about households and families? This article will present a number of indicators to answer these questions. All wage data have been adjusted for inflation to 2006 constant dollars. Personal income data were converted to 2005 constant dollars.¹

Average Annual Wages

Most jobs in the state of Washington are covered by unemployment insurance. In 2007, monthly covered employment averaged over 2.9 million jobs, with a total payroll of \$132 billion. Divide the two, and the average annual wage comes out to be \$43,906. This was 2.4 percent above the 2006 inflation-adjusted figure, and was the highest on record. Annual wages had been relatively flat from 1999 to 2005, as shown in *Figures 52 and 53*.

Figure 52

Average Annual Wage, Adjusted for Inflation
Washington State (excluding King County), 1987 to 2007
Source: LMEA/Employment Security Department



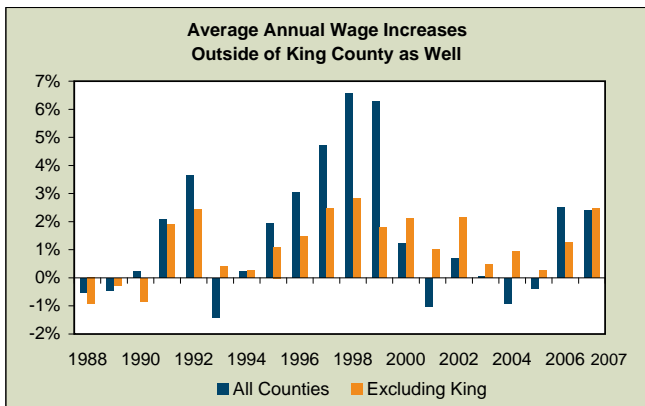
If King County is taken out of the picture, things look different – the average annual wage has increased steadily since the early 1990s. The increase in 2007 was the biggest in a decade.

Hourly Wages

Washington is one of three states in the country that collects data on hours worked on a job,² 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.

- In 2007, over 3.47 million individuals collectively worked 4.8 billion hours, equal to 2.3 million jobs on a full-time equivalency (FTE) basis. All three figures were the highest recorded going back to 1990. The average hours per worker (1,376), also the highest recorded, was 10 percent above the 1990 figure. The increase is likely due to workers working more hours, but could also be affected by the number of workers entering and leaving employment in Washington.³

Figure 53
Change in Average Annual Wage, Adjusted for Inflation Washington State (excluding King County), 1988 to 2007
Source: LMEA/Employment Security Department

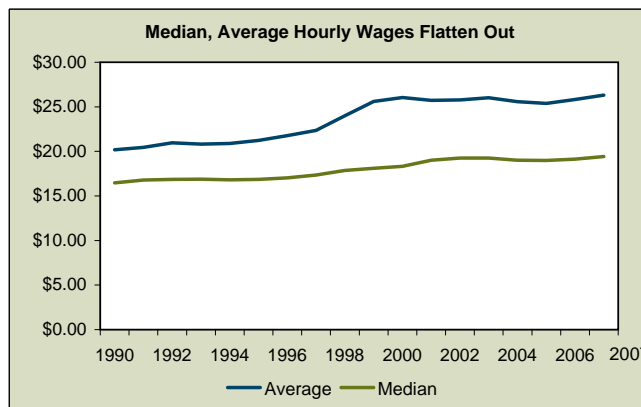


- The average work week, derived by dividing total hours worked by average monthly jobs, was 32.9 hours in 2007. This was a 0.4 hour increase over 2006, and was the highest on record. The average work week ranged from 40.4 hours in corporate

offices, 39.7 in mining, and 39.2 in manufacturing to 22.0 hours in arts, entertainment and recreation, which has a substantial number of seasonal and part-time jobs.

- There was a marked increase in the number of individuals working more than a 40-hour work week. For example, 7.7 percent of all workers logged more than 2,600 hours – the equivalent of 50 hours per week year-round. The previous high was 2.6 percent. The percentage of those working between 2,080 hours and 2,600 hours increased to 19.6 percent, also the highest mark on record. An analysis of these high-hour workers showed that no single industry was responsible for the increase.
- Average hourly wages are calculated by dividing total payroll by total hours worked. The average jumped in the late 1990s when stock options were the rage, reaching an inflation-adjusted peak of \$25.40 per hour in 2000 (*Figure 54*).

Figure 54
Average Hourly Wage, and Median Hourly Wage, Adjusted for Inflation Washington State, 1990 to 2007
Source: LMEA/Employment Security Department



New regulations have excluded stock options from wage data since 2004, so the past three years cannot be fairly compared with the 1998 to 2004 period. However, it can be said that the 2007 average hourly wage of \$26.32 per hour was the all-time high; it was 1.9 percent higher than the year before, the second consecutive substantial increase. It was also \$6.13 higher (30 percent) than the pre-option 1990 era.

² Includes all jobs covered by unemployment insurance, with the exception of federal jobs and private household employers (NAICS 814). Does not include workers not covered by unemployment insurance, including the self-employed, 100 percent sales agents (most real estate and insurance brokers, for example) and most corporate officers (generally the highest-paid positions in a corporation).

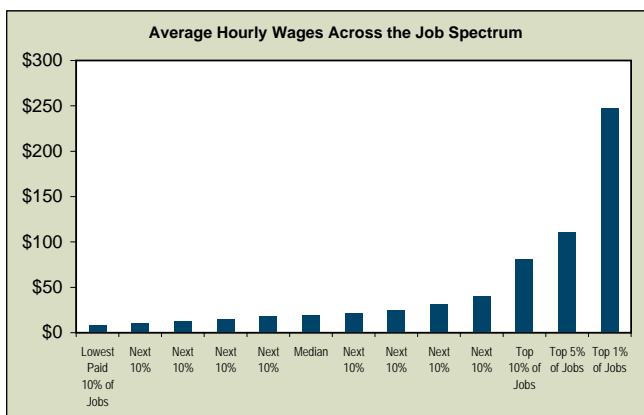
³ Fewer workers entering and leaving the workforce throughout the year would lower the number of workers who work less than full time.

- The median hourly wage is the wage at which half of all jobs pay more, and half pay less.⁴ In 2007, the median reached \$19.42 per hour, 29 cents more than the previous year and an all-time high. The increase in the median wage from 2006, at 1.5 percent, was lower than the increase for the average hourly wage.
- The median wage increased by 18 percent from 1990 to 2007, considerably less than the average wage (30 percent) over that same period.
- The average hourly wage was 23 percent above the median in 1990, before rising to 42 percent in 2000, and has been close to 35 percent higher over the past six years, including 2007 when there was a 36 percent difference.

Wage Distribution

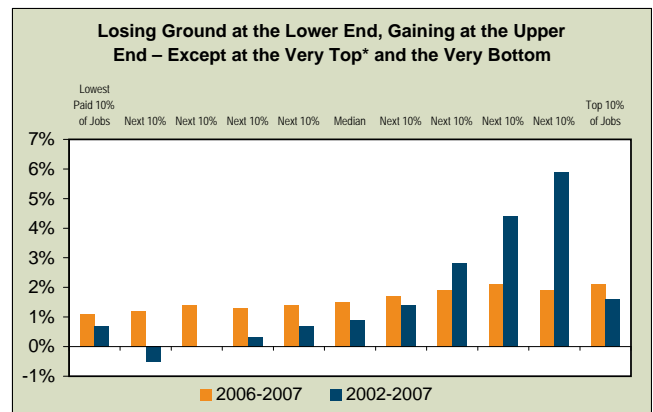
In 2007, the lowest-paid 10 percent of jobs averaged \$8.39 per hour (Figure 55 and 56) – nine cents (1.1 percent) above the previous year and a penny above the previous peak in 2003 after adjustment for inflation. The best-paid 10 percent of jobs averaged \$80.92 per hour, \$1.71 per hour higher than in the previous year, a 2.1 percent increase, but \$16.92 below the 1999 peak of \$97.84 per hour. The decline of stock options in the intervening years, and the elimination of stock options from the reporting system after 2004 had an impact on the upper end, both in real terms (less paid out in stock options) and purely due to a definitional change (stock options no longer included).

Figure 55
Average Hourly Wage, by Decile (10 percent) of FTE Jobs Washington State, 2007
Source: LMEA/Employment Security Department



For the other deciles, the percentage gain in the average wage trended higher as wages increased. The next-to-bottom decile increased by 1.2 percent, the median by 1.5 percent, and the next-to-top by 1.9 percent. In other words, wage disparity increased once again in 2007.

Figure 56
Increase in Average Hourly Wage, by Decile (10 percent) of FTE Jobs Washington State, 2006 to 2007 and 2002 to 2007
Source: LMEA/Employment Security Department



*Due in large part to the removal of stock options from the database

The disparity in wages widened from 1990 (the first year data are available) through 2000, but has narrowed since then.

Figure 57
Measuring the Wage Gap Washington State, 1990 to 2007, in 2007 Constant Dollars
Source: LMEA/Employment Security Department

Average Wage For...	All Counties		All except King	
	1990	2007	1990	2007
Lowest-Paid 10 Percent of Jobs	\$6.99	\$8.39	\$6.73	\$8.19
Median Job	\$16.48	\$19.42	\$15.08	\$17.31
Highest-Paid 10 Percent of Jobs	\$53.09	\$80.92	\$45.48	\$60.92
Highest 10/Lowest 10 Ratio	7.6	9.6	6.8	7.4
Highest 10/Median Ratio	3.2	4.2	3	3.5
Median/Lowest 10 Ratio	2.4	2.3	2.2	2.1

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 2000, that ratio had grown to 12.4, before narrowing in the next five years to 9.3. In 2006 it increased a bit to 9.5: the gap was 26 percent larger than in 1990. The distance between the median wage and the top

⁴ Jobs in this case are calculated on an FTE basis, with 2,080 hours per year equal to one full-time job.

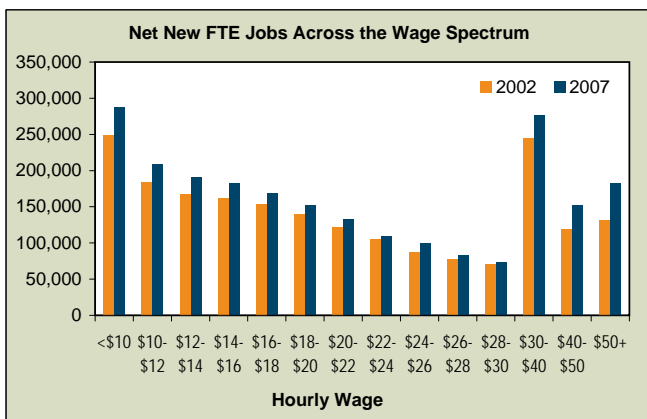
10 percent similarly expanded and contracted, and is now at 4.1, a 28 percent increase. However, the bottom 10 percent is slightly closer to the median, stretching from 2.4 to 2.5 before closing to 2.3, due to the increase and indexing of the minimum wage in recent years (Figure 55). If King County is 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.

Returning to the question of the quality of the recent recovery – the data for deciles add some complexity to the picture by showing the uneven character of the labor market and a near-linear relationship between deciles and loss or gain in the 2002 to 2007 period – if the results for the top decile are adjusted to compensate for stock options. Only the minimum wage, by shoring up the bottom decile, spoils the linearity.

Wages by Wage Range

Another way to slice and dice the wage data is to look at the number of jobs within a range of hourly wages. In 2007, over 287,000 jobs – thirteen percent of the total – paid below \$10.00 per hour. Another 209,000 jobs (9 percent) paid between \$10.00 and \$11.99 per hour. Figure 58 shows the full distribution of jobs for 2002 and 2007, with the last three ranges having a wider span (\$30.00 to \$39.99, \$40.00 to \$49.99, \$50+).

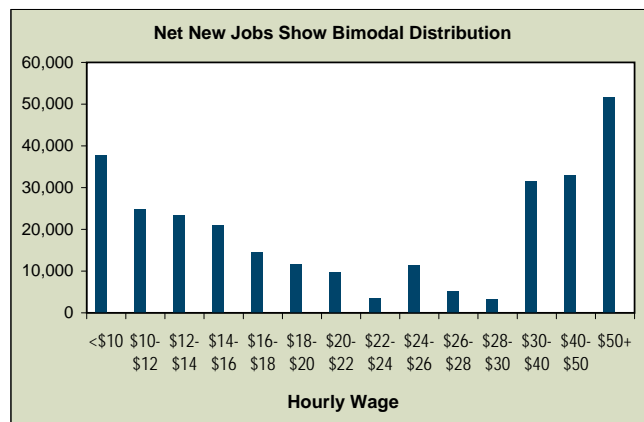
Figure 58
FTE Jobs by Hourly Wage
Washington State, 2002 and 2007
Source: LMEA/Employment Security Department



The number of jobs increased in most wage ranges, but the change was smaller in the middle. As Figure 59 shows, the change in jobs had a distinctly bimodal distribution,

with more new jobs at the low end and at the high end of the spectrum, and fewer in the middle. The number of jobs paying below \$10 per hour grew by 15 percent, while the number of jobs paying \$50 or more per hour grew by 39 percent. Meanwhile, jobs in the middle of the spectrum (around \$20 per hour) grew by 8 percent.

Figure 59
Change in FTE Jobs by Hourly Wage
Washington State, 2002 to 2007
Source: LMEA/Employment Security Department



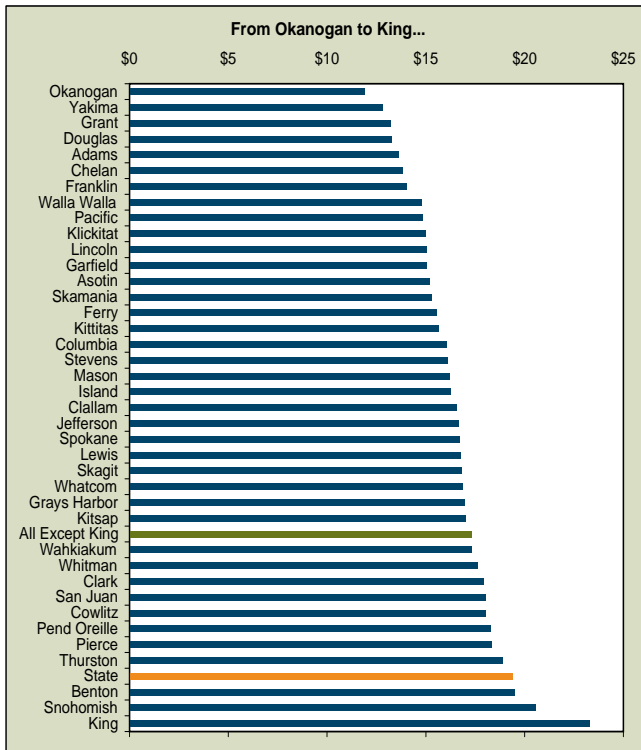
From the vantage point of what jobs pay, then, we can say that 2007 marked the recovery from the 2001 to 2002 recession – just in time for the 2008 recession. There has been job growth across the wage spectrum, with a bimodal distribution. Growth has been more robust at the upper end, however.

Wages by Area

Hourly wages vary widely across the state. In 2007, King County once again topped the state with a median wage of \$23.30. And once again, only two other counties – Snohomish and Benton – topped the state median. Excluding King, the rest of the state had a median hourly wage of \$17.31. Okanogan had by far the lowest median, at \$11.89. Out of the eighteen lowest-wage counties, seventeen were located east of the Cascades.

Median wages rose in 2007 in all but five of Washington's thirty-nine counties. For the second year in a row, Columbia County had by far the largest increase (+\$0.85). In 2006 the decline was due to the closure of a processor with a large number of below-median jobs; in 2007, on a happier note, an increase in construction jobs associated with a wind farm pushed the median upward.

Figure 60
 Median Hourly Wage by County
 Washington State, 2007
 Source: LMEA/Employment Security Department



Since 1990, the state median hourly wage has increased by 18 percent after adjustment for inflation. A handful of smaller counties had large increases, led by Columbia County's 59 percent jump. Among the larger counties, King County's median has increased by 27 percent. Two counties had a lower median in 2007: Ferry County (-4 percent) and Klickitat County (-5 percent).

From 2002 to 2007, twelve counties (a mix of metro areas, micropolitans, and rural) had job growth and a higher median, five (all rural) had job loss and a higher median, three had job growth and no change in the median, and nineteen (again a mix) had job growth and a lower median.

Wages for Full-Time Workers

The preceding sections looked at jobs; this section looks at individual workers. Of the 3.4 million individuals who were employed in the state at some point in 2007, 30 percent worked at least 2,000 hours, the equivalent of working full time for 50 weeks. Half worked at least

1,560 hours – the equivalent of working full time for nine months of the year. More than a fifth worked fewer than 520 hours (one full quarter).

For the purposes of this report, we'll consider anyone who worked 1,560 hours or more in a year as a *full-time* worker. If we compare 2002 and 2007, we find that 21 percent of the full-time workers in 2007 were not in the 2002 database. Similarly, 19 percent of the full-time workers from 2002 were not employed in Washington in 2007. About a million workers were full time in both years. The median change in hourly wages for these workers was \$2.20 per hour. Seventy percent of them had higher wages in 2007, while 27 percent suffered a decline in hourly pay.

How do these figures stack up? In order to add some context, these two statistics were calculated for each five-year time-span starting in 1990. Did workers employed full time in both 1990 and 1995 have a higher or lower median increase in hourly wages? Did more workers experience a drop in hourly wages from 1993 to 1998?

Figure 61
 Median Increase in Hourly Wage for Full-Time Workers
 Over Five-Year Spans
 Washington State, 1990 to 2007
 Source: LMEA/Employment Security Department



Figure 61 shows that this was the lowest median increase for the study period. As Figure 62 shows, the results differ somewhat depending upon the worker's hourly wage in the base year. The wage ladder decreased for all wage groups after 1997 to 2002. But a comparison of 1990 to 1995 with 2002 to 2007 shows that the median wage increase declined for workers earning below \$24 per hour, and increased for those earning above \$24 per hour.

Similarly, the percent of full-time workers with lower hourly wages was higher in the 2002 to 2007 period than any preceding span. In 1990 to 1995, 23 percent suffered a decline in wages; the percentage dropped to 16 percent in 1997 to 2002, before increasing steadily every period since then, topping 27 percent in 2002 to 2007.

Finally, we can look at wage progression for low-wage workers from the framework of welfare reform, and its guiding principle of getting welfare recipients into the labor force, so that they can attain self-sufficiency. Workfirst Program clients that find a job usually start at less than \$9 per hour. There were almost 22,000 individuals working full time in both 2002 and 2007 who earned below \$9 per hour in 2002. Five years later, 28 percent of these individuals were still earning below \$9 per hour. More than half were earning below \$10.10 per hour. Two thirds were earning less than \$11.70 per hour. Only 15 percent were earning above \$15.00 per hour.

Figure 62
Median Increase in Hourly Wages Over a Five-Year Span, By Wage Range in Base Year
Washington State, 1990 to 2007
Source: LMEA/Employment Security Department



In summary, we can say that the recovery brought lots of new jobs, which were bimodally distributed: lots of jobs on the lower end of the wage scale, lots on the upper end, with a slight tilt toward the lower end. Different counties fared differently, some seeing a rise in median wages, others a decline. Compared with past years, the wage ladder was shorter in the 2002 to 2007 period, and more full-time workers suffered a decline in hourly wages. Finally, prospects for low-wage workers gaining a self-sufficient wage through wage progression are as bleak as ever.

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) Earned income, including:
 - a. wages and salaries,
 - b. proprietors' income, and
 - c. employer payments for employee insurance ("other labor income");
- 2) investment income; and
- 3) government transfer payments.

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.

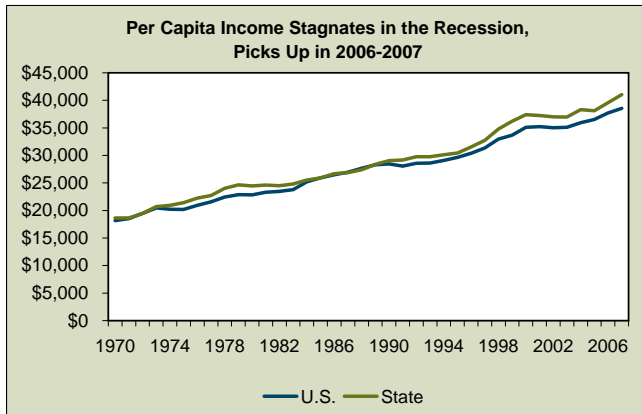
The most commonly used datum from personal income is *per capita income*, which equals total personal income divided by population. The advantages of using per capita income as an economic measure include its broad definition (more than wages) and its comparability across all geographic areas. The main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

After growing rapidly during the 1990s, inflation-adjusted per capita personal income peaked in Washington in 2000 at \$36,438 (in 2006 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 3.6 percent. If the dividend is factored out, per capita income increased in both years, and recovered to pre-recession levels in 2005. In 2006 per capita income grew by a substantial 3.9 percent,

and 2007 was almost as good at 3.7 percent. While all components of personal income rose in both years, investment income jumped by over 7 percent in each year.

Figure 63
Inflation-Adjusted Per Capita Income
United States and Washington State, 1970 to 2007
Source: U.S. Bureau of Economic Analysis



As noted in the sidebar, 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.

- Beginning in 2001, however, per capita earnings decreased for three consecutive years, followed by two years of weak recovery. Gains were stronger in 2006 to 2007, but overall, earnings grew much slower in 2000 to 2007 than in 1995 to 2000.
- Per capita investment income followed a similar but more volatile pattern, with a steeper decline during the recession, but a stronger recovery.
- Transfer payments played a countercyclical role, expanding sharply in 2001 and declining slightly in 2004, as unemployment insurance payments ratcheted up and down. The overall increase during the 2000 to 2007 period was driven primarily by Medicare and Medicaid, and secondarily by social security and food stamp payments. Three types of transfer payments that have not increased since 1995 are welfare – which on a per capita basis has been cut by more than half over the past decade, despite an increase in the poverty rate – food stamps, and unemployment insurance.

Figure 64
Selected Per Capita Transfer Payments
Adjusted for Inflation
Washington State, 1995 to 2007
Source: U.S. Bureau of Economic Analysis

Type of Payment	1995	2000	2007	Average Annual Growth		
				1995-2000	2000-2007	1995-2007
Earnings	\$20,603	\$26,077	\$27,895	4.80%	1.00%	2.60%
Investment	\$5,740	\$6,871	\$7,954	3.70%	2.10%	2.80%
Total Transfer Payments	\$4,094	\$4,441	\$5,213	1.60%	2.30%	2.00%
Retirement and Disability	\$1,748	\$1,867	\$2,151	1.30%	2.00%	1.70%
Medical Benefits	\$1,341	\$1,524	\$2,029	2.60%	4.20%	3.50%
Income Support	\$419	\$363	\$435	-2.80%	2.60%	0.30%
Family Support (Welfare)	\$144	\$72	\$62	-13.00%	-2.10%	-6.80%
Food Stamps	\$99	\$49	\$95	-13.20%	10.00%	-0.30%
Unemployment Insurance	\$218	\$190	\$120	-2.70%	-6.40%	-4.90%
Veterans' Benefits	\$125	\$148	\$190	3.60%	3.60%	3.60%

Regions and Counties, 2006

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

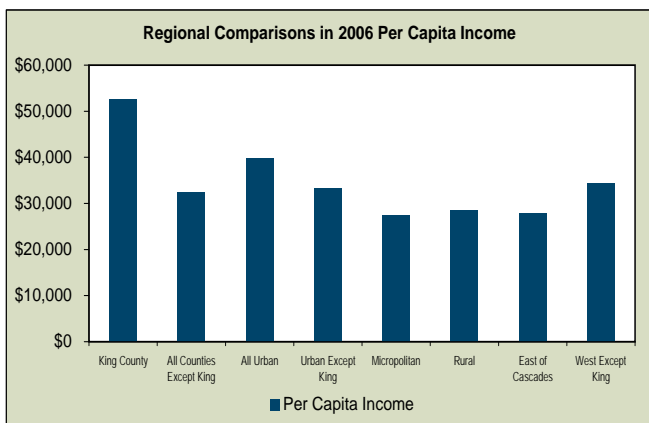
Twenty-three counties reached their all-time high for per capita income in 2006, led by King County, which again had the highest income in the state at \$52,655. Ferry County had the lowest per capita income in the state at \$20,737.

A number of groupings of counties peaked in per capita income in 2006: rural counties (\$28,598), metropolitan areas (\$31,759 – excluding metropolitan divisions – King, Snohomish, Pierce), counties east of the Cascades (\$27,850), and counties west of the Cascades (\$34,396 – excluding King), and micropolitan counties (\$27,421).



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

Figure 65
Per Capita Income for Selected Sub-State Areas
Washington State, 2006
Source: U.S. Bureau of Economic Analysis



Cross-county commuting: In Skamania County, 67 percent of earned income came from residents working in a different county. Douglas and Asotin also had a majority of earnings come from jobs outside the county. On the other hand, 40 percent of wage-related income in Franklin County went to residents of other counties. On a net basis, Skamania had the biggest inflow of earnings (60 percent) and King County had the biggest outflow (19 percent).

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 \$55,591 in 2007, almost \$2,000 more than in the 2002 to 2005 period.⁵ Washington still exceeded the national average by \$4,000 or nine percent. Median family income,

⁵ Comparing income data from the 2000 Census with the annual American Community Survey (ACS) should be done "with caution," according to the Census Bureau. The 2000 Census asked about income from the calendar year 1999, while the ACS collects data throughout the year, asking respondents about their income in the past 12 months. They then correct data for inflation, and combine them to produce an annual average. A test comparison showed the Census figure to be 4.6 percent higher than the ACS.

at \$63,705, also jumped by \$2,000 in 2006. Non-family households – most of which are comprised of one person living alone – had a smaller increase, climbing to \$33,602. The poverty rate was estimated at 11.8 percent in 2006, almost identical with 2005 and higher than the Census rate of 10.6 percent.⁶

Income and Housing Costs

Housing is a major expense for most households, and it's no secret that housing costs have been rising significantly for the past 15 years or so. As a rule of thumb, if housing costs exceed 30 percent of household income, then a household can be considered under economic distress. One way to gauge the impact of rising housing costs, then, is to use the 30 percent measure as a barometer.⁷

According to the 1990 Census, 39 percent of renters paid 30 percent or more of their income in housing costs. That figure was slightly higher at 42 percent in the next Census. However, by 2002, 49 percent of renters were in distress. The number crested at 51 percent in 2004 before declining to 47 percent in 2006 – still more than 380,000 households. A similar trend occurred nationally.

When it comes to home owners, 20 percent of home owners with a mortgage met the distressed criterion in the 1990 Census. By 2000, the percentage had jumped to 31 percent, and has climbed steadily since then, reaching 40 percent in 2006 – almost 475,000 households. All told more than 900,000 households – 38 percent – were paying 30 percent or more of their income in housing costs.

⁶ The poverty rates quoted here are from the American Community Survey (ACS), which collects data from 3,000 households throughout the year. The ACS asks about income in the prior 12 months. A separate Census Bureau survey, the Annual Social and Economic Supplement (ASEC) to the Current Population Survey, also produces an estimate of the poverty rate. This survey takes place early in the year, and asks about income in the previous calendar year. About 100,000 households are in the sample. According to the Census Bureau website, "Because of its large sample size, the ACS methodology holds the most promise of providing timely subnational data on income and poverty." The 2006 ASEC reported a very low poverty rate for Washington – 8.0 percent, a sharp drop from 2005 and lower than the reported rates for the late 1990s.

⁷ Housing costs for home owners include mortgages, real estate taxes, various insurances, utilities, fuels, mobile home costs, and condominium fees. For renters, they include rent, utilities, and heating fuel costs.

What do we Mean by a Job?

Everybody knows what a job is, right? Well, yes, sort of. In fact, we tend to use the term quite loosely, and it can take on different meanings in different contexts.

Let's start with a fairly straightforward definition: a job is a relationship between a particular employer and a particular employee. At any point in time, we can tally the number of jobs within an industry or a geographic area.

Things get a little complicated when we compare jobs over time. When we say that the number of aerospace jobs went up this year, we're really talking about the net number of jobs in the industry. Some aerospace jobs that existed a year ago don't exist today, due to turnover. Some aerospace firms have expanded, others have contracted, some may have closed, others may be brand new, and some may have restructured – they may have the same number of employees, but the occupational and wage distribution may be substantially different.

So when we're talking about industry employment over time, we're using a different definition of jobs, where the actual individuals and the actual employers don't factor in.



At any point in time, we can tally the number of jobs within an industry or a geographic area.



A job is a relationship between a particular employer and a particular employee.

Full-time equivalent (FTE) jobs involve another definition. Instead of a count of individual employees, they are a count of hours worked, with 1 FTE job defined as 2,080 hours worked in a year's time. The concept of an individual worker is even more abstracted here, because 1 FTE job may be an amalgamation of a number of different individuals. The advantage of using FTE employment is that it adjusts for turnover and part-time jobs.

A potential pitfall comes into play when we compare two different time periods and start drawing conclusions based on an analysis of net new jobs. If the economy grows from 2 million jobs to 2.2 million, it is tempting to focus on the net new 0.2 million jobs and assume that the 2.0 million jobs are unchanged; we might even harbor the assumption that it's the same two million individuals working at the same jobs at the same employer. In fact, many of those 2.0 million jobs are different – different individuals, at different employers, with different job titles and responsibilities, with different work schedules (e.g., part time vs. full time) and with different wages – even if, by industry, the job count hasn't changed.

Data Comparisons with Other States

Where does Washington rank relative to other states in the nation? This chapter presents figures that show how Washington ranks relative to other states in terms of:

- Minimum Wage (Dollars)
- Unemployment Rate (Percent)
- Nonfarm Employment – Average Annual Job Growth and Share of U.S. Total
- Real GDP – Average Annual Growth
- Real GDP/Job – Annual Average Growth
- Per Capita Personal Income (Dollars)
- Exports (Dollars)
- New Privately Owned Building Permits Average Growth
- Existing House Sales (Level)
- Median House Prices (Dollars)
- Population (Level and Share of U.S.)
- High School (Percent of Persons 25 Years and Older)
- College (Percent of Persons 25 years and Older)

Figure 66

21 Highest Minimum Wage States
United States and Washington State, July 2008
Source: U.S. Department of Labor

Rank	State	Minimum Wage (as of July 24, 2008)
1	Washington	\$8.07
2	California	\$8.00
2	Massachusetts	\$8.00
4	Oregon	\$7.95
5	Illinois	\$7.75
6	Vermont	\$7.68
7	Connecticut	\$7.65
8	District of Columbia	\$7.55
9	Rhode Island	\$7.40
9	Michigan	\$7.40
11	Hawaii	\$7.25
11	Iowa	\$7.25
11	West Virginia	\$7.25
14	Alaska	\$7.15
14	New Jersey	\$7.15
14	New York	\$7.15
14	Pennsylvania	\$7.15
14	Delaware	\$7.15
19	Colorado	\$7.02
20	Maine	\$7.00
20	Ohio	\$7.00

Figure 67

Ten Highest/Lowest Unemployment Rates
United States, 2007
Source: U.S. Bureau of Labor Statistics

Rank	State	Unemployment Rate
	U.S.	4.6%
1	Hawaii	2.6%
2	Idaho	2.7%
2	Utah	2.7%
4	Nebraska	3.0%
4	South Dakota	3.0%
4	Virginia	3.0%
4	Wyoming	3.0%
8	Montana	3.1%
9	North Dakota	3.2%
10	Delaware	3.4%
27	Washington	4.5%
42	Oregon	5.2%
43	Arkansas	5.4%
43	California	5.4%
45	Kentucky	5.5%
46	Ohio	5.6%
47	District of Columbia	5.7%
48	South Carolina	5.9%
49	Alaska	6.2%
50	Mississippi	6.3%
51	Michigan	7.2%

Figure 68

Ten Highest/Lowest States: Nonfarm Employment
Average Annual Job Growth
United States, 1997 to 2007
Source: U.S. Bureau of Labor Statistics, Haver Analytics

Rank	State	Growth Rate	Share of U.S. in 2007
	U.S.	1.1%	
1	Nevada	3.8%	0.9%
2	Arizona	3.0%	1.9%
3	Idaho	2.6%	0.5%
4	Wyoming	2.5%	0.2%
5	Utah	2.3%	0.9%
6	Florida	2.3%	5.9%
7	Montana	1.9%	0.3%
8	Texas	1.9%	7.5%
9	New Mexico	1.8%	0.6%
10	Alaska	1.7%	0.2%
13	Washington	1.5%	2.1%
42	West Virginia	0.7%	0.6%
43	Mississippi	0.6%	2.0%
44	Connecticut	0.5%	1.2%
45	Massachusetts	0.5%	2.4%
46	Indiana	0.4%	2.2%
47	Missouri	0.4%	0.8%
48	Louisiana	0.4%	1.4%
49	Illinois	0.4%	4.4%
50	Ohio	0.1%	3.9%
51	Michigan	-0.4%	3.1%

Figure 69
 Ten Highest/Lowest States: Real GDP Average Annual Growth
 United States, 1997 to 2007
 Source: Bureau of Economic Analysis

Rank	State	Growth Rate
	U.S.	2.9%
1	Arizona	5.3%
2	Nevada	4.8%
3	Idaho	4.5%
4	Oregon	4.2%
5	California	4.0%
6	Florida	3.9%
7	Utah	3.7%
8	Texas	3.7%
9	Colorado	3.7%
10	Virginia	3.6%
14	Washington	3.3%
42	Maine	1.8%
43	Indiana	1.6%
44	Louisiana	1.6%
45	Mississippi	1.5%
46	Kentucky	1.4%
47	Missouri	1.3%
48	Ohio	1.1%
49	West Virginia	1.1%
50	Alaska	0.9%
51	Michigan	0.4%

Figure 70
 Ten Highest/Lowest States: Real GDP/Job* Average Annual Growth
 United States, 1997 to 2007
 Source: Bureau of Economic Analysis

Rank	State	Per Job GDP Growth
	U.S.	1.4%
1	Oregon	2.6%
2	New York	2.3%
3	California	2.2%
4	Massachusetts	2.1%
5	South Dakota	2.0%
6	Vermont	1.9%
7	District of Columbia	1.8%
8	Arizona	1.8%
9	North Carolina	1.7%
10	Colorado	1.7%
13	Washington	1.5%
42	Nevada	0.6%
43	Maine	0.5%
44	Mississippi	0.5%
45	Hawaii	0.4%
46	Wyoming	0.4%
47	Kentucky	0.4%
48	West Virginia	0.4%
49	Missouri	0.4%
50	Michigan	0.3%
51	Alaska	-0.8%

*GDP/Job – Indicator of labor productivity

Figure 71
 Ten Highest/Lowest Per Capita Personal Income
 United States, 2007
 Source: Bureau of Economic Analysis

Rank	State	Per Capita Income
	U.S.	\$38,564
1	District of Columbia	\$61,397
2	Connecticut	\$54,984
2	New Jersey	\$49,238
4	Massachusetts	\$49,142
4	Wyoming	\$47,038
4	New York	\$46,664
4	Maryland	\$46,646
8	California	\$41,580
9	Virginia	\$41,561
10	New Hampshire	\$41,444
11	Washington	\$41,062
42	Arizona	\$32,900
43	Alabama	\$32,401
43	Idaho	\$31,703
45	South Carolina	\$31,048
46	Kentucky	\$30,787
47	New Mexico	\$30,604
48	Arkansas	\$30,100
49	Utah	\$30,090
50	West Virginia	\$29,293
51	Mississippi	\$28,527

Figure 72
 Top/Bottom Ten States: Exports
 United States, 2007
 Source: WISER, Haver Analytics

Rank	State	State Exports (in Thousands)
1	Texas	\$168,099,640
2	California	\$134,151,754
3	New York	\$69,333,648
4	Washington	\$66,258,477
5	Illinois	\$48,730,154
6	Florida	\$44,831,679
7	Michigan	\$44,371,421
8	Ohio	\$42,381,589
9	New Jersey	\$30,462,499
10	Louisiana	\$30,374,691
42	New Hampshire	\$2,910,360
43	Maine	\$2,742,372
44	New Mexico	\$2,583,285
45	North Dakota	\$2,033,154
46	South Carolina	\$1,646,580
47	Tennessee	\$1,506,424
48	Montana	\$1,131,169
49	District of Columbia	\$1,082,952
50	Wyoming	\$801,815
51	Hawaii	\$560,424

Figure 73

Ten Highest/Lowest States: New Privately Owned Building Permits, Average Annual Growth United States, 1997 to 2007
 Source: U.S. Bureau of the Census, Haver Analytics

Rank	State	Growth Rate
	U.S.	-0.3%
1	District of Columbia	62.4%
2	Wyoming	10.6%
3	Hawaii	6.6%
4	Montana	5.3%
5	Missouri	5.3%
6	New York	5.1%
7	South Dakota	4.9%
8	Louisiana	4.4%
9	Alabama	3.8%
10	Texas	3.5%
17	Washington	1.4%
42	Florida	-2.6%
43	Rhode Island	-3.2%
44	Minnesota	-3.2%
45	Maryland	-3.3%
46	Colorado	-3.7%
47	West Virginia	-3.7%
48	Indiana	-3.8%
49	Alaska	-4.0%
50	Ohio	-5.3%
51	Michigan	-9.7%

Figure 74

Existing House Sales United States, 2007
 Source: National Association of Realtors

Rank	State	Sales (in Thousands)	Annual Percent Change
1	Texas	557.8	-3.59%
2	California	355.0	-22.81%
3	New York	295.9	-2.47%
4	Florida	286.4	-27.55%
5	Ohio	250.8	-8.93%
6	Illinois	239.7	-17.06%
7	North Carolina	214.0	-8.86%
8	Pennsylvania	214.0	-8.70%
9	Georgia	209.9	-15.64%
10	Michigan	172.4	-5.48%
14	Washington	133.5	-13.42%
41	Alaska	26.4	-14.01%
41	Maine	25.5	-16.94%
43	Montana	24.1	-10.07%
44	South Dakota	18.5	1.09%
45	Rhode Island	16.4	-5.75%
46	Delaware	15.7	-11.80%
47	North Dakota	14.4	2.13%
48	Vermont	14.4	-4.00%
49	Wyoming	12.9	-5.15%
50	District of Columbia	9.6	-4.95%

Figure 75

Median House Prices, Single-family, in Thousands Washington State, Other State Metro. Areas, 2007
 Source: National Association of Realtors

Rank	Metropolitan Area	2007
1	San Jose-Sunnyvale-Santa Clara, CA	\$836.8
2	San Francisco-Oakland-Fremont, CA	\$805.4
3	Anaheim-Santa Ana, CA (Orange Co.)	\$699.6
4	Honolulu, HI	\$643.5
5	Los Angeles-Long Beach-Santa Ana, CA	\$589.2
14	Seattle-Tacoma-Bellevue, WA	\$386.9
25	Portland-Vancouver-Beaverton, OR-WA	\$295.2
64	Spokane, WA	\$193.8
74	Kennewick-Richland-Pasco, WA	\$169.2
80	Yakima, WA	\$156.5
149	South Bend-Mishawaka, IN	\$90.7
150	Decatur, IL	\$83.1
151	Saginaw-Saginaw Township North, MI	\$82.1
152	Elmira, NY	\$81.6
153	Youngstown-Warren-Boardman, OH-PA	\$78.9

Figure 76

Ten Most/Least Populated States United States, 2007
 Source: U.S. Bureau of the Census, Haver Analytics

Rank	State	Population (in Thousands)	Share of U.S.
1	California	36,553	12.1%
2	Texas	23,904	7.9%
3	New York	19,298	6.4%
4	Florida	18,251	6.1%
5	Illinois	12,853	4.3%
6	Pennsylvania	12,433	4.1%
7	Ohio	11,467	3.8%
8	Michigan	10,072	3.3%
9	Georgia	9,545	3.2%
10	North Carolina	9,061	3.0%
13	Washington	6,468	2.1%
42	Hawaii	1,283	0.4%
43	Rhode Island	1,058	0.4%
44	Montana	958	0.3%
45	Delaware	865	0.3%
46	South Dakota	796	0.3%
47	Alaska	683	0.2%
48	North Dakota	640	0.2%
49	Virginia	621	0.2%
50	District of Columbia	588	0.2%
51	Wyoming	523	0.2%

Figure 77
 High School Completion (Includes Equivalency)
 United States, 2007
 Source: U.S. Bureau of the Census

Rank	State	Percent (25 Years and Older)
1	Wyoming	91.2
2	Minnesota	91.0
3	Alaska	90.5
3	New Hampshire	90.5
5	Vermont	90.3
6	Utah	90.2
7	Montana	90.0
8	Iowa	89.6
8	Nebraska	89.6
10	Hawaii	89.4
10	Maine	89.4
12	Washington	89.3
	United States	84.5
42	South Carolina	82.1
43	Tennessee	81.4
44	West Virginia	81.2
45	Arkansas	81.1
46	Alabama	80.4
47	California	80.2
48	Kentucky	80.1
49	Louisiana	79.9
50	Texas	79.1
51	Mississippi	78.5



High School (Percent of persons 25 years and older with High School diploma or equivalency).

Figure 78
 Completed a Bachelor's Degree
 United States, 2007
 Source: U.S. Bureau of the Census

Rank	State	Percent (25 Years and Older)
2	Massachusetts	37.9
3	Maryland	35.2
4	Colorado	35.0
5	Connecticut	34.7
6	New Jersey	33.9
7	Vermont	33.6
7	Virginia	33.6
9	New Hampshire	32.5
10	New York	31.7
12	Washington	30.3
	United States	27.5
42	Oklahoma	22.8
43	Indiana	22.1
44	Nevada	21.8
44	Tennessee	21.8
46	Alabama	21.4
47	Louisiana	20.4
48	Kentucky	20.0
49	Arkansas	19.3
50	Mississippi	18.9
51	West Virginia	17.3



College Education (Percent of persons 25 years and older who have completed a bachelor's degree).

About the Economic and Policy Analysis Unit

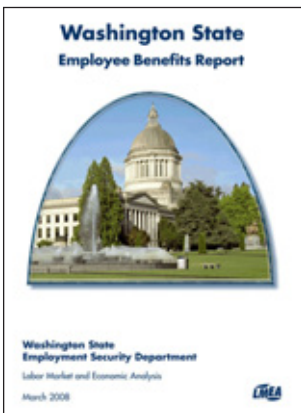
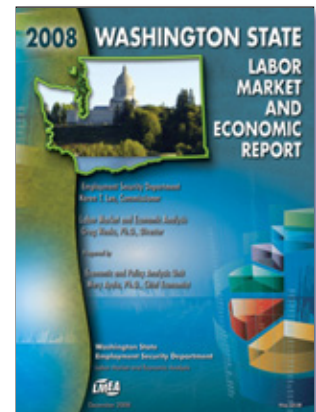
The Economic and Policy Analysis unit within the Labor Market and Economic Analysis (LMEA) branch of the Employment Security Department has primary responsibility for providing occupational information analysis and commentary on Washington's current labor market situation. Toward that end, it is the 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 Survey Report, Employee Benefits Report, County Profiles, Agricultural Workforce in Washington State, and many others. 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.

LMEA Publications



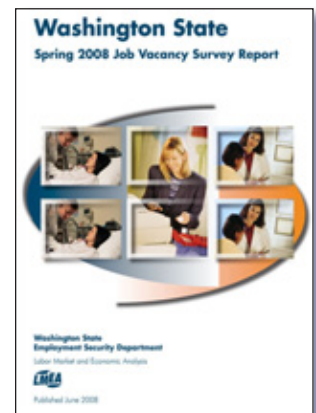
- ◆ Washington Labor Market Quarterly Review - A quarterly report that covers labor market issues affecting state employers and policymakers.

- ◆ Washington State Labor Market and Economic Report - An annual report that includes the national and state year in review, seasonality in employment time series, unemployment and its dimensions, Washington's aging workforce, employment projections, wages and income, and data comparisons with other states.



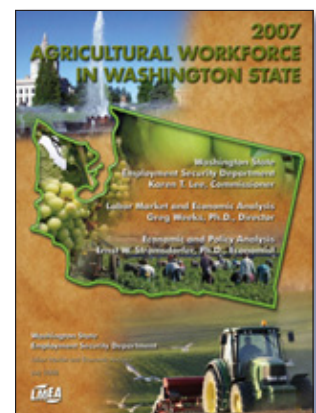
- ◆ Washington State Employee Benefits Report - An overview of health insurance, retirement plans, and paid leave for workers and their dependents. Information is displayed by industry, region, and size of business.

- ◆ Washington State Job Vacancy Survey 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.

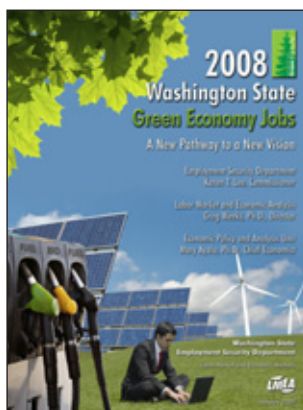


- ◆ Washington State Employment Situation Report - A monthly tool giving you an up-to-date report on the state of the state economy as reflected in our labor market data. Employment by industry and labor force data at the state and substate level are displayed.

- ◆ 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.



LMEA Publications



◆ **Green Jobs Survey Report** - This report will show the number of jobs that directly support environmental protection and clean energy goals. Firms that produce any goods or provide services that support four core areas: increasing energy efficiency, producing renewable energy, preventing and reducing environmental pollution, and/or provides mitigation or clean-up of environmental pollution, will be surveyed. This report will be published and available in 2009.

◆ **Washington State Business Employment Dynamics** - A new set of data available in seasonally and non-seasonally adjusted form that can highlight the forces behind the dynamics of labor markets at the state level. In addition, users can compare a given state's performance against other states.



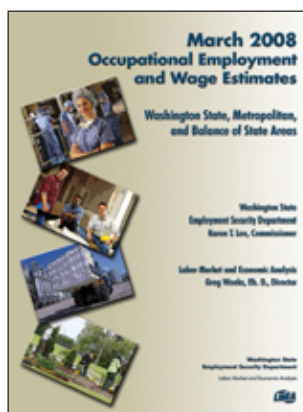
◆ **Pacific County Profile** - One of 32 online reports profiling individual or groups of counties. Each report deals with the economic health of a specific area – including employment trends, demographics, wages, and changes in labor force and population.



◆ **Quarterly Census of Employment and Wages** - Measures covered employment and wages by industry and by county. We focus on the wage portion of this report and cover information on the total number of firms in the state, total wages paid for the quarter, and average employment.



◆ **Occupational Employment and Wage Estimates** - Data which are presented by area for statewide, metropolitan statistical areas, and four balance of state areas.



◆ **Agricultural Labor Employment and Wages** - A monthly report that covers total and seasonal agricultural employment, statewide and regional employment and wage trends, crop area harvest periods, weather conditions by area, and factors affecting farm labor supply and demand. Provides the methodology behind the Farm Labor Survey data.



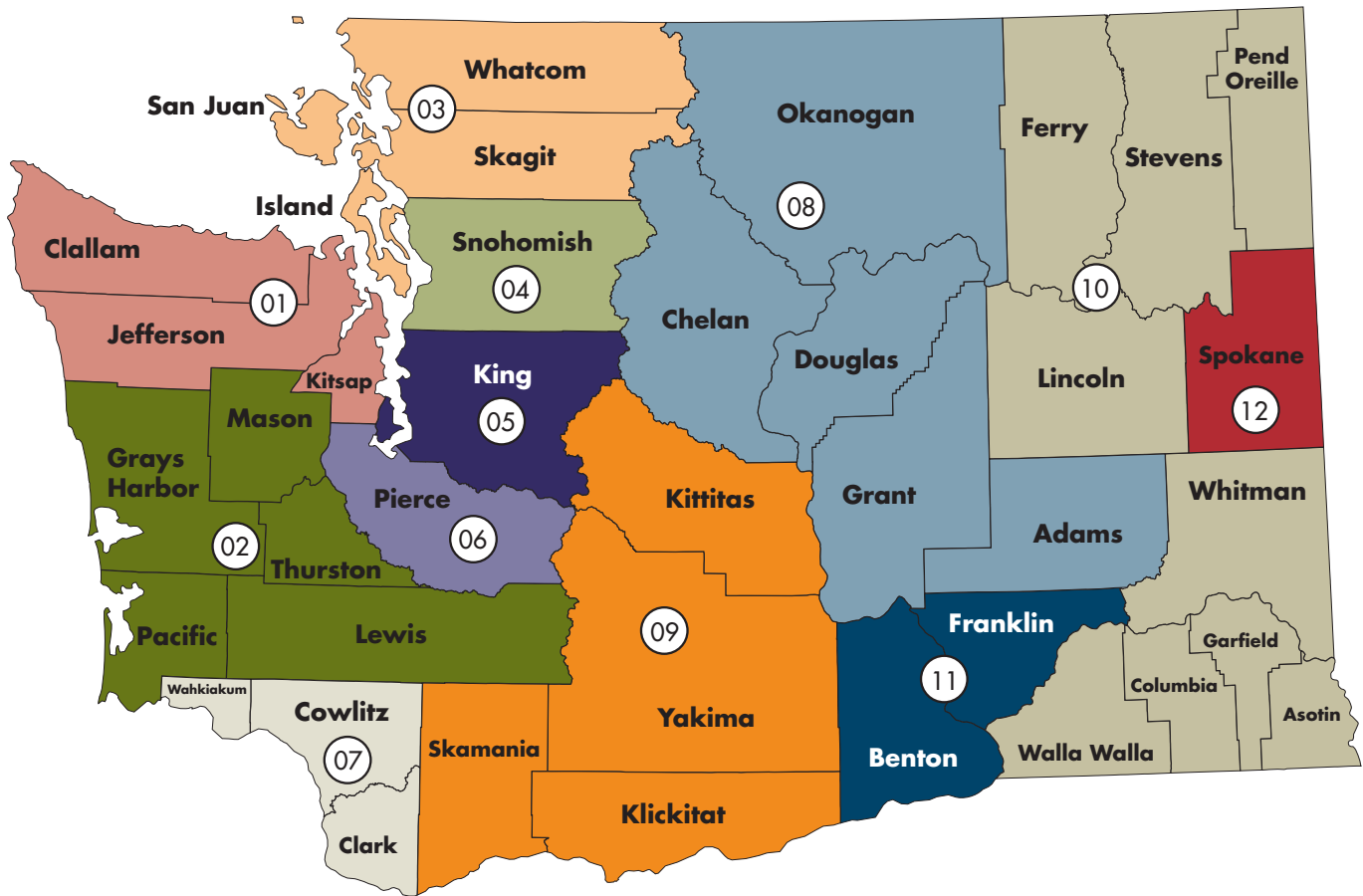
Washington State Employment Security Department

Labor Market and Economic Analysis



Workforce EXPLORER
www.workforceexplorer.com

Washington State Workforce Development Areas



- WDA 1 – Olympic Consortium
- WDA 2 – Pacific Mountain
- WDA 3 – Northwest Washington
- WDA 4 – Snohomish County
- WDA 5 – Seattle-King County
- WDA 6 – Pierce County
- WDA 7 – Southwest Washington
- WDA 8 – North Central Washington/Columbia Basin
- WDA 9 – South Central
- WDA 10 – Eastern Washington
- WDA 11 – Benton-Franklin
- WDA 12 – Spokane County