2015 LABOR MARKET AND ECONOMIC REPORT

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Washington's economy
Seasonal employment
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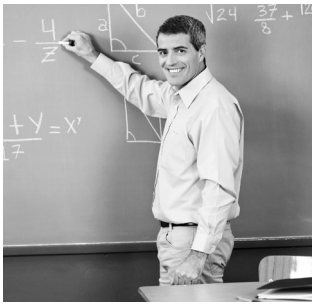
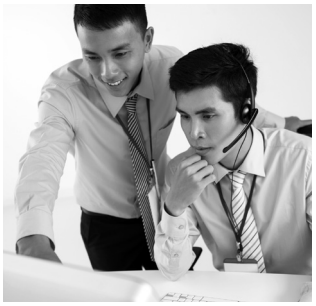
Income and wages
Economic comparisons

Employment Security Department
WASHINGTON STATE

Labor Market and Performance Analysis
May 2016





2015 Labor Market and Economic Report

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Further analysis and detailed statistics are available from the Employment Security Department upon request.
To get this report in an alternative format, call the Labor Market and Performance Analysis Division at 360-407-4541.

Contents

Labor market fast facts

Fast facts 1. Labor force and unemployment, not seasonally adjusted[1]
Washington state, annual data of selected years for the period from 1980 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics

Year	Labor Force	Employed	Unemployed	Unemployment rate
1980	1,972,373	1,815,717	156,656	7.9%
1985	2,102,321	1,926,816	175,505	8.3%
1990	2,537,040	2,406,440	130,590	5.1%
1995	2,812,610	2,636,010	176,600	6.3%
2000	3,050,020	2,898,680	151,340	5.0%
2005	3,255,530	3,075,970	179,560	5.5%
2006	3,319,250	3,155,380	163,870	4.9%
2007	3,386,770	3,232,650	154,120	4.6%
2008	3,473,010	3,284,840	188,170	5.4%
2009	3,523,740	3,194,250	329,490	9.3%
2010	3,516,010	3,166,880	349,130	10.0%
2011	3,482,240	3,161,820	320,420	9.2%
2012	3,481,460	3,197,290	284,170	8.1%
2013	3,460,038	3,216,966	243,072	7.0%
2014	3,488,183	3,270,362	217,821	6.2%
2015 January through June[2]	3,540,980	3,334,330	206,650	5.8%

[1]Historical values are subject to revision and may not equal prior report values.
[2]2015 data is averaged for six months.

Fast facts 2. Labor force and unemployment, not seasonally adjusted
Washington state metropolitan areas, January through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics

Metropolitan area	Labor Force	Employed	Unemployed	Unemployment rate
Washington state	**3,540,980**	**3,334,330**	**206,650**	**5.8%**
Bellingham	104,720	98,210	6,510	6.2%
Bremerton	114,600	107,730	6,870	6.0%
Kennewick-Pasco-Richland	129,140	119,300	9,840	7.6%
Longview-Kelso	44,970	41,330	3,640	8.1%
Mount Vernon-Anacortes	56,490	52,410	4,080	7.2%
Olympia	126,140	118,150	7,990	6.3%
Seattle-Bellevue-Everett MD*	1,581,650	1,515,420	66,230	4.2%
Spokane	251,890	233,530	18,360	7.3%
Tacoma MD* (Pierce)	391,110	364,310	26,800	6.9%
Wenatchee	59,330	55,330	4,000	6.7%
Yakima	118,900	108,130	10,770	9.1%

*Metropolitan Division

Fast facts 3. Projected industry average annual growth rates
Washington state, 2013 to 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics

NAICS	Industry sector	2014 Q2 to 2016 Q2	2013 to 2018	2018 to 2023
	Total nonfarm	**2.0%**	**2.1%**	**1.4%**
22, 48, 49	Transportation, warehousing and utilities	1.5%	1.7%	0.8%
23	Construction	5.5%	4.7%	2.0%
31-33	Manufacturing	0.5%	0.6%	0.4%
42	Wholesale trade	2.2%	2.1%	1.1%
44-45	Retail trade	1.7%	1.8%	0.9%
51	Information	1.7%	2.1%	1.8%
52	Financial activities	1.3%	1.3%	0.9%
54-56	Professional and business services	3.6%	3.1%	2.7%
61-62	Education and health services	2.3%	3.4%	1.9%
71-72	Leisure and hospitality	1.7%	1.9%	1.5%
GOV	Government	1.1%	1.1%	1.1%

Fast facts 4. Annual wages and employment by industry
Washington state, 2014 annual averages (preliminary)
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

NAICS	Industry sector	Average number of firms	Total wages paid	Average employment	Average weekly wage
	Total	**218,675**	**$167,413,438,036**	**3,043,708**	**$1,058**
11	Agriculture, forestry, fishing, and hunting	7,298	$2,768,499,322	99,738	$534
21	Mining	156	$138,981,871	2,192	$1,219
22	Utilities	233	$416,001,812	4,770	$1,677
23	Construction	22,079	$8,261,134,807	150,100	$1,058
42	Wholesale trade	13,646	$8,974,485,263	127,901	$1,349
51	Information	3,073	$16,162,130,564	108,888	$2,854
52	Finance and insurance	5,650	$7,461,221,723	90,876	$1,579
53	Real estate, rental and leasing	6,482	$2,081,483,000	46,072	$869
55	Management of companies and enterprises	650	$4,251,891,739	39,917	$2,048
56	Admin., support, waste management and remediation svcs.	10,856	$6,584,607,411	148,363	$854
61	Educational services	2,975	$1,420,589,419	38,480	$710
62	Health care and social assistance*	61,628	$17,365,529,385	392,480	$851
71	Arts, entertainment, and recreation	2,625	$1,387,437,519	46,675	$572
72	Accommodation and food services	13,739	$4,827,086,174	246,772	$376
81	Other services (except public administration)	17,416	$3,183,315,239	89,494	$684
31-33	Manufacturing	6,963	$21,211,394,794	285,469	$1,429
44-45	Retail trade	14,948	$12,179,789,509	337,138	$695
48-49	Transportation & warehousing	4,414	$4,562,446,964	87,248	$1,006
54-55	Professional, scientific, and technical services	21,718	$15,046,280,173	177,261	$1,632
GOV	Government	2,128	$29,129,131,348	523,874	$1,069

*The major reason for the large drop from last year is a result of updating DSHS COPES (Community Options Program Entry System) accounts, which fall under the healthcare and social assistance NAICS code. As a result, data in this sector is not comparable to data from previous years.

Executive summary

U.S. economy and labor market

The pace of economic growth in the United States has averaged a solid, yet unspectacular 2.2 percent during the six-plus years since the country emerged from recession. Although considered modest when compared with previous recoveries and expansions, the level of growth has been sufficient to allow the unemployment rate to drop back near 5 percent and has sustained job growth in the labor market. The constraints that have been limiting the rate of growth include:

- Modest consumer spending growth relative to previous expansions;
- Cautious business investment;
- Demographic trends that have led to a decline in the rate of labor force participation, along with slower labor productivity growth; and
- Cutbacks in federal government purchases of goods and services to address budget shortfalls.

Total nonfarm employment in the United States reached 141.9 million in June 2015, up by 2.1 percent from June 2014. Private sector job growth was up 2.9 million, or 2.5 percent. Since reaching a post-recession low in February 2010, the private sector has gained back all of the 8.8 million occupied jobs lost during the recession and gained 4.0 million more. However, as of June 2015, manufacturing employment has been slower to recover and was down 8.6 percent relative to February 2008.

In June 2015, state and local government employment was still 563,000 below its peak. Federal employment is also below its peak but has increased by 23,000 since June 2014.

Washington's economy and labor market

Using state gross domestic product as the comparison measure, economic growth in Washington expanded by 3.0 percent in 2014, which outpaced the 2.4 percent growth achieved by the nation. From second quarter 2014 to second quarter 2015, personal income in the state increased 4.9 percent compared to 3.6 percent nationally, adjusted for inflation. Consistent with that, total nonfarm employment increased during the same time period.

Seasonally adjusted private sector employment reached a peak in February 2008 and declined until February 2010. Since then, private sector employment has been growing. Public sector employment began increasing during the second half of 2013 following the recession. Total nonfarm employment has been increasing since second quarter 2010. The state unemployment rate has been tracking closely with the national rate since the end of the recession and has been pushing down toward 5 percent in 2015.

Seasonal, structural and cyclical industry employment

Industries in Washington that are most sensitive to seasonal forces involve scenic and sightseeing transportation, crop production and support activities for agriculture and forestry. Structural forces such as productivity improvement, policy changes and technological innovation have heavily influenced employment in ambulatory healthcare services, software publishing and social assistance. Industries where the cyclical component accounts for the most change in employment include support activities for mining, scenic and sightseeing transportation and crop production.

Unemployment

The seasonally adjusted unemployment rate in Washington peaked in first quarter 2010 and remained above the national rate until October 2012. It remained below the national rate through March 2014, and has since tracked closely with the national rate. The number of unemployment recipients was roughly 57,000 in June 2015, down from a peak of just over 300,000 in January 2010. The manufacturing and construction industries accounted for the greatest portion of the workers who exhausted unemployment benefits from July 2014 through June 2015.

The Mass Layoff Statistics program was eliminated by the U.S. Bureau of Labor Statistics in 2013. Data beyond that point on dislocated workers, mass layoffs and plant closures are no longer available for publication.

Employment projections

Total nonfarm employment is expected to grow at an average annual rate of 2.1 percent from 2013 to 2018 and 1.8 percent from 2018 to 2023. The occupational groups likely to experience the fastest growth rates are construction and extraction followed by computer and mathematical, and healthcare support occupations.

Income and wages

Recently released data show the median household income measured in 2014 dollars in Washington fell 1.7 percent from 2010 to 2013, but rose by 3.5 percent in 2014. From 2013 to 2014, the number of occupied jobs increased in all hourly wage ranges, with the exception of jobs paying less than $12 per hour. Job gains were greatest in high-wage occupations that paid more than $54 per hour. Unemployment benefits peaked in 2010 at $4.6 billion before receding during the recovery. In 2014, $1.1 billion in unemployment benefits were paid.

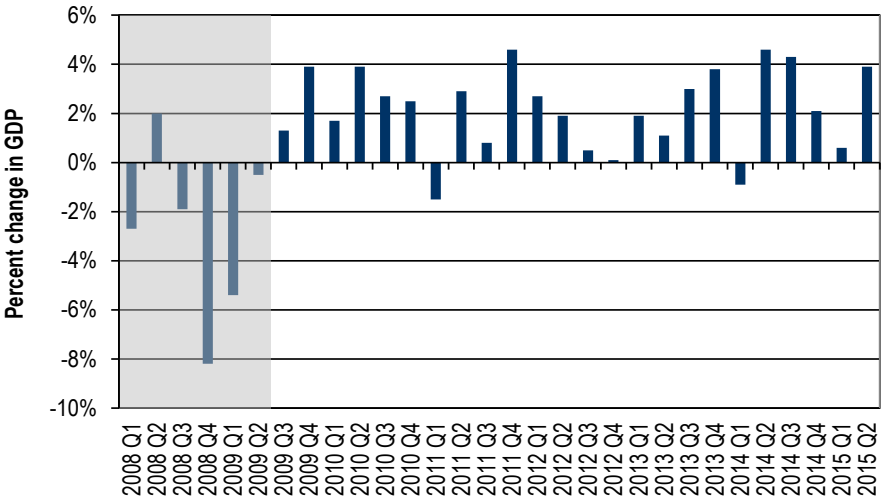
Chapter 1: U.S. economy and labor market

The most recent recession experienced by the nation is beginning to fade in memory as the duration of the economic recovery/expansion lengthens. As of June 2015, the national economy is six years past the recession and considered to be growing and expanding.[1] During this period, economic growth has averaged a solid, but unspectacular 2.2 percent, nearly a full percentage point below the pace averaged during the 25 years prior to the past recession. Moreover, the gains appear to have been more uneven. The rate of growth can be expressed in terms of Gross Domestic Product (GDP), the measure of the output of goods and services in the economy over a period of time. Its rate of progress is shown in *Figure 1-1*.

The rate of recovery has been constrained by several factors. They include:

- Modest consumer spending growth relative to previous expansions;
- Cautious business investment;
- Demographic trends that have led to a decline in the labor force participation rate, along with slower labor productivity growth; and
- Cutbacks in federal government purchases of goods and services to address budget shortfalls.

Figure 1-1. U.S. gross domestic product (chained 2009 dollars), quarterly percent change, seasonally adjusted annualized rate
United States, first quarter 2008 through second quarter 2015
Source: U.S. Bureau of Economic Analysis



U.S. recessions are shaded in gray.

The U.S. economy has been growing slowly and unevenly since the recession ended in June 2009.

[1] National Bureau of Economic Research, Business Cycle Dating Committee.

The modest pace of economic growth has a tendency to create a false impression that the recovery is still in its infancy. At more than six years old, however, the current expansion can no longer be considered young. The average length of business cycle expansions (the time between recessions) since World War II has been 59 months. Recent business expansions have tended to last somewhat longer. The past three expansions lasted an average of seven and a half years, while the longest expansion in recorded U.S. history (March 1991 to March 2001) lasted 10 years.[2]

Although overall growth has roughly maintained the same pace in recent years, the composition of growth has shifted and all of the domestic sectors of the economy are growing again. One area that has experienced notable improvement has been the labor market. U.S. nonfarm payroll employment increased by 245,000 from May 2015 to June 2015. The average monthly job gain from January to June in 2015 was 213,000, which is slightly below the 239,000 monthly average from January to June 2014. The average monthly gain in employment for all of 2014 was 260,000, considerably higher than the 199,000 average for all of 2013. The accelerated rate of job growth also allowed the nation to recover in May 2014 the total number of nonfarm jobs lost during the recession.

The economy got off to a disappointing start in 2015. First quarter real GDP rose by just 0.6 percent due to the influence of several disruptive factors. Harsh winter weather in the form of repeated snow storms hammered the Northeast early in the year, which kept consumers at home and businesses temporarily shuttered. The weather conditions impacted consumer spending as well as the delivery of equipment and inputs to production. In addition, labor disputes at West Coast port facilities disrupted supply chains and curtailed exports that were primarily destined to Asia.[3] Also impacting growth was the one-time shock of lower oil prices, which affected the pace of business investment for equipment and structures as well as energy sector hiring. A significant amount of production accumulated as inventory within the first quarter, most likely in response to the poorer shipping conditions. This suggests that this inventory will be drawn down to fill orders, and should restrain the amount of output produced in future quarters.

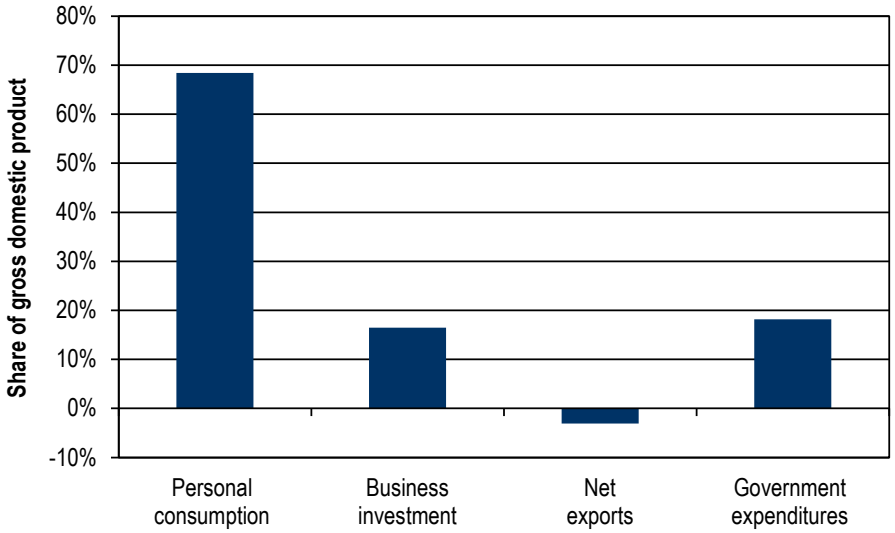
GDP rebounded in the second quarter of 2015 by advancing at a 3.9 percent rate. Net exports were a big swing factor from the first to the second quarter. In the first quarter, net exports subtracted 0.81 percentage points from GDP and then added 0.64 percentage points

[2] National Bureau of Economic Research, Business Cycle Dating Committee.
[3] www.marketwatch.com/story/chart-shows-how-much-west-coast-port-disruption-hurt-trade-2015-04-14.

in the second quarter.[4] Consumer spending led the second quarter, contributing a gain of 2.4 percent to second quarter GDP compared with 1.2 percent in the first quarter.

There are two primary ways to account for GDP. The income approach sums up the earnings the economy generates within a specific time period, while the expenditure approach adds up what has been spent. Both measures should arrive at the same total. The expenditure method is the more common approach and is calculated by adding total personal consumption spending by households, investment spending by businesses, government spending on projects and programs and spending by the international community on domestic products (*Figure 1-2*).

Figure 1-2. Expenditure components of gross domestic product, seasonally adjusted
United States, 2014
Source: U.S. Bureau of Economic Analysis



Consumption expenditures account for the greatest share of GDP.

Consumer spending growth improving

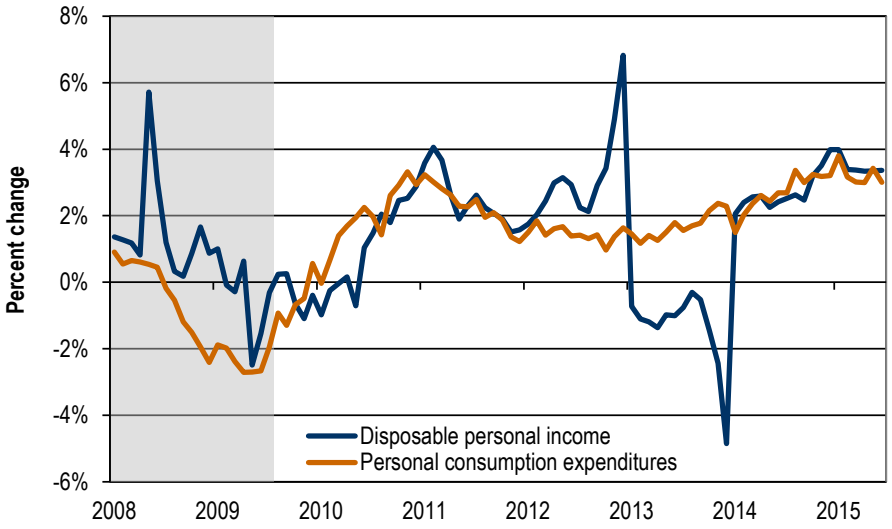
Consumer spending makes the greatest dollar-wise contribution to GDP. As such, consumer spending (technically, personal consumption) has seen modest growth consistent with GDP. Inflation-adjusted consumption has grown at only 2.4 percent on average since the recession ended, down from the 3.0 percent pace preceding the recession. The main drivers of this slow growth have been the greater depth of job losses during this recession combined with tighter credit conditions and erosion of household wealth.

[4] U.S. Department of Commerce, Bureau of Economic Analysis.

Personal consumption over 2014 and the first half of 2015, however, has shown signs of picking up. Continued job growth, low inflation and generally declining gasoline prices have bolstered income gains and stimulated more consumer spending (*Figure 1-3*). Personal consumption growth averaged roughly 3.0 percent from June 2014 to June 2015. Consumer spending got off to a slower start during the first quarter of 2015, perhaps because of the cold spell affecting some parts of the United States. Personal consumption expenditures increased by only 0.1 percent in January on a monthly basis and were flat in February. The second quarter results were much different as spending increased during this time by 3.2 percent, with the greatest increase at 0.5 percent occurring in May.

Real disposable income has grown at a steadier pace beginning in 2014. From June 2014 to June 2015, real disposable income is up 3.4 percent.

Figure 1-3. Percent change in inflation-adjusted disposable income and personal consumption expenditures, seasonally adjusted annualized rate
United States, January 2008 through June 2015
Source: U.S. Bureau of Economic Analysis



U.S. recessions are shaded in gray.

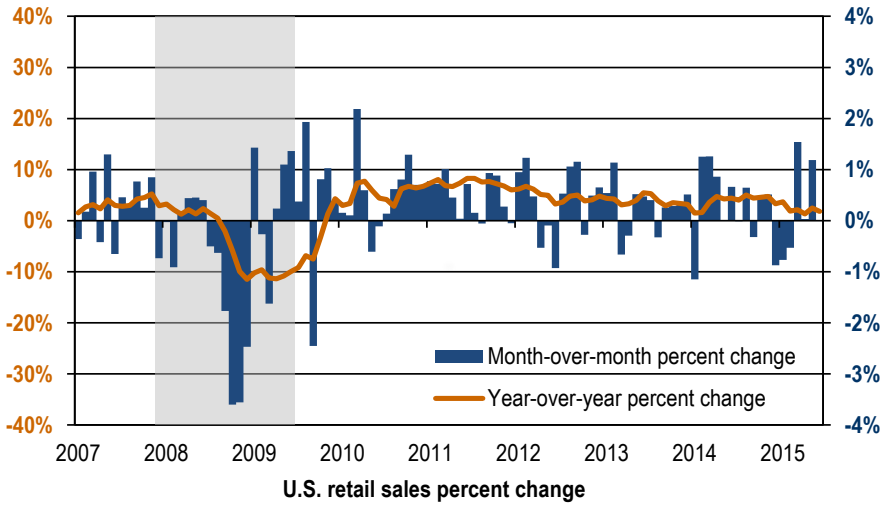
Growth in personal income is leading to stronger consumption activity.

Retail sales are a component of personal consumption expenditures. Thus far in 2015, retail sales data suggest the U.S. economy remains on a path of uneven growth (*Figure 1-4*). Retail sales can be particularly volatile on a monthly basis, so focusing on longer-term trends can help to navigate through some of this volatility. Sales grew by 3.3 percent over 2014 and are currently up 2.9 percent over the first six months of 2015 on an annualized basis.

Monthly retail sales at the beginning of 2015 started weak and appeared to contradict the trend established by the personal consumption expenditures figures. Sales declined for the third consecutive month in February before rebounding strongly in May. The harsh winter weather is probably partly to blame for the slowdown in activity, but there are other factors to consider. Retail sales, as reported by the U.S. Census Bureau, are reported in nominal terms. Consequently, when prices are down, as has been the case for gasoline prices in these quarters, retail sales will be lower simply as a function of lower prices.

It might normally be assumed that the savings from purchases of gasoline at reduced prices would induce consumers to purchase other goods and services. The problem is that these savings accrue only gradually, resulting in limited increases of purchasing power for recipients. It is also compounded by the fact that consumers will be motivated to buy somewhat more gasoline by driving more because the price is lower, thus limiting funds that could be used right away on other purchases. The month of May helped to substantiate these arguments. Sales during the month rose by 1.2 percent. Higher gasoline prices over the month boosted the sales figures, which also showed 11 of 13 categories of retail sales climbing higher. One bright spot in particular continued to be sales from eating and drinking places, which were up 8.7 percent in May on a year-over-year basis. It would appear that this is one place where consumers have been spending some of the money they have been saving by buying cheaper gasoline.

Figure 1-4. U.S. retail sales, month-over-month and year-over-year percent change
United States, January 2007 through June 2015
Source: U.S. Census Bureau, Monthly and Annual Retail Trade Report



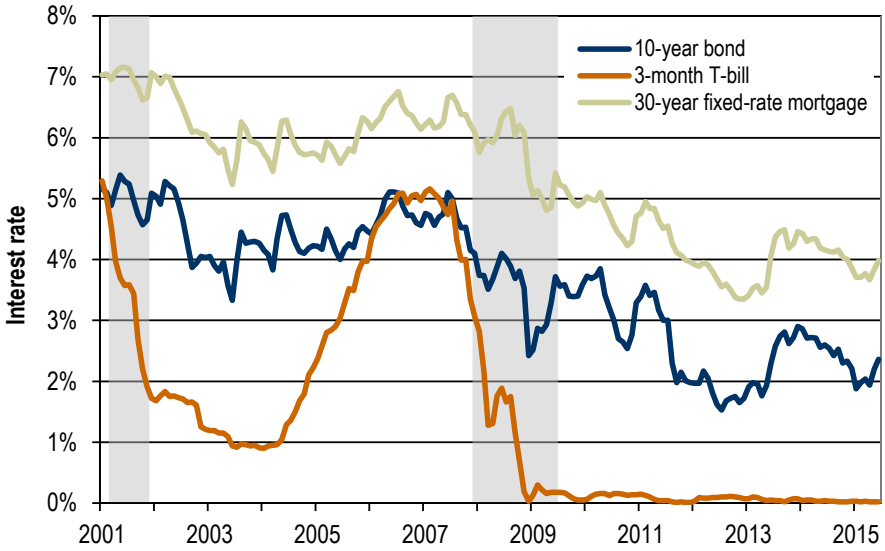
U.S. recessions are shaded in gray.

Increases in retail sales have been uneven but are still indicative of strong domestic consumption.

Federal Reserve ready to increase interest rates

The Federal Reserve Board (Fed) began the year in 2015 by acknowledging the overall improvement in the U.S. economy and the U.S. economic outlook.[5] The economy continued to progress toward the Federal Reserve's objective of maximum employment during the year, while inflation ran below the Fed's targeted level of two percent. With interest rates at historical lows (*Figure 1-5*), the Fed moved closer to raising rates for the first time since June 2006.[6]

Figure 1-5. Selected interest rates
United States, January 2001 through June 2015
Source: Federal Reserve Board



U.S. recessions are shaded in gray.

Federal Reserve Board policy measures in response to recession have sustained low interest rates.

[5] "Monetary Policy Report," Board of Governors of the Federal Reserve System, February 24, 2015: www.federalreserve.gov/monetarypolicy/mpr_20150224_summary.htm.
[6] www.reuters.com/article/2015/11/20/us-usa-fed-dudley-idUSKCN0T92DN20151120.

Construction activity slowly responding to improved economic climate

Business investment has gradually been regaining its footing. The level of inflation-adjusted total private fixed investment spending rose by 4.7 percent from second quarter 2014 through second quarter 2015.[7]

An important category of private fixed investment is the construction of new residential and nonresidential buildings. Construction is recovering, although slowly (*Figure 1-6*), bolstered by low interest rates.

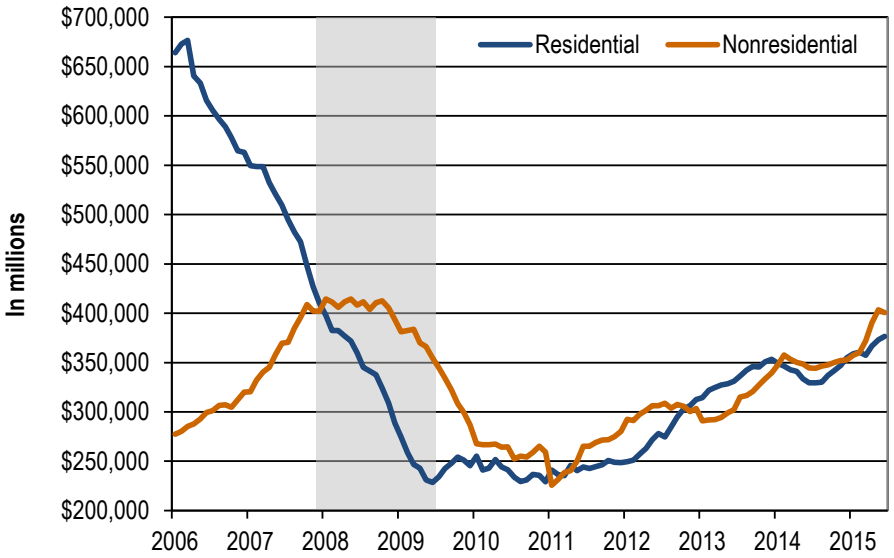
Residential construction has been gaining momentum since 2012. The value of private residential construction rose to roughly $377 billion in 2015. Most of the gains have come from apartment construction. Starts of single family homes have taken longer to get back on track even though the availability of existing homes for sale remains low and the sale of new homes has been improving.

Once again, it appears that the harsh weather in the early part of 2015 caught up with this component of construction spending. After rising 1.1 percent in January, residential construction spending rose by just 0.5 percent in February before falling 0.9 percent in March. Spending rebounded in April and May, averaging 2.2 percent per month over that period. The improvement continued into June, although the gain was concentrated in multifamily construction and home improvement.

Construction spending improved over the course of the year from June 2014 to June 2015, with private nonresidential construction up 16.3 percent and private residential construction spending up 14.3 percent. Private nonresidential construction outlays fell 0.7 percent in June, ending a 10-month positive streak.

[7] U.S. Department of Commerce, Bureau of Economic Analysis.

Figure 1-6. Value of private construction, millions of dollars, seasonally adjusted annualized rate
United States, January 2006 through June 2015
Source: U.S. Census Bureau, Construction Spending



U.S. recessions are shaded in gray.

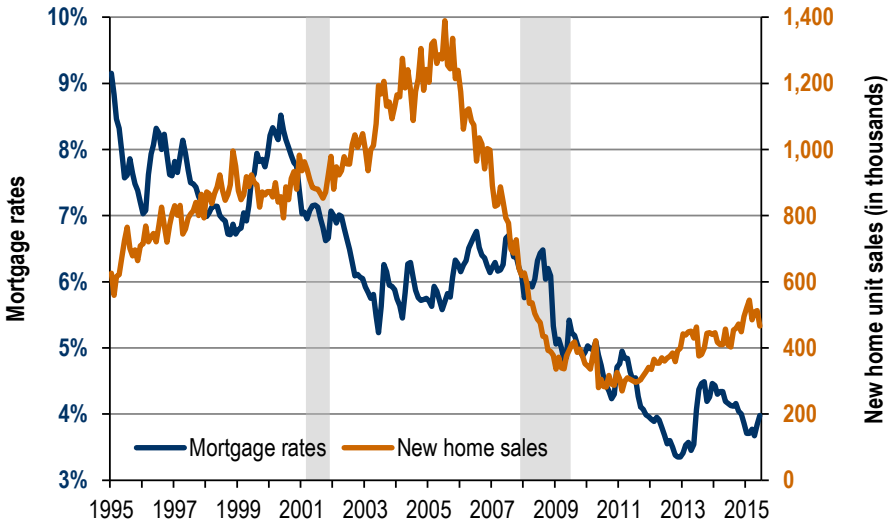
Construction activity has been slowly rebounding since the recession ended.

Housing recovery gaining some traction

Mortgage rates moved lower in 2014 after rising in response to speculation anticipating the Fed's tightening of monetary policy. Home sales pulled back briefly in response to the higher rates before moving to higher levels when rates began to moderate. Home sales improved modestly during the latter part of the summer in 2014 and moved into the fall with some momentum. New home sales during fourth quarter 2014 finished up being 6.4 percent higher than the same period one year earlier (*Figure 1-7*).

New home sales reversed course in March 2015, falling 11 percent after rising 4.6 percent in February 2015. Much of the gain in February and subsequent reversal was likely due to pre-sales of homes occurring before construction activity had begun, given harsh winter weather. Sales bounced back in April, rising 4.6 percent during the month. Despite some of the weather-related volatility, new home sales are up 19.2 percent from January to June 2015 compared with the same period one year previously.

Figure 1-7. Conventional 30-year mortgage rates and new home sales, thousands of units, seasonally adjusted annualized rate
United States, January 1995 through June 2015
Source: Federal Housing Finance Agency; U.S. Bureau of Economic Analysis, New Residential Sales



U.S. recessions are shaded in gray.

Sales of new homes have been gradually improving.

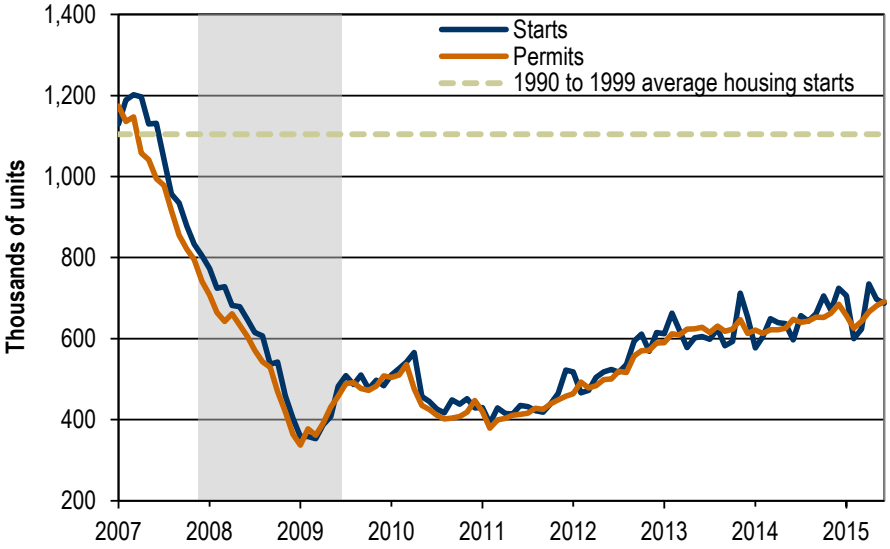
Builder sentiment has risen in response to low interest rates and home price appreciation, and this has been evidenced in an increasing number of housing permits and starts (*Figure 1-8*).[8] The number of starts and permits began to increase in 2009, regressed slightly in early 2011 but then rose above 2010 levels in 2013 to 2015.

Single family housing starts began the year well above 2014 levels, but experienced a sizeable decline in February. Single family housing starts plunged 15 percent, although, once again, severe weather conditions were the major reason for the decline. Housing starts rose 3.8 percent in March to slightly compensate and then roared back in April by rising 18 percent. After the strong increase in April, sales retreated in May and June by declining 5.2 percent and 1.4 percent respectively. Overall, starts are still up by 9.3 percent from June 2014 to June 2015.

[8] Second quarter 2013, House Price Index, National Association of Home Builders, June 15, 2015: www.nahb.org/en/news-and-publications/Press-Releases/2015/june/builder-confidence-hits-yearly-high-in-june.aspx.

A similar pattern is seen in the housing permits data with declines throughout much of the winter and increases in March and April. Permits increased however in May and June and are up 5.6 percent from January through June 2015 compared with the same period in 2014.

Figure 1-8. Single family housing starts and permits, thousands of units, seasonally adjusted annualized rate
United States, January 2007 through June 2015
Source: U.S. Census Bureau, Building Permits Survey and Survey of Construction



U.S. recessions are shaded in gray.

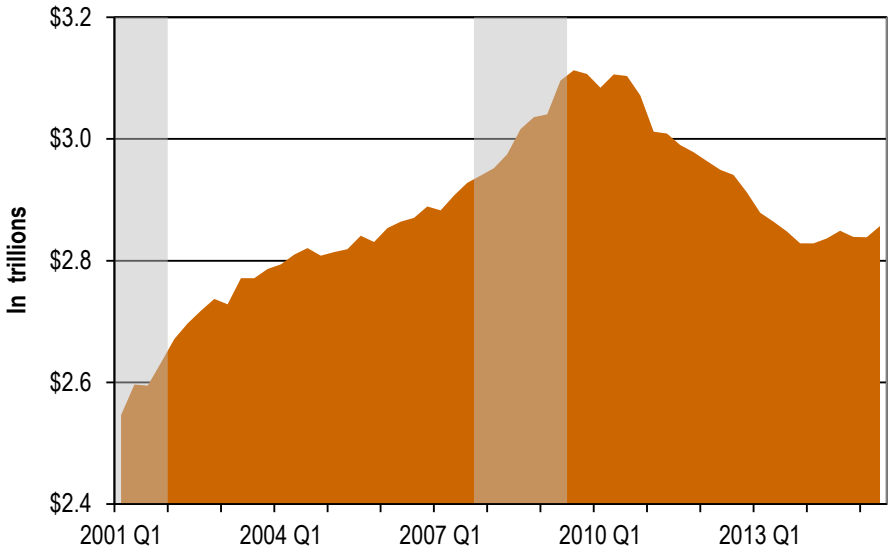
Home construction levels are gradually improving during recovery.

Government (public sector) spending tightening levels off

After a post-recession peak, overall federal, state and local government spending decreased before stabilizing beginning in the second half of 2014 (*Figure 1-9*). An improving economy has been instrumental in increasing tax revenues for state and local governments resulting in greater spending allotments.

Federal lawmakers moved to loosen spending restrictions with the passage of the "Ryan-Murray" budget agreement, officially known as the Bipartisan Budget Act of 2013. The measure temporarily lifted the sequestration caps for federal fiscal years 2014 and 2015. The agreement provided some discretionary spending relief, helping to boost some segments of federal government spending. This framework, along with a gradual but steady improvement in the fiscal situation of state and local governments, has helped to slightly increase governments' contributions to economic activity over the past year.

Figure 1-9. Government purchases and gross investment, trillions of dollars adjusted for inflation, seasonally adjusted annualized rate
United States, first quarter 2001 through second quarter 2015
Source: U.S. Bureau of Economic Analysis, Government Current Receipts and Expenditures



U.S. recessions are shaded in gray.

After a post-recession peak, government spending had been on the decline until third quarter 2014.

Public sector employment stabilizes as private sector employment grows

Two surveys are used by the U.S. Bureau of Labor Statistics (BLS) to measure national labor market trends. The establishment survey provides an estimate of the number of occupied jobs in the private and public sectors (federal, state and local government). The survey of households, which numbers roughly 50,000 to 55,000 households out of 115 million households in the country, is an estimate of the number of people either employed or unemployed but searching for a job.[9]

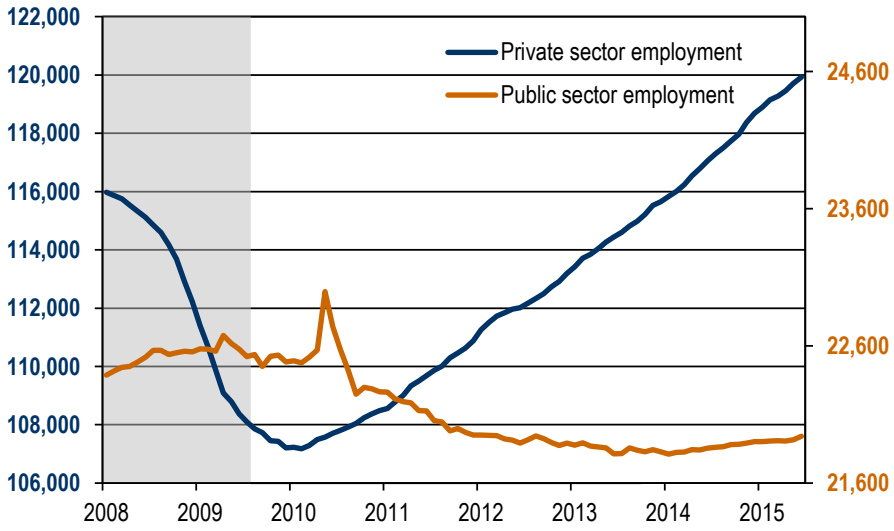
According to the establishment survey, total nonfarm employment reached 141.9 million in June 2015, up by 2.1 percent from June 2014. Total nonfarm employment had peaked at the beginning of the economic recession in January 2008 at 138.4 million before declining, so June 2015 employment establishes the latest post-recession high, 2.5 percent above the previous peak.

[9]The estimate of the number of households in the United States comes from the quarterly Homeownership and Vacancy report published by the U.S. Census Bureau.

Figure 1-10 shows divergent trends in employment in the private and public sectors. Private sector employment began increasing after the recession in 2010 while employment in the public sector has only recently improved. Improving state and local government payrolls began to offset losses in federal employment, so total government employment has largely risen since February 2014. Prior to that, state and local governments lost jobs for four straight years.

In June 2015, state and local governments added 12,000 jobs. State and local government employment is now up 132,000 from its bottom, but is still 397,000 below the peak. Federal government layoffs have slowed and employment is beginning to expand. Federal employment is up 10,000 from June 2014 to June 2015.

Figure 1-10. Total private and public nonfarm employment, in thousands, seasonally adjusted
United States, January 2008 through June 2015
Source: U.S. Bureau of Labor Statistics, Current Employment Statistics



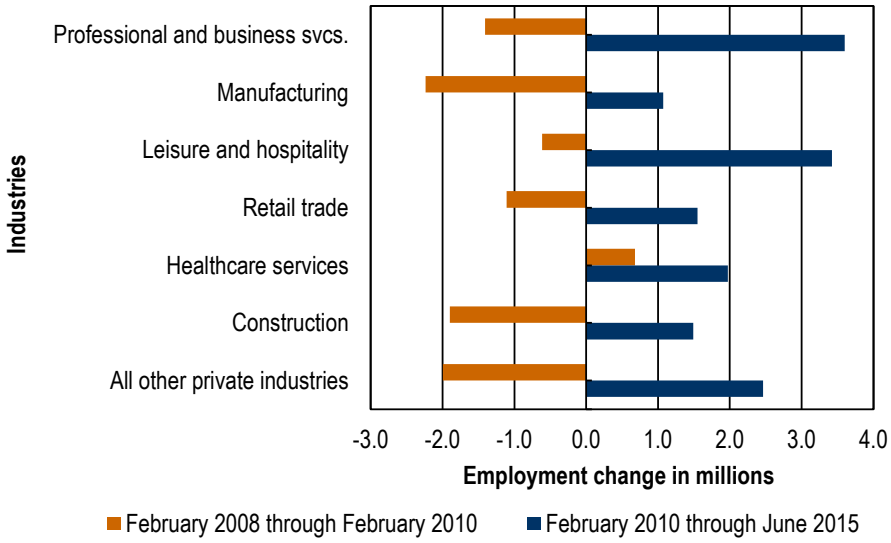
U.S. recessions are shaded in gray.

Private sector employment is expanding, but public sector employment has only recently begun to increase.

Figure 1-11 shows how employment by industries fared during the recession and the post-recession recovery period. Total private nonfarm employment began declining from its peak in February 2008 and reached its trough in February 2010. Several key points should be made:

- Professional and business services, leisure and hospitality, retail trade and all other private industries employment gains have exceeded the losses during the recession.
- Healthcare services employment did not fall during the recession and has since made greater gains.
- Manufacturing employment has been slower to recover.
- Construction employment is increasing at a "non-bubble" pace.

Figure 1-11. Change in private sector employment by industry, in millions
United States, February 2008 through June 2015
Source: U.S. Bureau of Labor Statistics, Current Employment Statistics

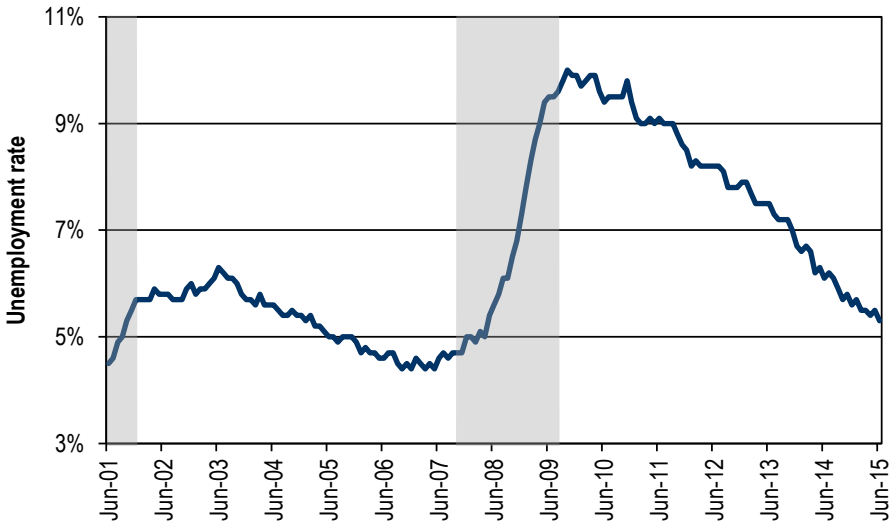


Private sector employment has expanded in services industries, manufacturing employment is struggling to recover and construction employment is normalizing.

Downward trend for unemployment rate

The unemployment rate is based on the national household survey and is perhaps the most widely used measure of the labor market. As of June 2015, the unemployment rate was 5.3 percent, down from 6.1 percent in June 2014 and down from the recession peak of 10.0 percent in October 2009 (*Figure 1-12*). This drop in the unemployment rate is an anticipated event when recoveries take place. However, the decline in unemployment rates since the 2007 to 2009 recession has taken place more swiftly then what occurred after the 2001 recession and other more recent recessions.

Figure 1-12. Monthly unemployment rate, seasonally adjusted
United States, June 2001 through June 2015
Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



U.S. recessions are shaded in gray.

The unemployment rate continues to decline as the economy improves.

Sustained job growth has provided the major catalyst to reduce the rate of unemployment after the recession. The creation of jobs and the employment that follows reduces the degree of cyclical unemployment, which is unemployment related to the downside of the business cycle, namely recession. Another factor that has contributed to declining unemployment rates over much of the post-recession period has been a drop in labor force participation. From September 2007 to September 2014, the labor force participation rate has fallen by more than three percentage points, the steepest decline in the post World War II era (*Figure 1-13*). In June 2015, the labor force dropped to a new cycle low of 62.6 percent. Other factors other than the recession have played a role in the decline. They include demographic and cultural shifts that are independent of the business cycle and are typically referred to as structural shifts or factors.

One well known structural shift is the aging of the labor force. In part, this is a result of the aging of the baby boomers in recent years and the slow birth rate during the post baby boom period. Because older workers' participation rates are lower, the increase in the share of old workers by itself pushes down the aggregate participation rate.

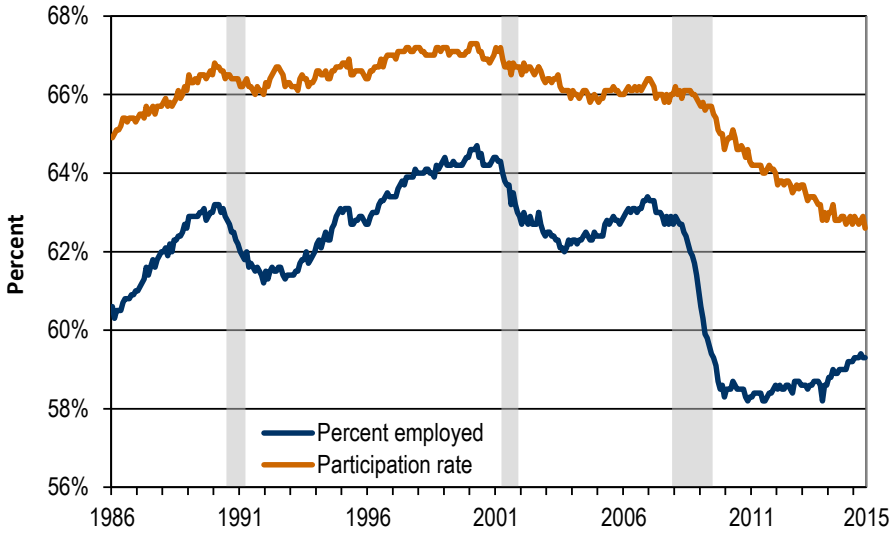
Data on those who were not in the labor force during 2004 and 2014 were examined to provide insight into why people did not work. From 2004 to 2014, there was an increase in the proportion of the population 16 years and older that was not in the labor force and that cited school attendance, illness or disability, or retirement as the main reason for not working.[10]

The degree to which the drop in labor force participation is due to cyclical influences versus structural trends is important in assessing the state of the labor market. Since evidence is mounting on the side of ongoing structural trends, the unemployment rate may be depicting a fairly accurate picture of the improvement of the labor market and a consequent decline in labor market slack.

Figure 1-13 also shows the recent decline in a related measure: the employment-to-population ratio, shown as percent employed. The labor force participation rate measures the number of people in the workforce – employed or seeking work – relative to the total number of working age people in the population. The employment-to-population ratio measures the number of people employed relative to the total number of working age people in the population.

[10] Steven F. Hipple, "People who are not in the labor force: why aren't they working?," Beyond the Numbers: Employment & Unemployment, vol. 4, no. 15 (U.S. Bureau of Labor Statistics, December 2015), www.bls.gov/opub/btn/volume-4/people-who-are-not-in-the-labor-force-why-arent-they-working.htm.

Figure 1-13. Labor force participation rate and employment-to-population ratio, seasonally adjusted annualized rate
United States, January 1986 through June 2015
Source: U.S. Bureau of Labor Statistics, Current Population Survey



U.S. recessions are shaded in gray.

Even as unemployment rates are decreasing, more people are electing to leave or stay out of the labor force.

The employment-to-population ratio has begun to move higher as a result of stronger employment growth that began in 2013. As long as employment continues to grow toward full employment, cyclical unemployment will fall and labor force participation would be expected to increase slightly in the near term.

Chapter 2: Washington's economy and labor market

Economic events that affect and shape the national economy have very similar effects on state economies. States are connected economically through the free flow of commerce across state lines and through the mobility of labor. Consequently, national recessions and recoveries are typically experienced by all states, though the degree to which they are felt might differ between states.

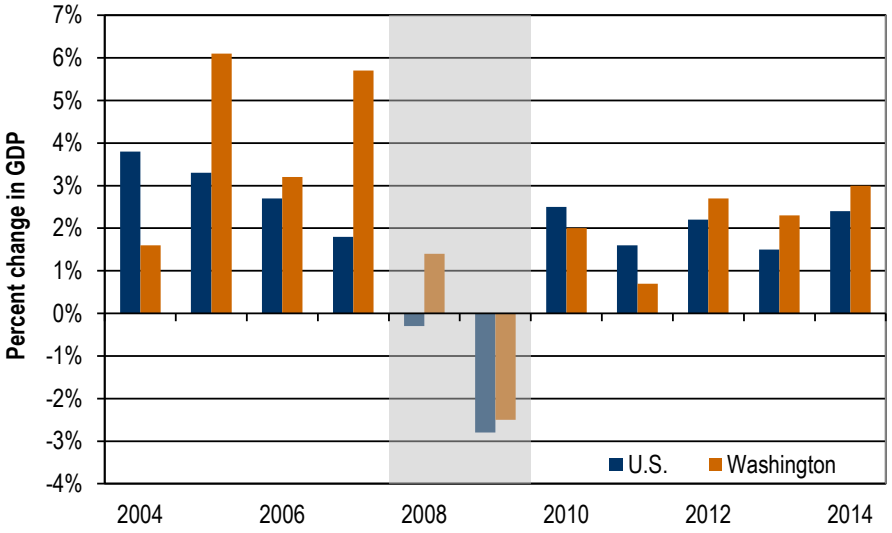
Washington's level of economic activity can be measured by the value of the goods and services it produces at some point in time. This measure of the economic output of the state, formerly known as gross state product and now known as state gross domestic product (GDP), is the sum of all value added by industries within the state. It is the counterpart to the nation's GDP.

The U.S. Bureau of Economic Analysis computes state GDP annually. Changes in state GDP can be used as a measure of state economic growth, much as changes in national GDP are used to measure national economic growth.

Washington state's economy, in terms of GDP, ranked 14th among all U.S. states and territories in 2014. Its GDP expanded by 3.0 percent in 2014 (*Figure 2-1*), which outpaced the 2.4 percent growth achieved by the nation.

Washington's GDP followed the U.S. GDP into decline in 2009 before moving back into positive territory in 2010 along with the national GDP. Washington's economy has outperformed the national economy the last three years.

Figure 2-1. U.S. and Washington state gross domestic product, (chained 2009 dollars), annual percent change, seasonally adjusted annualized rate
United States and Washington state, 2004 through 2014
Source: U.S. Bureau of Economic Analysis



U.S. recessions are shaded in gray.

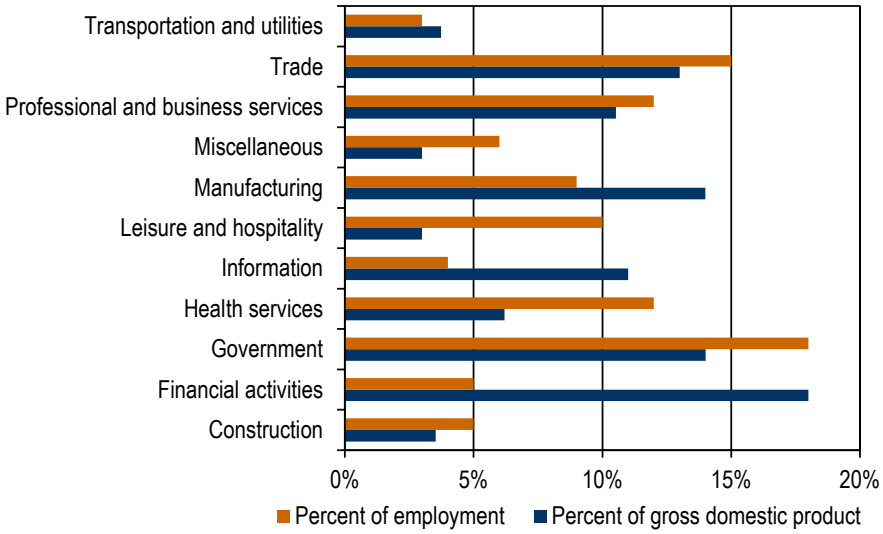
Washington's economy has grown faster than the national average the past three years.

Figure 2-2 shows the contributions each major industry made to state GDP and total nonfarm employment, respectively, in 2014.[11]

In the private sector, financial activities made up the greatest portion of the state's GDP, followed by manufacturing and trade. Government made up the greatest portion of employment, but includes all of the public sector – that is, all federal, state and local government establishments that provide services to the general public (e.g., federal and state hospitals, federal and state agencies and state and local schools). These rankings are consistent with 2013.

Both the financial and information industries employed a relatively small proportion of workers relative to their contributions to state GDP. Since an industry's contribution to state GDP includes their employees' wages and salaries, and these sectors tend to consist of higher-wage occupations than other industries, they therefore make strong contributions to state GDP.

Figure 2-2. Percent of nonfarm employment and state gross domestic product by industry
Washington state, 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Current Employment Statistics; U.S. Bureau of Economic Analysis



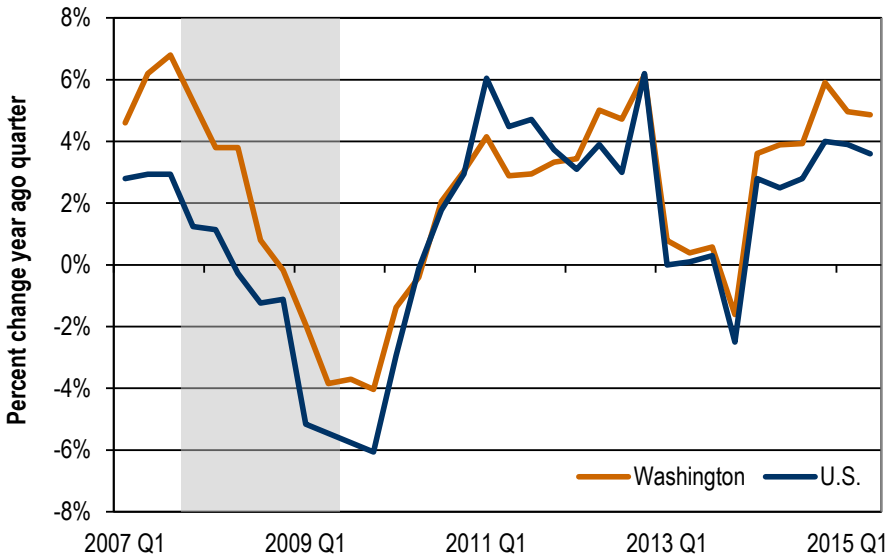
Financial activities represented the largest share of state GDP, but a much smaller share of employment, in 2014.

[11] In *Figure 2-2*, trade combines wholesale and retail trade. Miscellaneous consists of the remaining industries, including private educational services, mining and logging and the industry group known as "other services."

Personal income is gradually increasing

Personal income in Washington state increased during the recovery as economic activity and employment increased. Income growth in Washington overtook national income growth starting in 2012 (*Figure 2-3*). Personal income in Washington state rose by 4.9 percent from second quarter 2014 to second quarter 2015 compared to 3.6 percent nationally, adjusted for inflation.

Figure 2-3. Personal income, adjusted for inflation, percent change year ago quarter
United States and Washington state, first quarter 2007 through second quarter 2015
Source: U.S. Bureau of Economic Analysis, State Personal Income



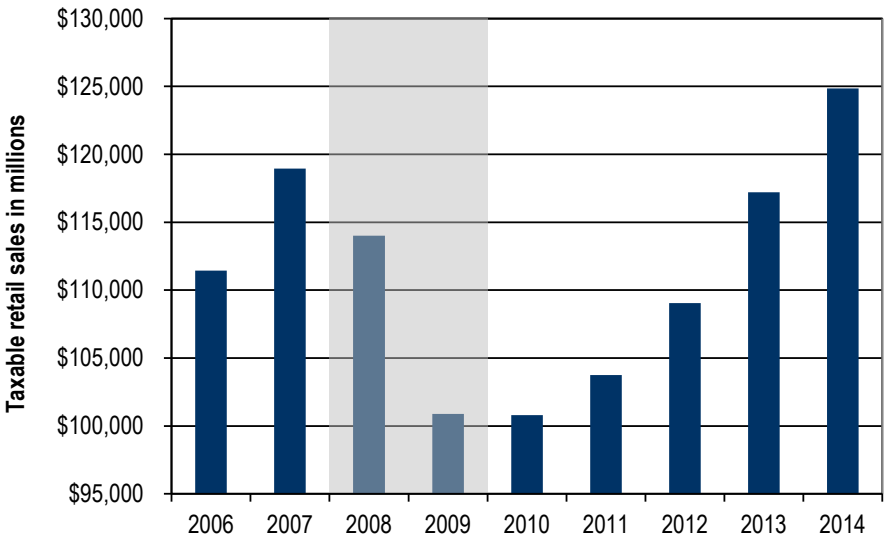
U.S. recessions are shaded in gray.

Washington's income growth has surpassed the nation since first quarter 2012.

Income growth supported greater spending

Local consumer spending patterns are reflected in taxable retail sales. *Figure 2-4* shows how taxable sales were affected by the recession and the extent to which they are recovering after the recession. Taxable retail sales in 2014 exceeded the peak previously reached in 2007. After reaching an annual low in 2010 after the recession, sales revenues have increased at an average of about 6 percent per year through 2014.

Figure 2-4. Annual taxable retail sales, millions of dollars
Washington state, 2006 through 2014
Source: Washington State Department of Revenue



U.S. recessions are shaded in gray.

Retail sales have grown steadily since 2011 and have surpassed 2007 levels.

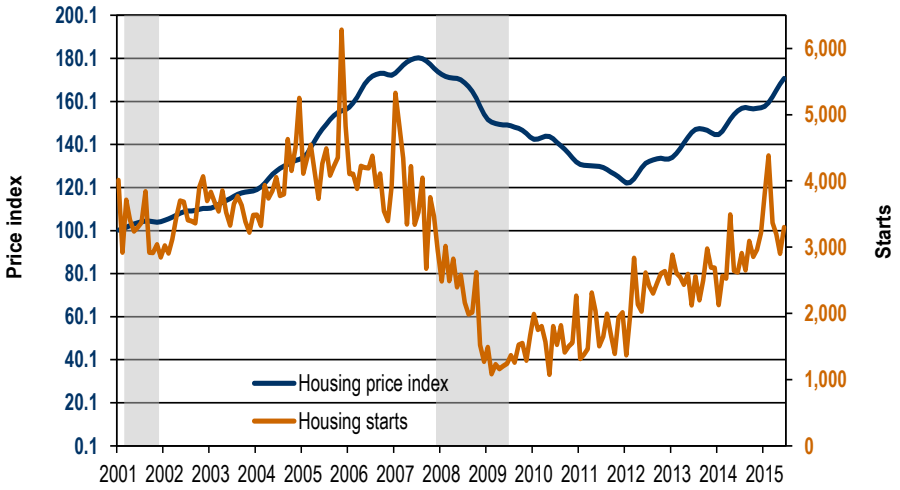
Washington housing market following national trend

Low interest rates, population growth and improving employment conditions are continuing to revive household formation, although it remains well below the pre-recession level trend. Household formation is the creation of a new household, which is simply defined as a group of individuals who live together, regardless of family structure. Household formation suggests more people getting jobs and getting apartments or perhaps getting married or having children, which then compels them to leave their shared housing arrangements.

The increase in mortgage rates during the second half of 2013 took some momentum away from the housing rebound in Washington state, although home prices continued to rebound solidly (*Figure 2-5*).

Housing starts began improving during the second quarter of 2014 and have continued picking up momentum into 2015. February 2015 was a strong month for homebuilding activity, as housing starts totaled more than 4,000 for the first time since 2007. Helped by the February starts figure, total housing starts for the first six months of 2015 are running 31.2 percent ahead of the pace set in 2014.

Figure 2-5. Housing price index and single-family housing starts, seasonally adjusted, December 2000 = 100
Washington state, January 2001 through June 2015
Source: Federal Home Loan Mortgage Corporation

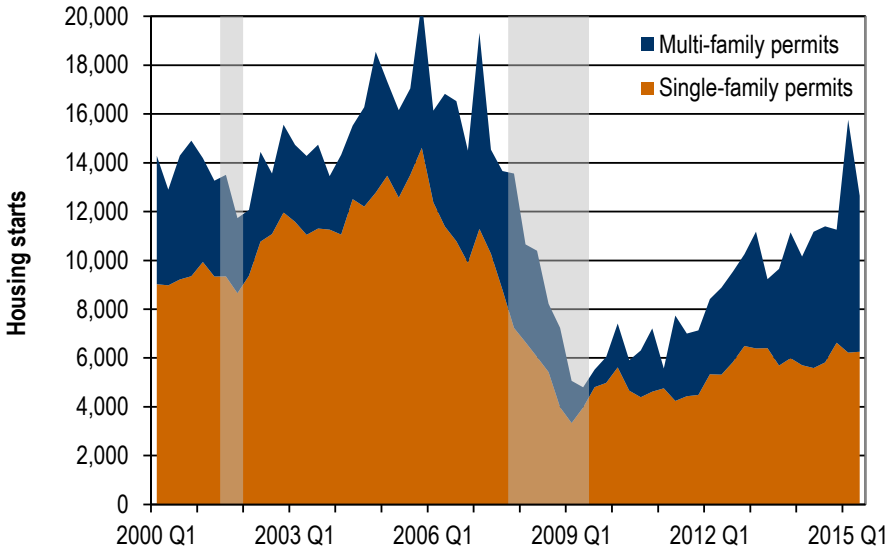


U.S. recessions are shaded in gray.

Housing prices have continued to rise and home building activity is increasing.

Most residential activity has traditionally been aimed at construction of single-family units compared with multi-family residences (*Figure 2-6*). However, there has been a greater rebound in multi-family unit construction, including apartments and condominiums, after the recession. Multi-family permits are up nearly 59 percent the first half of 2015 compared with the same period a year ago. Seattle apartment construction has been particularly strong. The downtown apartment market is on track to see nearly 3,500 units delivered in 2015. This is more than any year since tracking began in 2005.[12]

Figure 2-6. Residential building permits by type of unit, seasonally adjusted annualized rate
Washington state, first quarter 2000 through second quarter 2015
Source: U.S. Census Bureau, Building Permits Survey



U.S. recessions are shaded in gray.

Demand for multi-family units spiked in 2015 and are now being built at about the same rate as single-family units.

[12] Development Guide, June 2015 Update, Downtown Seattle Association.

International trade, an important part of the state economy

Washington was the third-largest exporting state in the country in 2014, having moved up from fourth in 2013. The state has maintained a positive trade balance, with the value of exports exceeding imports.[13] Aerospace, particularly commercial aircraft, made up the dominant share of the state's exports in terms of value (*Figure 2-7*). Agricultural commodities collectively comprised the next largest share of the state's exports, accounting for roughly 13 percent of total exports.

Figure 2-7. Top 10 export commodities
Washington state, 2014
Source: U.S. Census Bureau, State Trade Data

Commodity	Millions of dollars 2014	Percent share of state exports 2014	Percent change 2013 to 2014
Civilian aircraft, engines and parts	$47,786	52.8%	12.2%
Soybeans, not either specified or included	$5,378	5.9%	16.0%
Oil (not crude) from petrol and bitumen mineral	$2,849	3.1%	-12.7%
Miscellaneous transportation equipment	$1,947	2.2%	*
Wheat (other than durum wheat) and meslin	$1,940	2.1%	21.0%
Corn (maize) other than seed corn	$1,751	1.9%	109.8%
Light oils and prep (not crude) from petroleum	$1,079	1.2%	-1.1%
Coniferous wood in the rough, not treated	$1,022	1.1%	-4.9%
Small air conditioners for airplanes and other vehicles	$914	1.0%	72.6%
Apples, fresh	$838	0.9%	-0.8%

*Indicates a percent change greater than 500.

Aerospace has dominated Washington's export market.

[13] United States Census Bureau, State Trade Data.

China largest destination for Washington state exports

The dollar value of exports from Washington has risen each year from 2010. From 2013 to 2014, they rose by roughly 11 percent. Washington's geographic orientation toward the Asian Pacific Rim, along with its coastal ports, provide a strong basis for international trade. The two largest economies in that region are China and Japan; together they account for over 30 percent of Washington's export market (*Figure 2-8*).

Figure 2-8. Top 10 destination countries for Washington state exports, based on 2014 ranking
Washington state, 2011 through 2014
Source: U.S. Census Bureau, State Trade Data

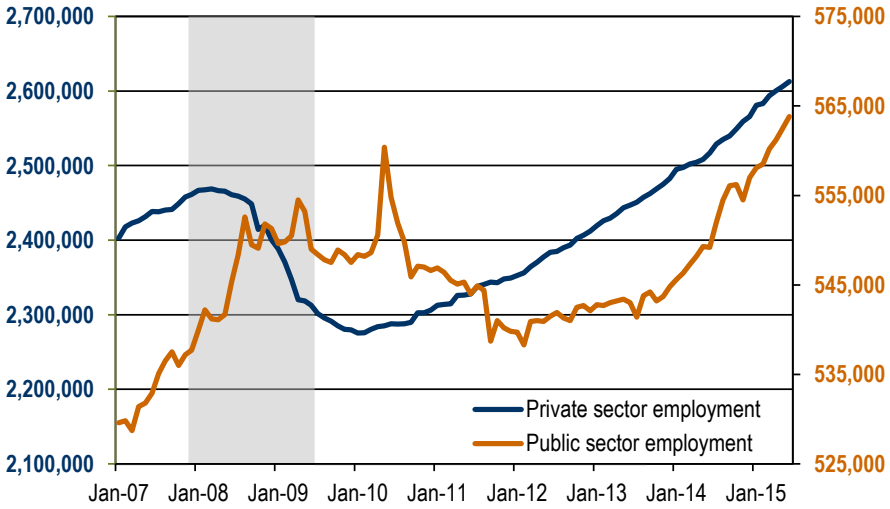
	Millions of dollars					
Country	2011	2012	2013	2014	Percent share 2014	Percent change 2013 to 2014
China	$11,239	$14,157	$16,711	$20,690	22.8%	23.8%
Canada	$8,551	$8,381	$8,993	$9,291	10.3%	3.3%
Japan	$6,471	$9,026	$7,037	$7,364	8.1%	4.6%
United Arab Emirates	$2,756	$5,059	$3,870	$3,272	3.6%	-15.5%
United Kingdom	$2,019	$1,610	$2,702	$2,951	3.3%	9.2%
South Korea	$3,262	$3,384	$2,712	$2,754	3.0%	1.5%
Mexico	$1,375	$2,864	$3,198	$2,735	3.0%	-14.5%
Taiwan	$1,716	$1,515	$1,443	$2,475	2.7%	71.5%
Qatar	$858	$1,180	$2,194	$2,344	2.6%	6.9%
Indonesia	$1,588	$1,610	$2,290	$2,173	2.4%	-5.1%

China has consistently been the top trade destination for Washington exports.

Public sector employment in Washington state starting to rebound

Figure 2-9 shows how employment in the state over the last 8 years has changed in both the private and public sectors. Employment in the private sector dropped precipitously as a result of the recession, but has recovered nicely since 2010. It had taken longer for public sector employment to fall in response to the recession, as federal grants provided emergency relief to states, thereby serving to bolster employment during 2010. As state economic conditions improved and private sector employment continued to rise, tax revenues increased.so that state and local governments could increase hiring. From June 2014 to June 2015, employment by state and local governments has increased by 2.7 percent..

Figure 2-9. Total private and public sector nonfarm employment, seasonally adjusted Washington state, January 2007 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Current Employment Statistics



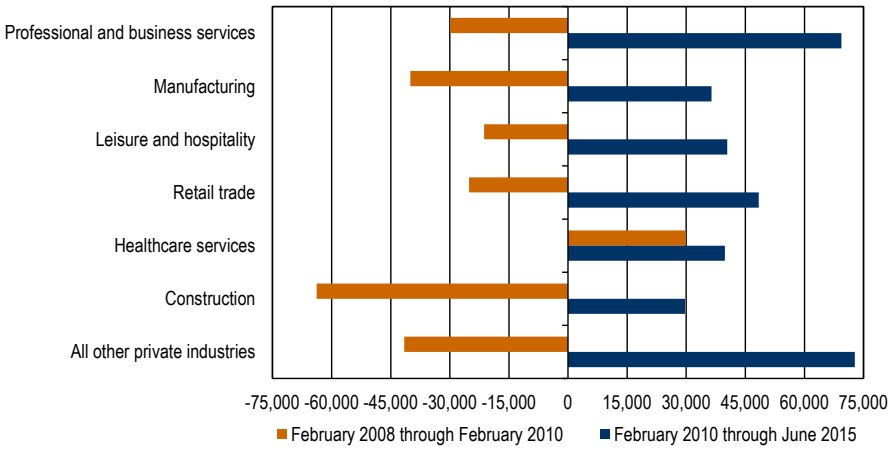
U.S. recessions are shaded in gray.

The employment recovery is now being felt in both the private and public sectors.

The data in *Figure 2-10* depict the extent of recovery in employment by industry since reaching a trough during the recession. In total, private sector employment in October 2013 surpassed its previous peak reached in 2008. Private sector employment in June 2015 was 145,100 more, or roughly 5.9 percent greater than February 2008 levels. The change in industry employment on the post-recession era is quite similar to what has taken place nationally in that:

- Professional and business services, leisure and hospitality, retail trade and all other private industries employment gains have exceeded the losses during the recession.
- Healthcare services employment did not fall during the recession and made greater gains during the recovery.
- Manufacturing employment has been slower to recover.
- Construction employment is increasing at a "non-bubble" pace.

Figure 2-10. Change in private sector employment by industry
Washington state, February 2008 through June 2015
Source: U.S. Bureau of Labor Statistics, Current Employment Statistics



Private sector employment has bounced back; construction employment has rebounded from housing bust.

Seattle area has experienced strongest employment recovery

Figures 2-11 and *2-12* illustrate the extent to which the Seattle-Bellevue-Everett (Seattle) Metropolitan Division (King and Snohomish counties) has served as a major center for job creation during the recovery period. This Metropolitan Division (MD) lost a greater number of jobs during the recession than the rest of the state as a whole. Since February 2010, however, nonfarm employment in the Seattle-Bellevue-Everett Metropolitan Division grew by 216,800 through June 2015 and effectively recovered 189 percent of the jobs lost in the area since February 2010. Although the rest of the state had added fewer total jobs after the recession than had the MD, it has recovered a larger percentage of jobs that had been lost as a result of the recession.

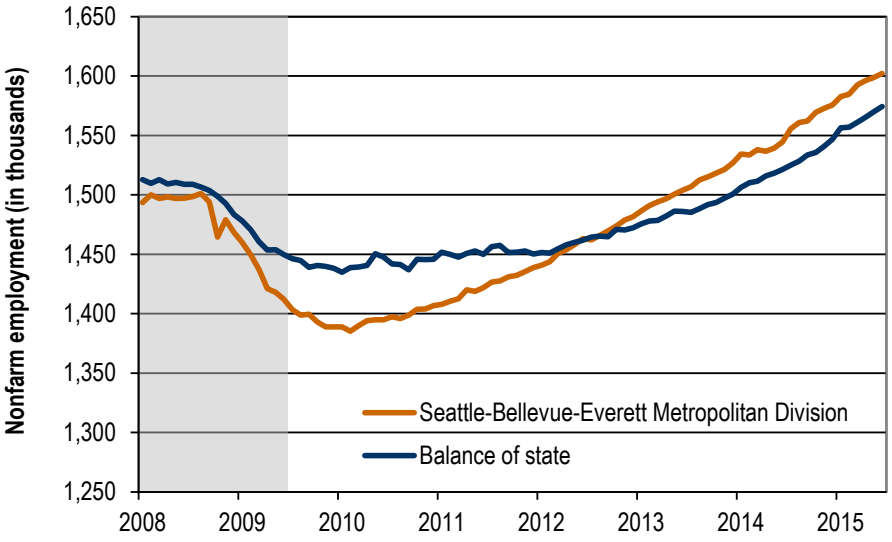
Employment growth in both the Seattle MD and balance of the state has picked up in recent years. From June 2012 to June 2015, employment in the Seattle MD has grown 9.5 percent while employment in the rest of the state has grown 7.7 percent. Beginning in June 2012, more jobs were located in the Seattle MD than the rest of the state.

Figure 2-11. Total nonfarm employment change through recession and recovery, seasonally adjusted
Washington state, Seattle-Bellevue-Everett Metropolitan Division and balance of state, February 2008 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Current Employment Statistics

Area	Employment change February 2008 through February 2010	Employment change February 2010 through June 2015	Percent of recovery in jobs lost
Seattle-Bellevue-Everett Metropolitan Division	-114,900	216,800	189%
Balance of state	-70,900	135,700	191%
Total for state	**-185,800**	**352,500**	**190%**

The Seattle-Bellevue-Everett Metropolitan Division has led in jobs recovery.

Figure 2-12. Monthly total nonfarm employment, in thousands, seasonally adjusted
Seattle-Bellevue-Everett Metropolitan Division and balance of state,
January 2008 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics,
Current Employment Statistics



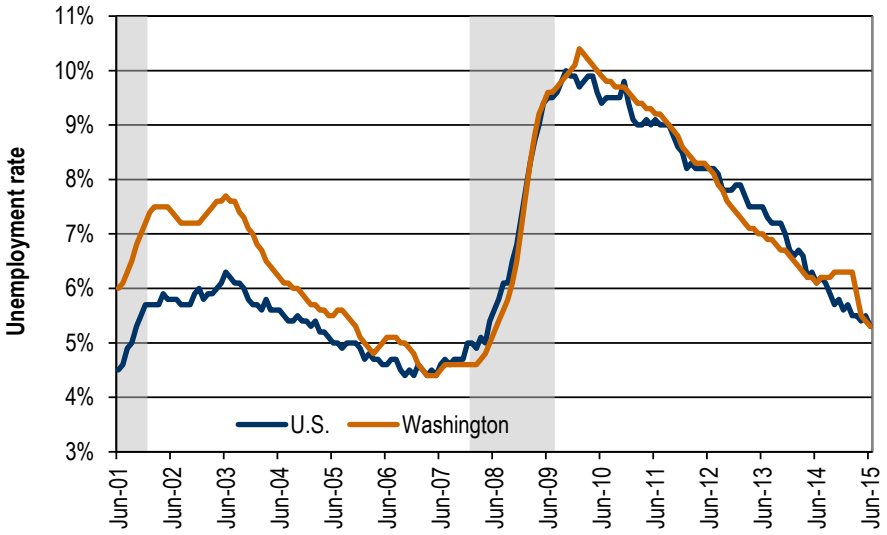
U.S. recessions are shaded in gray.

Employment is growing, with the Seattle-Bellevue-Everett Metropolitan Division area continuing to lead the way.

Washington state and U.S. unemployment rates converged

Washington state's unemployment rate has tracked more closely with the national unemployment rate during and after the recent recession (*Figure 2-13*). Strong employment growth within the state relative to national employment growth prior to the recession allowed the respective unemployment rates to converge. The two rates largely remained close together, with Washington and the U.S both having an unemployment rate of 5.3 percent in June 2015. The downward motion of Wasington's unemployment rate during the recovery period briefly stalled during the second half of 2014. The state experienced a larger degree of labor force expansion relative to job growth during that time as more job seekers entered the labor market.

Figure 2-13. Monthly seasonally adjusted annualized unemployment rates
United States and Washington state, June 2001 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



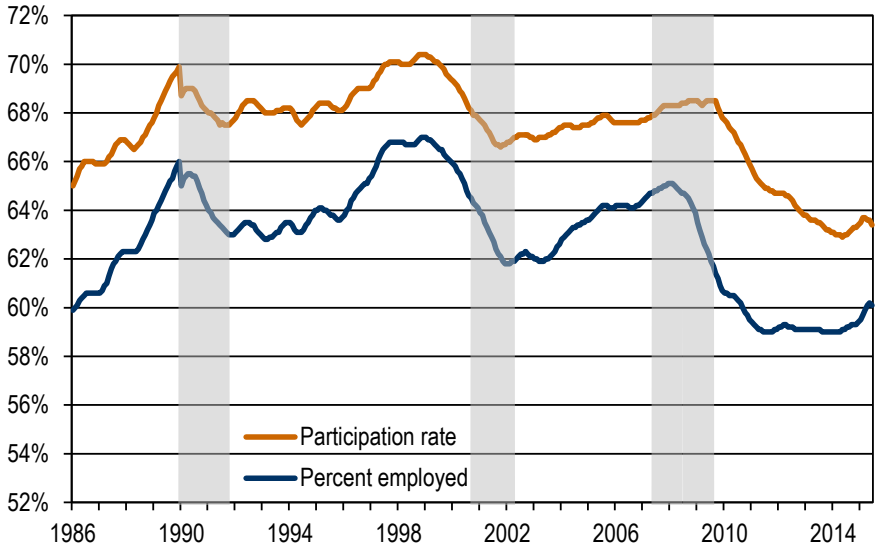
U.S. recessions are shaded in gray.

The Washington state unemployment rate has tracked closely with the national rate since the recession began, although some separation occurred in 2014.

Washington's employment growth during the recovery has about been on par with the U.S. rate of growth over the same period so that the decline in the respective unemployment rates have followed a similar pattern. As such, the rate of decline in the Washington state unemployment rate since the recession owes a lot to the decline that has been taking place in the state's labor force participation rate (*Figure 2-14*).

Although the longer-term trend is being driven by demographic and structural forces, more recently robust job growth has been instrumental in halting the decline for now. As the recovery/expansion has ensued, and as the economy moves further toward what is seen as full employment, more job seekers see fit to re-enter the labor market to search for jobs. This has the effect of raising the participation rate. As the job growth continues and the seekers become employed, the employment-to-population ratio strengthens and turns upward. This positive movement correlates with the expansion phase of the business cycle, which also results in reducing the degree of cyclical unemployment and lowering the unemployment rate. These factors combined help generate a healthier labor market.

Figure 2-14. Labor force participation rate and employment-to-population ratio, seasonally adjusted annual rate
Washington state, January 1986 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



U.S. recessions are shaded in gray.

The labor force participation rate and the percent of the population employed have increased slightly going into 2015.

Chapter 3: Seasonal, structural and cyclical industry employment

The purpose of this chapter is to identify the most influential factors in employment trends for different industries in Washington state. The results are important for both a better understanding of current employment trends and for practical applications such as job placement, unemployment insurance and training programs. For instance, industries with high levels of seasonality experience significant variation in annual employment and short-term high job demand follows upon employment declines. For industries with high cyclical variation, periods of booming employment can be followed by periods of decline. Training programs should be developed in anticipation of such variation.

We have also analyzed the relations between industry and total state employment (*Appendix 2*). The results of this analysis can help in creating a better understanding of the key components of state employment trends.

Our analysis is based on historical employment data from January 1990 through December 2014.[14] The analysis splits industry employment trends between the following four components:[15]

1. **Seasonal**: regular and predictable employment changes that recur each calendar year, caused by seasonal factors, which can include natural factors (changes in weather), administrative measures (starting and ending of the school year) and social, cultural or religious traditions (fixed holidays such as New Year's Day).

2. **Cyclical**: employment changes attributed to the business cycle in general, specific events such as the housing bubble bursting in 2007, or regular variation in aerospace employment.

[14] Historical data for employment covered by the unemployment insurance system was categorized by NAICS (North American Industrial Classification System) code, at the 3-digit code level with some 4-digit level detail (aerospace product and parts manufacturing, ship and boat building, software publishers and wired and wireless telecommunications carriers). Private and public education services employment data were combined under the education and health services industry category. Private and public employment data were also combined under the postal services and boat-building industries. The remainder of public sector employment was aggregated and categorized by ownership (federal, state and local government). Three industries were excluded from the analysis due to data limitations and/or significant code changes: oil and gas extraction, rail transportation and internet publishing and broadcasting. To be consistent, the time series code change, which moved the major portion of private household data from NAICS 814 to social assistance (NAICS 624), was reversed. Altogether, the historical time series data included 97 industries and one series for total employment.

[15] This year we used significantly improved (advanced) models for decomposition of time series (see *Appendix 2* for more details). This new approach allows for the optimized selection of models for each individual series. As a result, the quality of initial decomposition to the trend, seasonal and irregular components improved significantly. Impact on seasonal factors and trend contributions for the majority of industries was limited, but the impact on cyclical contributions and consequently on the shares of trend and cyclical components of growth was significant.

3. **Trend**: shifts in long-term employment growth trends driven by fundamental structural change and productivity trends in industries, rather than the cyclical fluctuations in employment. Structural changes in employment can be initiated by productivity improvement, policy changes or permanent changes in resources, technology or society. Technological innovation has introduced entirely new industries and caused other industries to decline. In addition, it has reshaped the entire labor market through increased efficiencies, such as automated manufacturing, data collection and analysis and communications.

4. **Irregular**: employment changes driven by one-time events, such as a labor strike or destructive weather.

Seasonal industries

Based on an analysis of 97 industries in Washington state, 17 industries were identified as having high levels of seasonality, with a seasonal factor over 4 percent. Crop production, scenic and sightseeing transportation and support activities for agriculture and forestry were the most seasonal industries (*Figure 3-1*).

Figure 3-1. Industries with high levels of seasonality
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

NAICS	Industry	Seasonal factor
111	Crop production	38.1%
487	Scenic and sightseeing transportation	17.7%
115	Support activities for agriculture and forestry	15.1%
237	Heavy and civil engineering construction	9.2%
711	Performing arts, spectator sports, and related industries	9.1%
213	Support activities for mining	8.9%
114	Fishing, hunting and trapping	8.2%
525	Funds, trusts and other financial vehicles	6.9%
721	Accommodation	5.8%
611	Educational services	5.0%
311	Food manufacturing	4.9%
448	Clothing and Clothing accessories stores	4.7%
713	Amusement, gambling and recreation industries	4.6%
312	Beverage and tobacco product manufacturing	4.5%
512	Motion picture and sound recording industries	4.4%
519	Other information services	4.4%
492	Couriers and messengers	4.3%

Crop production, scenic and sightseeing transportation and support activities for agriculture and forestry have continued to be the industries with the highest degree of seasonality in Washington state.

Structural and cyclical industries

There were 21 industries where the structural (trend) component accounted for at least two thirds of the change in employment (*Figure 3-2*). Ambulatory healthcare services, software publishers, and social assistance were the most highly influenced by the trend factor and consequently less by the cyclical factor.

Figure 3-2. Industries most influenced by structural factors
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

NAICS	Industry	Structural factor
621	Ambulatory healthcare services	82.1%
5112	Software publishers	79.1%
624	Social assistance	77.0%
722	Food services and drinking places	76.3%
611	Educational services	75.7%
453	Miscellaneous store retailers	75.7%
454	Nonstore retailers	74.9%
425	Wholesale electronic markets and agents and brokers	74.2%
622	Hospitals	72.8%
623	Nursing and residential care facilities	72.4%
532	Rental and leasing services	72.0%
903	Local government (other)	70.4%
238	Specialty trade contractors	69.5%
531	Real estate	69.1%
812	Personal and laundry services	68.8%
452	General merchandise stores	68.7%
323	Printing and related support activities	68.0%
331	Primary metal manufacturing	67.6%
491	Postal service	67.2%
236	Construction of buildings	67.2%
322	Paper manufacturing	66.5%

These Washington industries have been most influenced by structural factors such as technology changes, policy changes and changing demographics.

For 14 industries, the cyclical component accounted for more than half of the change in employment (*Figure 3-3*). Support activities for mining, scenic and sightseeing transportation, and crop production were the most highly influenced by the cyclical factor and consequently less by the structural (trend).

Figure 3-3. Industries most influenced by cyclical factors
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

NAICS	Industry	Cyclical factor
213	Support activities for mining	69.7%
487	Scenic and sightseeing transportation	67.0%
111	Crop production	63.2%
324	Petroleum and coal products manufacturing	61.0%
486	Pipeline transportation	58.7%
446	Health and personal care stores	57.2%
515	Broadcasting (except Internet)	56.8%
112	Animal production	56.6%
313	Textile mills	55.7%
443	Electronics and appliance stores	54.8%
316	Leather and allied product manufacturing	54.4%
518	Data processing, hosting and related services	53.4%
521	Monetary authorities-Central Bank	52.6%
902	State government (other)	52.2%

These Washington industries have been most sensitive to cyclical movements and have exhibited shifts of relatively rapid employment growth and decline.

See *Appendix 2* for a description of the statistical methodology used to categorize and measure the major factors behind employment change by industries and *Appendix figure A2-2* with the full results of these analyses.

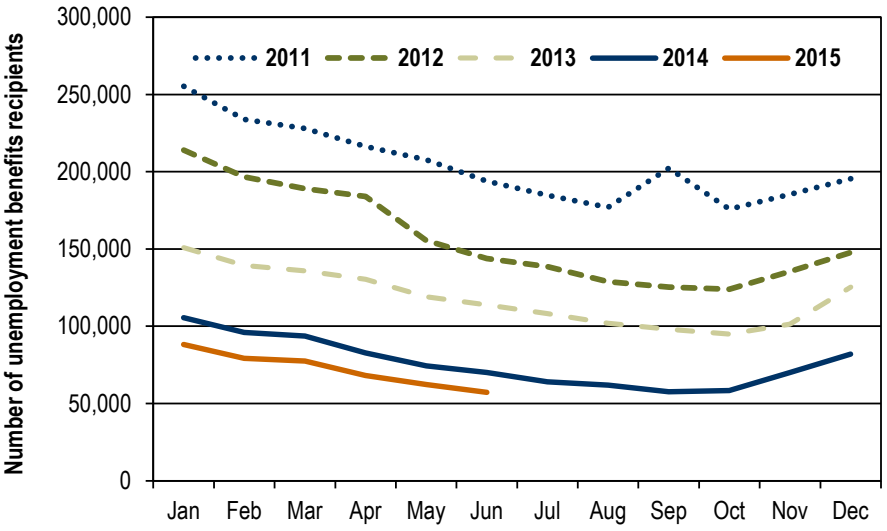
Chapter 4: Unemployment

This chapter discusses three important indicators of Washington's labor market: unemployment benefits, the unemployment rate and mass layoffs.

Unemployment benefits

The number of people receiving unemployment benefits has been declining over the last several years. Since reaching a peak of over 300,000 in January 2010, the number of beneficiaries has decreased by 81 percent to just over 57,000 in June 2015. *Figure 4-1* shows how the decline has taken place by month from January 2011 through June 2015. The drop in beneficiaries reflects factors including: individual beneficiaries finding jobs, fewer people being laid off and needing to apply for benefits and beneficiaries exhausting all of their unemployment benefits.

Figure 4-1. Unemployment benefits recipients by month, all benefits[16]
Washington state, January 2011 through June 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



The number of people receiving unemployment benefits has been steadily declining since January 2011.

[16] All benefit programs include regular, emergency unemployment compensation (EUC) and extended benefits (EB).

Duration of unemployment benefits

Typically, workers covered by unemployment insurance can receive up to 26 weeks of regular unemployment benefits in a 52-week benefit year. The 52-week benefit year begins when an individual applies for unemployment benefits.

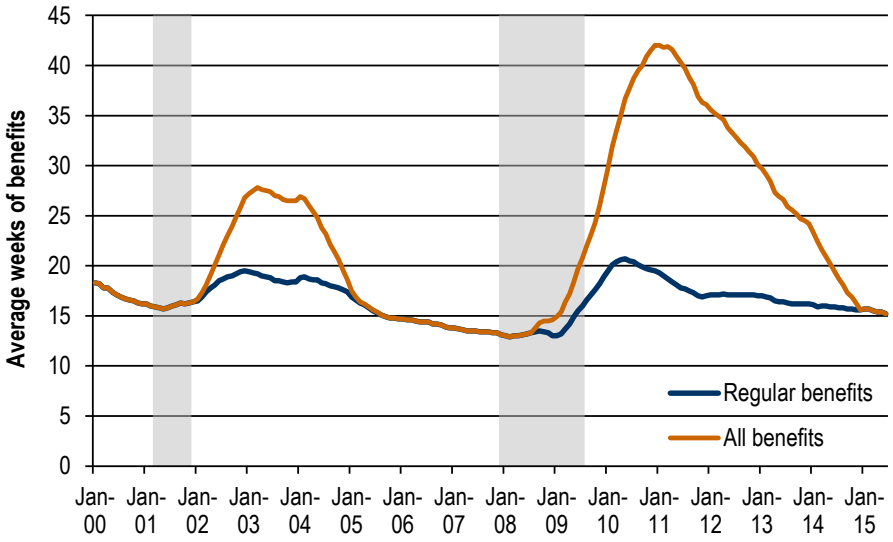
More weeks of unemployment benefits available after the recession

Because of the unusually steep loss of jobs during the Great Recession, additional weeks of federally funded unemployment benefits were made available to unemployed workers after they used all of their regular unemployment benefits. At one point, claimants could receive up to a total of 99 weeks of benefits – 26 weeks of regular benefits, 53 weeks of emergency unemployment compensation (EUC) benefits and 20 weeks of extended benefits (EB). Federal extensions have been phased out during the recovery. As of June 2015, claimants could receive up to 26 weeks of state benefits.

The impact of these additional weeks of benefits is evident in the average duration (number of weeks) of benefits received. *Figure 4-2* compares the average duration of benefits in Washington state for those who were receiving only regular benefits (up to 26 weeks) to the duration of *all benefits*, including the EUC and EB.

The annual average duration for regular benefits and all benefits peaked in 2010 at 20.7 weeks and 42.0 weeks, respectively. In 2011, average duration of regular benefits declined to 17.9 weeks and 39.5 weeks for all benefits. The average duration of regular benefits in 2014 was 15.8 and 19.2 weeks for all benefits. From January 2015 through June 2015 the average duration for both regular benefits and all benefits was 15.5 weeks.

Figure 4-2. Average duration of regular unemployment benefits compared to all benefits
Washington state, January 2000 through June 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



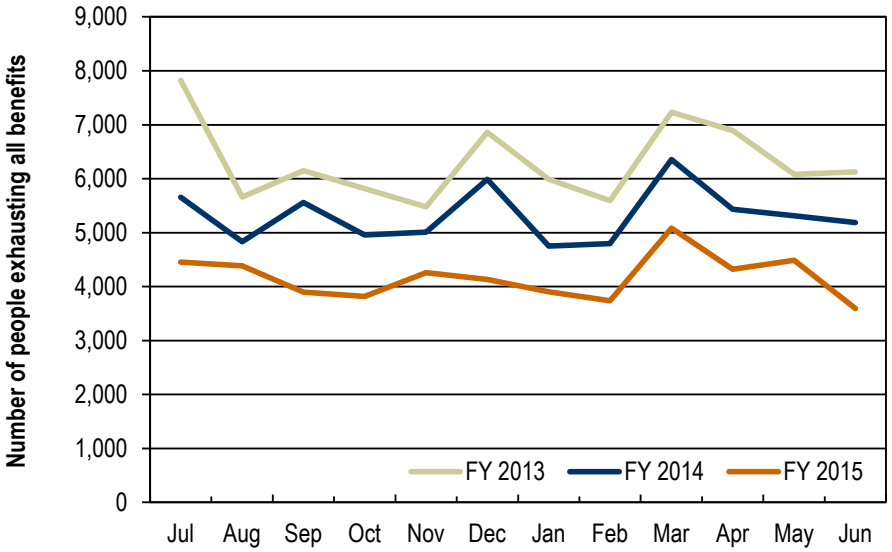
U.S. recessions are shaded in gray.

The number of weeks claimants received benefits has decreased from the post-recession peak.

More people have exhausted all benefits

Unemployed individuals exhaust their benefits when they have received all regular, EUC and EB available to them. *Figure 4-3* shows the monthly exhaustions for Washington unemployment benefits. The level of exhaustions have continued to decline since fiscal year (FY) 2013 (July 2012 through June 2013). At the beginning (and peak) of FY 2013, 7,824 individuals exhausted their benefits each month. By the end of FY 2015, that number had dropped to 3,593 people each month.

Figure 4-3. Monthly number of people exhausting all unemployment benefits
Washington state, FY 2013 through FY 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



In June 2015, 3,593 people exhausted all of their unemployment benefits.

Benefits exhaustion by industry, occupation and area

Higher levels of benefits exhaustion are generally associated with long-term unemployment. The following figures detail patterns of benefits exhaustion by industry, occupation and location.

Exhaustions by industry

Figure 4-4 presents exhaustions by industry for the 12 months ending in June 2015. To provide further context, the figure also includes each industry's percent of total covered employment and exhaustion-to-employment ratio.[17] The exhaustion-to-employment ratio can be used to identify industries characterized by long-term unemployment and that continue to struggle in their recovery from the recent recession. The larger the exhaustion-to-employment ratio, the more likely workers were to exhaust benefits.

From July 2014 through June 2015, workers in the healthcare and social assistance industry were most likely to exhaust unemployment benefits with an exhaustion-to-employment ratio of 7.6. Manufacturing and administrative and support and waste management and remediation services followed as second and third most likely to exhaust benefits (7.5 and 6.4, respectively).

[17] Covered employment is the number of workers employed by employers subject to Washington state's unemployment insurance taxes. The main exclusions are employment covered by the Railroad Retirement Act, self-employment and unpaid family workers.

The manufacturing industry accounted for the greatest portion of exhaustions at 11.4 percent. Construction had the second-largest portion of exhaustions at 11.3 percent followed by healthcare and social assistance at 9.9 percent.

Figure 4-4. Unemployment benefits exhaustion by industry, all benefits
Washington state, July 2014 through June 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse

NAICS	Industry	Annual exhaustions, all types of benefits	Percent of all exhaustions	Industry share of covered employment	Exhaustions-to-employment ratio
11	Agriculture, forestry, fishing and hunting	2,156	4.3%	3.3%	1.3
21	Mining	90	0.2%	0.1%	2.5
22	Utilities	54	0.1%	0.2%	0.7
23	Construction	5,665	11.3%	4.9%	2.3
31 - 33	Manufacturing	5,737	11.4%	1.5%	7.5
42	Wholesale trade	2,541	5.1%	9.4%	0.5
44 - 45	Trade	4,662	9.3%	8.1%	1.1
48 - 49	Transportation and warehousing	1,403	2.8%	2.9%	1.0
51	Information	1,673	3.3%	4.2%	0.8
52	Finance and insurance	1,759	3.5%	11.1%	0.3
53	Real estate, rental and leasing	978	2.0%	2.9%	0.7
54	Professional, scientific and technical services	3,292	6.6%	3.6%	1.8
55	Management of companies and enterprises	115	0.2%	3.0%	0.1
56	Admin. and support and waste mgmt. and remediation svcs.	4,844	9.7%	1.5%	6.4
61	Educational services	369	0.7%	5.8%	0.1
62	Healthcare and social assistance	4,965	9.9%	1.3%	7.6
71	Arts, entertainment and recreation	575	1.1%	4.9%	0.2
72	Accommodation and food services	2,393	4.8%	1.3%	3.8
81	Other Services	1,424	2.8%	12.9%	0.2
GOV	Government	3,002	6.0%	17.2%	0.3
	Unknown	2,426	4.8%	N/A	N/A
	Total	**50,123**	**100.0%**		

Healthcare and social assistance and manufacturing industry workers were most likely to exhaust unemployment benefits from July 2014 through June 2015 (7.6 and 7.5 exhaustion-to-employment ratio, respectively).

Exhaustions by occupation

Figure 4-5 examines unemployment benefit exhaustions by occupation. Office and administrative support, construction and management occupations combined for 38.6 percent of all exhaustions. Since total covered employment is reported only by industry and not by occupation, each occupation's percent of total covered employment and exhaustion-to-employment ratio were not available to be included in *Figure 4-5*.

Figure 4-5. Unemployment benefits exhaustion by major occupational groups, all types of benefits
Washington state, July 2014 through June 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse

SOC	Major occupational group	Annual exhaustions, all types of benefits	Percent of all exhaustions
43	Office and administrative support	7,290	14.5%
47	Construction and extraction	5,844	11.7%
11	Management	6,234	12.4%
51	Production	4,663	9.3%
41	Sales and related	3,856	7.7%
53	Transportation and material moving	3,133	6.3%
49	Installation, maintenance and repair	2,018	4.0%
13	Business and financial operations	1,980	4.0%
35	Food preparation and serving related	2,045	4.1%
45	Farming, fishing and forestry	2,201	4.4%
39	Personal care and service	1,573	3.1%
15	Computer and mathematical	1,641	3.3%
17	Architecture and engineering	1,024	2.0%
37	Building and grounds cleaning and maintenance	1,153	2.3%
31	Healthcare support	1,007	2.0%
29	Healthcare practitioners and technical	1,038	2.1%
27	Arts, design, entertainment, sports and media	902	1.8%
55	Military specific	60	0.1%
33	Protective service	601	1.2%
25	Education, training and library	527	1.1%
21	Community and social services	536	1.1%
19	Life, physical and social science	499	1.0%
23	Legal	298	0.6%
	Total	**50,123**	**100.0%**

Unemployed workers in office and administrative support, construction and management occupations accounted for more than one-third of all individuals to exhaust unemployment benefits from July 2014 through June 2015.

Exhaustions by workforce development area

Figure 4-6 shows exhaustions by workforce development area (WDA) for July 2014 through June 2015. The Seattle-King, Pierce and Snohomish WDAs are the largest in the state in terms of population and have had the largest numbers of unemployed workers throughout the recent recession and recovery. Collectively, they accounted for 47.0 percent of all exhaustions. The Seattle-King WDA had more than twice the number of exhaustions observed in either the Pierce or Snohomish WDAs. The lowest level of exhaustions occurred in the Eastern WDA.

Figure 4-6. Unemployment benefits exhaustion by workforce development area, all types of benefits
Washington state, July 2014 through June 2015
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse

Workforce development area	Annual exhaustions, all types of benefits	Percent of exhaustions
Seattle-King County	12,888	25.7%
Pierce County	5,867	11.7%
Snohomish County	4,816	9.6%
Out of state	4,456	8.9%
Pacific Mountain	3,427	6.8%
Spokane County	3,295	6.6%
South Central WA	3,004	6.0%
Southwest WA	2,881	5.7%
Northwest WA	2,497	5.0%
Benton-Franklin	2,124	4.2%
North Central WA	1,949	3.9%
Olympic	1,942	3.9%
Eastern WA	977	1.9%
Total	**50,123**	**100.0%**

Areas containing higher populations accounted for more exhaustions of unemployment benefits.

Unemployment rate

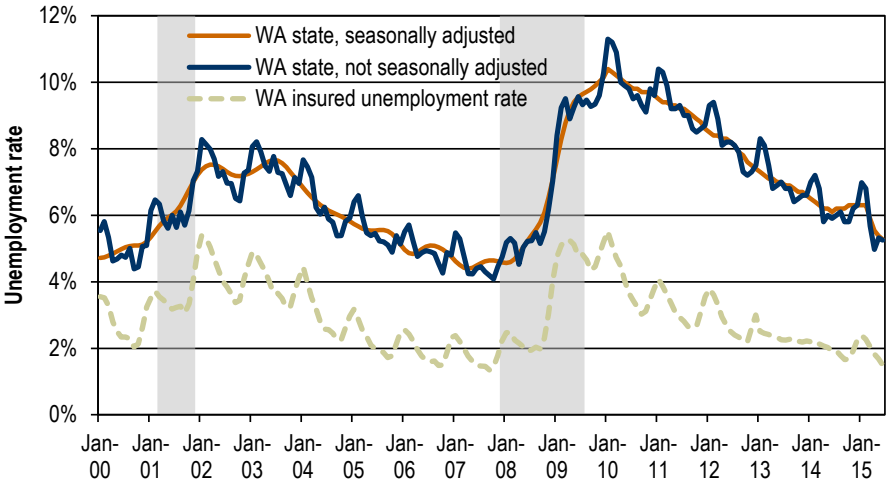
The overall unemployment rate is a ratio of the estimated number of unemployed individuals looking for work divided by the civilian labor force. The labor force is made up of individuals who are employed or who are actively seeking work. This is the most familiar unemployment rate and includes both workers covered by unemployment insurance and those who are not.[18]

[18] Covered employment is the number of workers by employers subject to Washington state unemployment insurance taxes. The main exclusions are employment covered by the Railroad Retirement Act, self-employment and unpaid family workers.

Particularly in the context of a discussion about unemployment benefits, the insured unemployment rate can be useful. The insured unemployment rate is a ratio of the number of insured unemployed (those drawing unemployment benefits) divided by the total number of individuals (working and not working) covered by unemployment insurance.

Figure 4-7 compares the overall and insured unemployment rates for Washington. The rates have basically moved in tandem, with the insured rate historically about half the overall unemployment rate. In late 2008, both measures of unemployment began a dramatic rise, with rates peaking in late 2010. However, since early 2009, the gap between the overall and insured unemployment rates widened. This means there were increasing numbers of unemployed workers not eligible for unemployment benefits.

Figure 4-7. Overall unemployment rate, seasonally and not seasonally adjusted, and insured unemployment rate
Washington state, January 2000 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



U.S. recessions are shaded in gray.

The gap between unemployed workers who are eligible for unemployment benefits and those who are not is greater than in previous recovery periods.

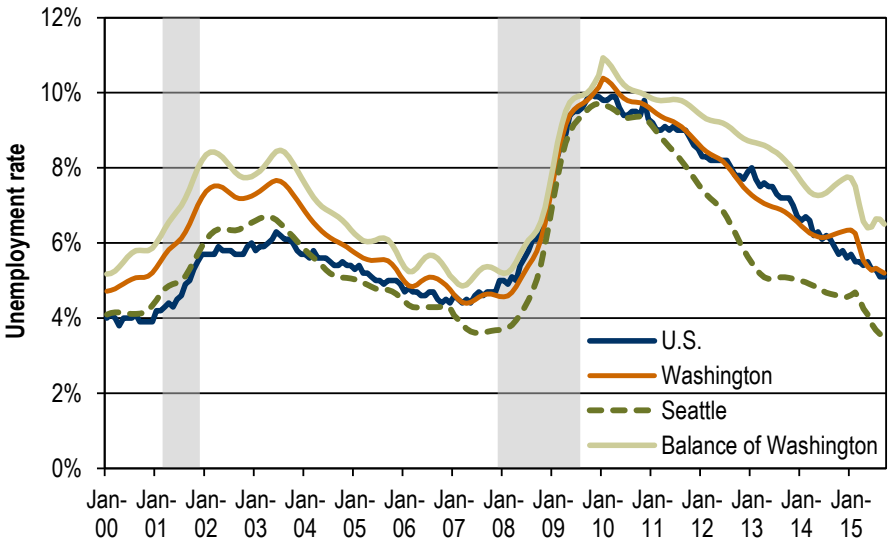
The overall unemployment rate

The overall unemployment rate is widely used in economic analysis as a lagging indicator of the direction of the economy. As noted previously, the unemployment rate is a ratio of the estimated number of unemployed who are seeking work, divided by the labor force. The labor force is limited to individuals who are employed or seeking work.

As shown in *Figure 4-8*, the state unemployment rate peaked in the first quarter of 2010. During most of 2010, 2011 and 2012, the unemployment rate for Washington state remained higher than the national rate. Starting in October 2012, the state unemployment rate fell below the national rate and remained below the national rate before falling in line with the nation in April 2014 at 6.2 percent. From that point on, the state unemployment rate mostly remained above the national rate. From June 2015, the state and national rates were in sync at 5.3 percent. From July 2012 through June 2015, the state and the national unemployment rate declined by 2.8 and 2.9 percentage points, respectively.

The Seattle-Bellevue-Everett Metropolitan Division (MD) has reported a lower unemployment rate than the rest of Washington and the nation since 2004. From July 2012 through June 2015, the unemployment rate for the MD declined by 2.8 percentage points. For comparison, the balance of the state declined by 2.7 percentage points over the same period. The national rate dropped by 2.9 percentage points.

Figure 4-8. Historical unemployment rates, seasonally adjusted
United States and Washington state, January 2000 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics; National Bureau of Economic Research



U.S. recessions are shaded in gray.

National and state unemployment rates tracked closely during the recent recession. From July 2012 through June 2015, the Seattle unemployment rate declined more rapidly than the state rate.

Other measures of employment and unemployment

Other measures of employment and unemployment include alternative unemployment rates, the labor force participation rate and employment rates.

Alternative unemployment rates

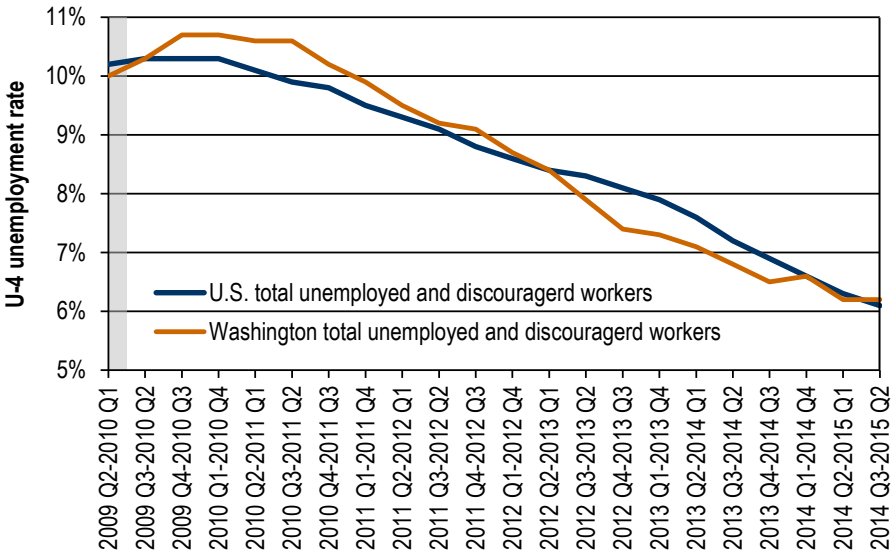
The U.S. Bureau of Labor Statistics (BLS) reports six alternative measures of labor underutilization, or unemployment. The commonly used definition of the unemployment rate, shown in *Figure 4-8*, is a ratio of the estimated number of unemployed who are seeking work, divided by the labor force. This is equivalent to what the BLS calls "U-3." A common criticism of the standard measurement of unemployment is that it is too narrow – for instance, it excludes individuals who are not working and would like to work, but have given up looking for work.

In response to criticism, the BLS has made available alternative measurements that are progressively more inclusive than the commonly reported unemployment rate. The standard measurement (U-3) along with two of the six alternative measurements, are defined as:

- U-3 – Unemployed as a percent of the labor force.
- U-4 – Unemployed plus discouraged workers, as a percent of the labor force plus discouraged workers.[18]
- U-6 – Unemployed plus all marginally attached workers and employees working part time for economic reasons, all as a percent of the labor force plus all marginally attached workers.

The U-4 measure rose faster and remained higher in Washington state than for the country as a whole during the recent recession (*Figure 4-9*). During the recession the U-4 measure for Washington reached a peak of 10.7 percent compared to a peak of 10.3 percent for the nation. The Washington U-4 rate is now 6.2 percent and the U.S. rate is 6.1 percent for the period third quarter 2014 through second quarter 2015.

Figure 4-9. U-4 unemployment rate (includes discouraged workers), four-quarter moving average
United States and Washington state, second quarter 2009 through third quarter 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



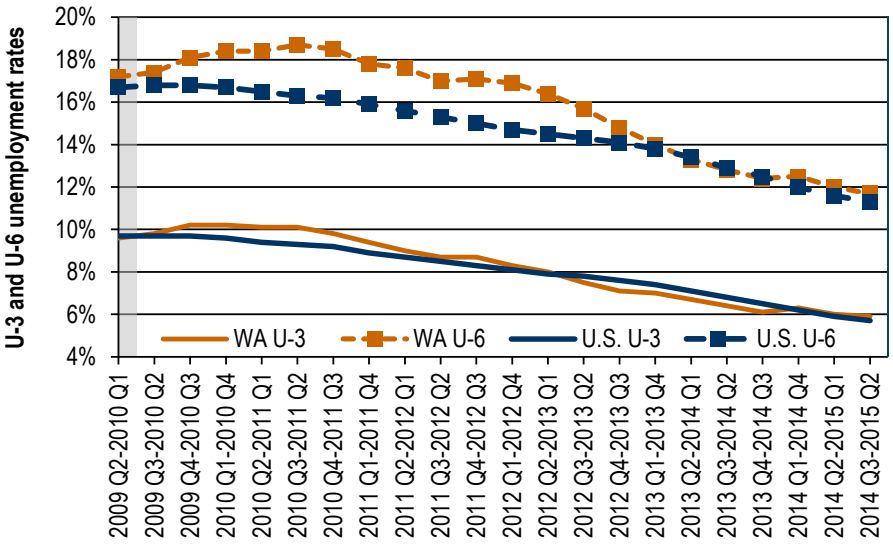
U.S. recessions are shaded in gray.

The U-4 measure of unemployment has been declining throughout the recovery. Washington state's U-4 is currently 6.2 percent and the U.S. is at 6.1 percent.

[19] Discouraged workers have given a job-market related reason for not currently looking for work.

U-6 is the broadest measure of unemployment. The gap between the U-6 and U-3 rates has narrowed to its lowest level since the first quarter of 2010. This demonstrates a decrease in the ranks of discouraged workers, marginally attached workers and those working part time involuntarily even more dramatically than the number of unemployed (*Figure 4-10*). Washington's U-6 four-quarter moving average remained higher than the nation's from the second quarter of 2009 until the second quarter of 2013. Most recently, Washington U-6 unemployment rate is 0.1 percent points above the national rolling average from third quarter of 2014 through second quarter of 2015.

Figure 4-10. U-3 (standard) and U-6 (includes marginally attached workers and those working part time involuntarily) unemployment rates, four-quarter moving average
United States and Washington state, second quarter 2009 through second quarter 2015
Source: U.S. Bureau of Labor Statistics, Current Population Survey,
Local Area Unemployment Statistics



U.S. recessions are shaded in gray.

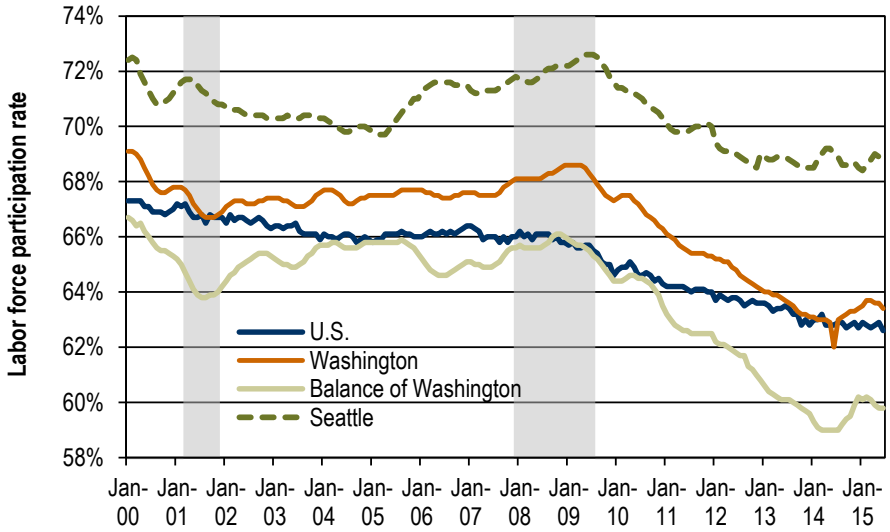
The most broadly defined U-6 measure of unemployment for Washington is at the same level as the national rolling average.

Labor force participation rate

The labor force participation rate (LFPR) is the ratio of the labor force divided by the total non-institutionalized, civilian population aged 16 and older. A higher participation rate means that a larger percent of a given population is either working or seeking work. A decline could be caused by increasing numbers of people going back to school, people migrating out of state or an increase in retirements.

Since the end of the 2001 recession, both the Washington state and the Seattle area labor force participation rates have been higher than the U.S. rate. Historically, the Seattle area labor force participation rate has always had a higher labor force participation rate than the state and nation. The average U.S. seasonally adjusted labor participation rate from July 2009 through June 2015 was 63.8 percent. During this time, the state averaged 64.9 percent, Seattle averaged 69.6 percent and the balance of the state averaged 61.7 percent (*Figure 4-11*).

Figure 4-11. Labor force participation rate, seasonally adjusted
United States and Washington state, January 2000 through June 2015
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics



U.S. recessions are shaded in gray.

Labor force participation rates have all been on the decline since the recent recession; especially outside of the Seattle-Bellevue-Everett MD, but small signs of improvement have appeared.

Mass layoff and dislocated workers reports discontinued

The Mass Layoff Statistics (MLS) program was a federal-state cooperative program that collected data on mass layoffs for establishments having at least 50 initial unemployment claims within a five-week period. The program was used to help identify distressed areas and distressed industries in the state. It was also used as a resource to help identify areas and industries with dislocated workers following plant closures or mass layoffs.

In 2013 as part of federal spending cuts (commonly referred to as "sequestration"), the Bureau of Labor Statistics (BLS) eliminated the MLS program. The last published data for Washington state covered first quarter 2013. Consequently we are unable to provide more current data on dislocated workers, mass layoffs and plant closures in this publication.

Chapter 5: Employment projections

This chapter provides information on the Employment Security Department's short-, medium- and long-term industry and occupational employment projections.[20] New to the employment projections chapter this year are two topics: the Occupations in Demand list and skills projections.

Industry and occupational employment projections provide a general outlook for Washington state. They are used by policymakers, job seekers, training providers, economic analysts and others. While the projections may not provide a complete picture of Washington's future labor market, they do provide a reasonably plausible view about Washington industry and occupational employment in the future.

We first produce industry forecasts for 2-, 5- and 10-year time periods. The occupational staffing pattern for each industry is used to convert industry projections into occupational projections. Occupational projections show how many job openings are expected due to overall growth as well as replacement or churn. Total openings from occupational projections do not represent total demand, but can be used as an indicator of demand.

The base period for short-term projections is second quarter 2014 and the base period for medium- and long-term projections is 2013.[21]

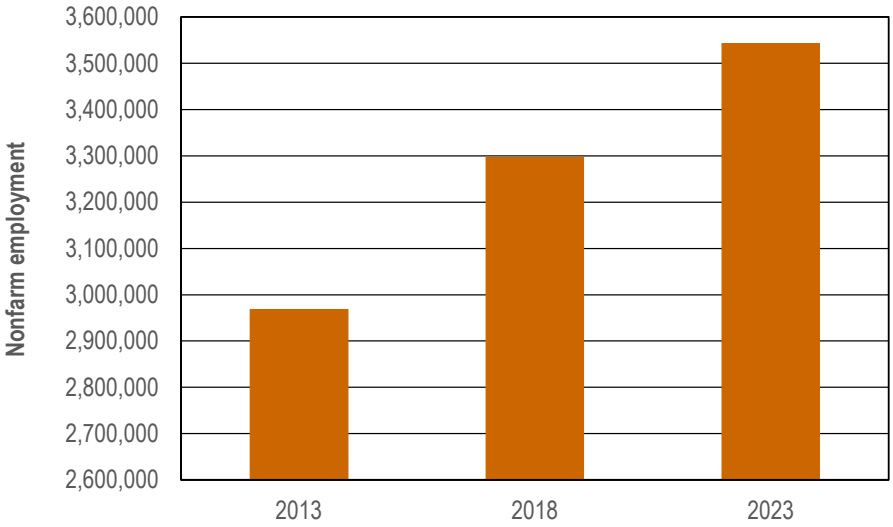
[20] More detailed information can be found in the 2015 Employment Projections report at: https://fortress.wa.gov/esd/employmentdata/docs/industry-reports/employment-projections-2015.pdf.

[21] Due to some differences in non-covered employment (which is used for benchmarking) and the way non-economic code changes are handled, the base numbers used for projections could be slightly different from those published in the Current Employment Statistics (CES) estimates.

Industry employment projections

Total nonfarm industry employment in Washington state is projected to reach about 3.30 million jobs by 2018 and about 3.54 million jobs by 2023 (*Figure 5-1*).

Figure 5-1. Base and projected nonfarm industry employment
Washington state, 2013, 2018 and 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics



Nonfarm employment in Washington is expected to reach 3.30 million jobs by 2018 and 3.54 million jobs by 2023.

Washington state is projected to have an estimated 328,900 net new nonfarm jobs from 2013 to 2018 with an average annual growth rate of 2.1 percent. This growth rate is larger than the growth rate of 2.0 percent projected for the state from 2012 to 2017. The state is projected to have an estimated 574,900 net new nonfarm jobs from 2013 to 2023 with an average annual growth rate of 1.8 percent. This growth rate is larger than the growth rate of 1.6 percent projected for the state from 2012 to 2022.

Figure 5-2 presents 2013 estimated employment, 2013, 2018 and 2023 employment shares and changes in employment shares from 2013 to 2018 and 2018 to 2023 by industry for Washington state.

By 2023, the three industry sectors with the largest increases in employment shares are projected to be professional and business services, health services and social assistance and construction.

For this same time period, the two industry sectors with the largest decreases in employment shares are projected to be manufacturing and state and local government (including education).

A notable code change occurred in this year's industry data. The U.S. Bureau of Labor Statistics moved employment out of the private household NAICS classification and into the individual and family services classification. This change increased total nonfarm employment, since private households are not included in total nonfarm employment numbers. The change occurred in the middle of 2013 and affected half of the year's individual and family services employment totals. As a result, it increased employment by an estimated 23,400. In 2014, the full effect of the code change was realized when the change increased individual and family services employment by an estimated 49,400.

For detailed industry projections, the code change was interpreted as a break in series and published data excluded it for the period of 2013 to 2018.[22] The published growth rate for the industry is 3.71 percent. If the code change was incorporated into the Industry Control Total (ICT) calculations, the average annual growth rate for individual and family services from 2013 to 2018 would have been 9.01 percent.

Unlike published ICT data, the code change was incorporated into published aggregated industry projections. This had a ripple effect up through higher employment data aggregation levels until it finally affected total nonfarm employment.

The employment increase change moved upwards through individual and family services, health services and social assistance, education and health services and finally into total nonfarm employment. *Figure 5-3* presents the effect of the code change on growth rates from 2013 to 2018. Without this code change, the estimated increase in employment shares from 2013 to 2018 for health services and social assistance would be just 0.22 percentage points, instead of 0.87 percentage points (shown in *Figure 5-2*).

[22] This reflects the fact that the occupational/industry staffing patterns for this round of projections reflected the old definitions of private households.

Figure 5-2. Base and projected nonfarm employment by industry
Washington state, 2013, 2018 and 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Industry sector*	Estimated employment 2013	Estimated share of employment in 2013	Projected share of employment in 2018	Projected share of employment in 2023	Percentage point change in employment share 2013 to 2018	Percentage point change in employment share 2018 to 2023	Percentage point change in employment share 2013 to 2023
Natural resources and mining	6,100	0.21%	0.19%	0.18%	-0.01%	-0.01%	-0.02%
Construction	149,000	5.02%	5.69%	5.85%	0.67%	0.16%	0.83%
Manufacturing	286,400	9.65%	8.94%	8.48%	-0.71%	-0.46%	-1.17%
Wholesale trade	127,200	4.28%	4.28%	4.21%	-0.01%	-0.07%	-0.08%
Retail trade	329,700	11.10%	10.94%	10.66%	-0.16%	-0.28%	-0.44%
Utilities	4,800	0.16%	0.15%	0.14%	-0.01%	-0.01%	-0.02%
Transportation and warehousing	89,200	3.00%	2.95%	2.86%	-0.06%	-0.08%	-0.14%
Information	106,200	3.58%	3.58%	3.64%	0.00%	0.06%	0.06%
Financial activities	150,600	5.07%	4.87%	4.74%	-0.21%	-0.13%	-0.33%
Professional and business services	361,000	12.16%	12.78%	13.56%	0.62%	0.78%	1.40%
Education services	51,900	1.75%	1.79%	1.83%	0.04%	0.05%	0.08%
Health services and social assistance	363,600	12.25%	13.12%	13.41%	0.87%	0.30%	1.17%
Leisure and hospitality	287,300	9.68%	9.58%	9.59%	-0.09%	0.01%	-0.08%
Other services	111,400	3.75%	3.69%	3.68%	-0.06%	-0.02%	-0.08%
Federal government	71,600	2.41%	2.13%	1.97%	-0.28%	-0.16%	-0.44%
State and local government (including education)	473,000	15.93%	15.33%	15.19%	-0.60%	-0.14%	-0.74%

*The sectors presented in the table are based on Current Employment Statitstics (CES) definitions.

The largest growth sectors are projected for professional and business services, health services and social assistance and construction. However, the growth in health services and social assistance from 2013 to 2018 is overstated due to a code change.

Figure 5-3. Estimated impact on growth rates of code change from personal household to individual and family services
Washington state, 2013 to 2018
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Industry sector	Growth rate without code change 2013 to 2018	Growth rate with code change 2013 to 2018
Education and health services*	2.37%	3.42%
Health services and social assistance	2.34%	3.45%
Total nonfarm	**1.97%**	**2.12%**

*CES category not shown in *Figure 5-2*.

The BLS code change artificially increased the total nonfarm growth rate by 0.15 percentage points.

Historical and projected growth rates

Figure 5-4 shows the historical and projected growth rates for the state and Washington's 12 workforce development areas (WDAs).

The largest positive difference between historical growth rates and projected growth rates is in the Eastern Washington WDA. For this area, the difference between the historical and projected rates is 1.19 percent. The Olympic Consortium was a close second with a difference of 1.14 percent. Benton-Franklin's projected growth rate of 1.86 percent just edged out the previous 10 years' growth rate of 1.85 percent.

The only area where projected growth is less than the previous 10 years is in the Snohomish County WDA.

Figure 5-4. Historical and projected total employment growth
Washington state and workforce development areas, 1990 to 2013 and 2013 to 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Workforce development area	Historical growth rate[1] 2003 to 2013	Projected growth rate 2013 to 2023	Historical trend growth[2] 1990 to 2013
Olympic Consortium	0.29%	1.43%	1.16%
Pacific Mountain	0.56%	1.64%	1.28%
Northwest	0.92%	1.69%	1.83%
Snohomish County	2.49%	1.44%	2.06%
Seattle-King County	1.00%	1.94%	1.11%
Pierce County	1.10%	1.79%	1.67%
Southwest Washington	1.02%	1.96%	1.68%
North Central	0.94%	1.68%	1.27%
South Central	0.46%	1.58%	0.79%
Eastern Washington	0.39%	1.58%	1.02%
Benton-Franklin	1.85%	1.86%	2.16%
Spokane	0.62%	1.68%	1.29%
Statewide	**1.07%**	**1.79%**	**1.36%**

[1] Historical growth is based only on covered employment.
[2] Trend growth is defined as growth rate of linear trend line.

The Snohomish County WDA is the only area where the projected growth is less than the previous 10 years' growth.

Occupational projection results

Occupational projections represent total employment. Total employment includes nonfarm employment, private households, self-employment, agriculture, forestry and fishing.

The average annual growth rate for total employment is projected to be 1.99 percent from 2013 through 2018 and 1.44 percent from 2018 through 2023. The Employment Security Department predicted average annual growth rates for total employment growth of 1.94 percent from 2012 through 2017 and 1.27 percent from 2017 through 2022.

The detailed state-level occupational projections cover 813 occupations, 804 of which are publishable. This publication, however, provides only a summary of the top occupations. For a complete list of occupations and projected employment, see the 2015 Employment Projections data files available at: https://fortress.wa.gov/esd/employmentdata/reports-publications/occupational-reports/employment-projections.

Figure 5-5 shows occupational employment estimates and employment shares for Washington state.

At the state level, two occupational groups stand out with increases in employment shares from 2013 to 2023. Construction and extraction occupations are projected to increase employment shares from 5.11 percent to 5.77 percent for an increase of 0.66 percentage points. The next highest increase in shares is projected for computer and mathematical occupations with an increase of 0.55 percentage points.

The largest decreases in employment shares at the state level are in production occupations, with a projected decrease of 0.36 percentage points and in sales and related occupations, with a projected decrease of 0.31 percentage points.

By 2023, the top three occupational groups for shares of employment are projected to be:

1. Office and administrative support occupations (12.39 percent)
2. Sales and related occupations (9.86 percent)
3. Food preparation and serving related occupations (7.41 percent)

By 2023, combined, these three major groups are projected to represent nearly 30 percent of total employment shares for the state.

Figure 5-5. Base and projected occupational employment
Washington state, 2013 to 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Occupational Employment Statistics

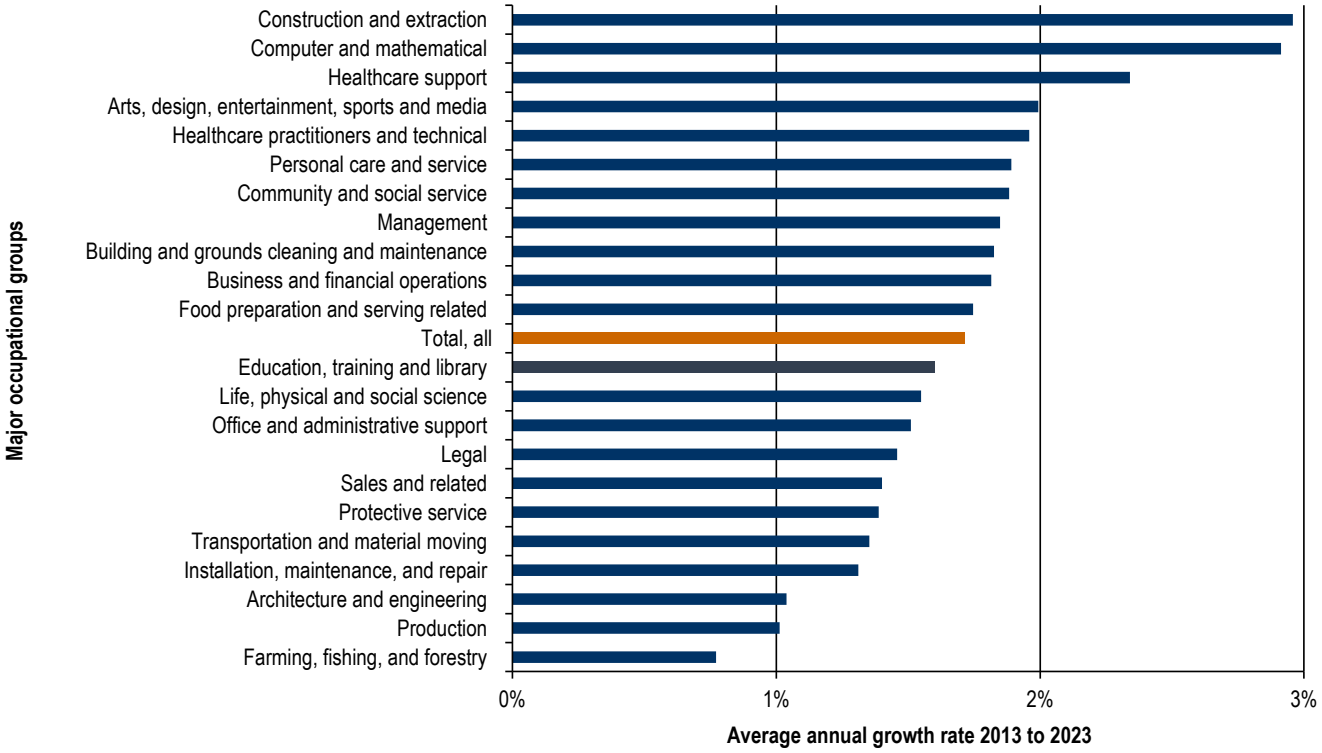
SOC	Major occupational group	Estimated employment 2013	Estimated employment shares 2013	Projected employment shares 2018	Projected employment shares 2023	Percentage point change in employment shares 2013 to 2018	Percentage point change in employment shares 2018 to 2023
11	Management	183,776	5.39%	5.42%	5.46%	0.04%	0.03%
13	Business and financial operations	201,178	5.90%	5.90%	5.95%	0.01%	0.05%
15	Computer and mathematical	150,917	4.42%	4.71%	4.97%	0.29%	0.26%
17	Architecture and engineering	80,926	2.37%	2.25%	2.22%	-0.12%	-0.03%
19	Life, physical and social sciences	36,119	1.06%	1.04%	1.04%	-0.02%	0.00%
21	Community and social services	56,260	1.65%	1.66%	1.68%	0.01%	0.02%
23	Legal	27,163	0.80%	0.78%	0.78%	-0.02%	0.00%
25	Education, training and library	203,157	5.95%	5.86%	5.89%	-0.09%	0.03%
27	Arts, design, entertainment, sports and media	68,736	2.01%	2.03%	2.07%	0.02%	0.04%
29	Healthcare practitioners and technical	159,756	4.68%	4.72%	4.79%	0.04%	0.08%
31	Healthcare support	84,102	2.46%	2.53%	2.62%	0.06%	0.09%
33	Protective service	59,977	1.76%	1.72%	1.70%	-0.04%	-0.01%
35	Food preparation and serving related	252,242	7.39%	7.38%	7.41%	-0.01%	0.03%
37	Building and grounds cleaning and maintenance	136,853	4.01%	4.03%	4.05%	0.02%	0.02%
39	Personal care and service	147,302	4.32%	4.34%	4.39%	0.02%	0.05%
41	Sales and related	347,164	10.17%	10.04%	9.86%	-0.13%	-0.18%
43	Office and administrative support	431,543	12.65%	12.50%	12.39%	-0.15%	-0.11%
45	Farming, fishing and forestry	92,496	2.71%	2.58%	2.47%	-0.13%	-0.11%
47	Construction and extraction	174,519	5.11%	5.67%	5.77%	0.55%	0.11%
49	Installation, maintenance and repair	123,158	3.61%	3.55%	3.47%	-0.06%	-0.08%
51	Production	183,304	5.37%	5.18%	5.01%	-0.20%	-0.16%
53	Transportation and material moving	211,822	6.21%	6.12%	5.99%	-0.09%	-0.13%

Over the 2013 to 2023 period, the largest increases in employment shares are expected for the construction and extraction and computer and mathematical occupations.

The projected average annual growth rates for the major occupational groups in Washington state are presented in *Figure 5-6*.

Construction and extraction occupations (2.96 percent), computer and mathematical occupations (2.91 percent) and healthcare support occupations (2.34 percent) are projected to grow faster than other occupational groups from 2013 to 2023. In the long term, only one occupational group is projected to fall below a 1 percent average annual growth rate: farming, fishing and forestry (0.77 percent).

Figure 5-6. Projected average annual growth rates for major occupational groups
Washington state, 2013 to 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Occupational Employment Statistics



Construction and extraction occupations, computer and mathematical and healthcare support occupations are projected to experience the largest growth rates to 2023 (2.96, 2.91 and 2.34 percent, respectively).

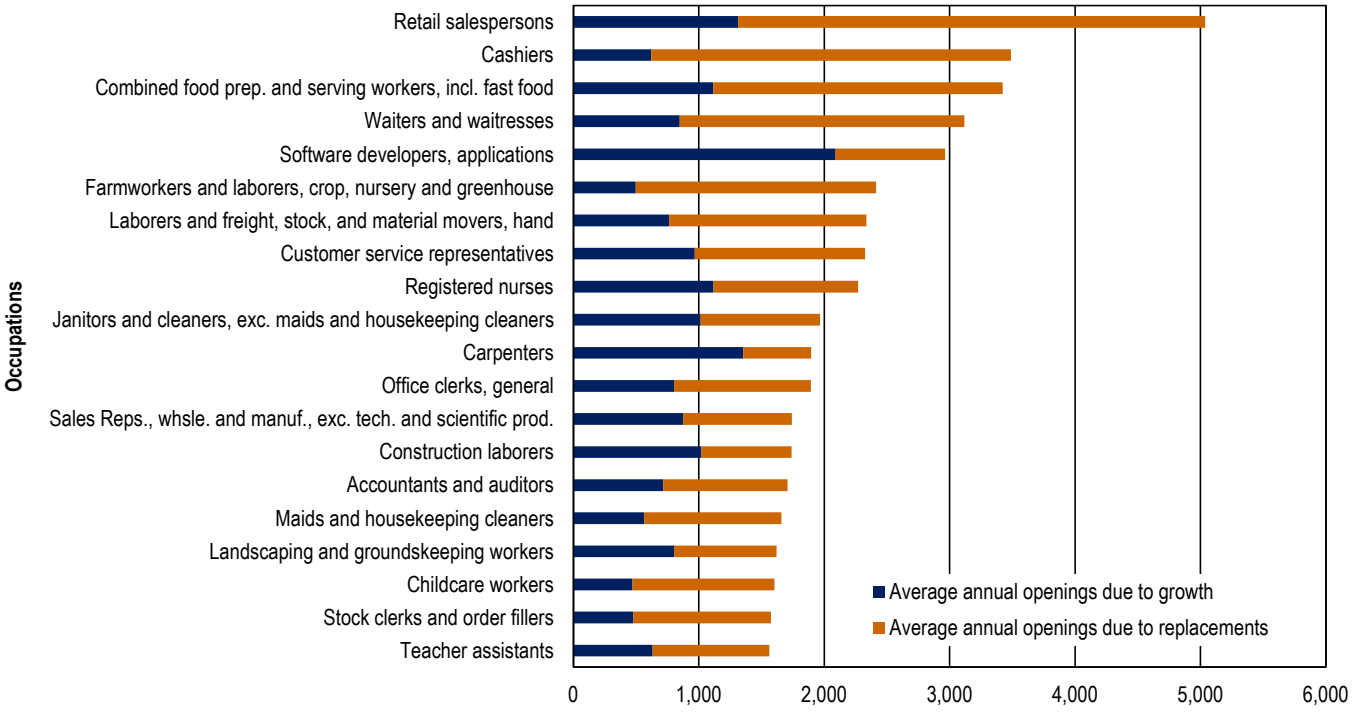
Projections for specific occupations

The top 20 specific occupations by total openings are presented in *Figure 5-7*. At the detailed occupational level (six-digit SOC), the retail salespersons occupation is projected to have the largest number of total openings. Openings can be due to net replacement (workers must exit an occupation entirely in order to create a net replacement need) or due to growth (a newly created position). On average at the state level, the total number of openings due to replacement is about 1.35 times greater than the number of openings due to growth.

The number of openings due to job growth is greater than the number of openings due to replacement in five of the top 20 occupations:

- Software developers, applications
- Carpenters
- Construction laborers
- Janitors and cleaners, except maids and housekeeping cleaners
- Sales representatives, wholesale and manufacturing, except technical and scientific products

Figure 5-7. Top 20 specific occupations by average annual total openings
Washington state, 2013 to 2023
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Occupational Employment Statistics



The number of openings due to growth is greater than the number of openings due to replacement needs in five of the top 20 occupations.

Specific occupations by area

Tables showing projections for specific occupations by state and each workforce development area are available on Employment Security's website.[23]

Occupations in Demand list

Employment projections are the basis of the Occupations in Demand (OID) list covering Washington's 12 workforce development areas and the state as a whole. This list is used to determine eligibility for a variety of training and support programs, but was created to support the unemployment insurance Training Benefits Program.

The full OID list is accessible through the "Learn about an occupation" tool located at: https://fortress.wa.gov/esd/employmentdata/reports-publications/occupational-reports/occupations-in-demand.

All occupations in the list have demand indication definitions. The definitions come in three forms: "in demand," "not in demand" or "balanced." These definitions indicate the probability of a job seeker gaining employment in a given occupation. The term "in demand" indicates a greater probability of gaining employment. "Not in demand" indicates a lesser probability and "balanced" indicates an uncertain probability between success and failure in gaining employment. The definitions are created through a four-step process as follows:

The data sources for the OID list:

The 2015 list is based on projections:

- Five-year projections from 2013 to 2018, using average annual growth rates and total job openings.
- 10-year projections from 2013 to 2023, using average annual growth rates and total job openings.
- A combination of two-year (second quarter 2014 to second quarter 2016) and 10-year (2013 to 2023) projections, using average annual growth rates and total job openings.

All of these time frames use unsuppressed occupations with employment in a base year (2013), consisting of 50 or more employees, for the state and WDAs.

[23] https://fortress.wa.gov/esd/employmentdata/docs/industry-reports/projections-appendix.xls.

In addition to projections, the OID list is created using supply and demand data:

- **Supply data –** average annual counts of WorkSource registered job seekers and unemployment claimants for WDAs for the most recent full year (April 2015 and the preceding 11 months).
- **Demand data –** average annual counts of job announcements from Help Wanted OnLine (HWOL) mid-monthly time series (April 2015 and the preceding 11 months).

Step one: Identify initial "in demand" and "not in demand" categories for each period.

- For each time frame, occupations with average annual growth rates of at least 90 percent of their respective geographic areas (statewide or WDA) total average annual growth rates and a share of total openings of at least .08 percent are defined as "in demand."
- Occupations with average annual growth rates less than 70 percent of their respective geographic areas total growth rates and a share of total openings of less than 1 percent are defined as "not in demand."

Step two: Identify provisional occupational categories.

- If within any of the three projection time frames (five-year, 10-year and two-/10-years combined), an occupation is categorized as being "in demand," it receives the first provisional identification as "in demand."
- If within any of the three projection time frames an occupation is categorized as "not in demand," it receives a second provisional identification of "not in demand."

Step three: Create final projections definitions.

- If an occupation has only one provisional definition, it equals the final projections definition.
- If an occupation has two provisional definitions of "in demand" and "not in demand," it gets identified as "balanced."
- All other occupations, without provisional definitions (i.e., not meeting the thresholds from step one), are identified as "balanced."

Step four: Create final adjustment definitions.

The projections definitions are now put through an adjustment process, using current labor market supply/demand data, which compares online job postings to information on unemployment claimants and WorkSource job seekers. An adjustment is applied when current supply/demand data significantly contradicts the model-based projections definitions.

The adjustment methodology:

- If the projections definition is "in demand" or "balanced" but the ratio of supply to demand is more than 2, then the adjusted definition is "not in demand."
- If the projections definition is "in demand" and the ratio of supply to demand is not larger than 2, but more than 1.5, then the adjusted definition is "balanced."
- If the projections definition is "not in demand" or "balanced," but the ratio of supply to demand is less than 0.5, then the adjusted definition is "in demand."
- If the projections definition is "not in demand" and the ratio is at least 0.5, but less than 0.75, then the adjusted definition is "balanced."
- If the number of new job announcements for a current month is at least 10 and supply data are not available, the adjusted definition is "in demand."

The final list: Local adjustments.

The Employment Security Department's Labor Market and Performance Analysis division uses the methodology outlined above to prepare the initial lists for the state as a whole and by WDA. Those lists are then given to local workforce development councils to review, adjust and approve based on their local, on-the-ground experience.

Skill projections

Our skill projections process is a new attempt to convert occupational projections into skill projections. We rely on the content of employers' job postings rather than the predefined, general O*NET skills. While the results of this attempt should be considered as preliminary, we believe that the attempt to use skills identified by employers in their job postings deserves some attention.

Data sources

The main source for this analysis was a download of the top 100 hard skills for each detailed (six-digit SOC) occupation for Washington state from WANTED Analytics. The downloaded files represent the extracted hard skills from online job announcements posted in the first four months of 2015 (January to April). Each skill is displayed with the number of job announcements from which it was extracted. This skill announcement(s) pairing permits every occupation to display the relative importance of each skill. Theoretically, each occupation could contain a vector of up to 100 components with announcement numbers indicating the relative importance of each skill. A skill drawn from a greater number of job announcements is relatively more important. A vector is a single entity (i.e., a column) consisting of an ordered collection of numbers. The number of job announcements is summed for each occupation. Only vectors with a summation value of at least five and not less than 1 percent of base-year employment were used. Some occupations contain very limited (if any) numbers of components and skills.

Each of the used vectors was normalized (i.e., scaled) to totals of one. With this type of normalization, we created skill–to-occupation matrices. These matrices were used to convert occupational estimations and projections into comparable numbers expressed as hard skills.

The skill matrices are similar in structure and function to normalized matrices used for occupational-industrial staffing patterns. The skill matrices were based on statewide data and were used to convert occupational projections for the state and all areas into skill projections. WANTED Analytics data includes duplicated job announcements. Normalization of the matrices eliminates these inflated totals, but bias is still possible.

After conversion, we deleted all records where estimated or projected employment numbers were below five since we consider estimations below five as unreliable. As a result of filtering out missing skill/occupation vectors and removing results below five, only a portion of the occupational employment estimates were converted into skills.

The converted portion (calculated on base year employment) varies between about 66 percent for Seattle-King County, 60 percent for the state, Snohomish County and Spokane WDAs, 58 percent for Pierce County and 56 percent for the Olympic Consortium, Pacific Mountain and Southwest Washington WDAs. The lowest portion of occupational employment converted to skills was for the North Central Washington WDA (just under 41 percent).

Some results

The skill-to-occupation matrices have different dimensions for the state's areas based on data availability. As a result, the largest number of detailed skills were 1,283 for Washington state, followed by King County at 1,273. The lowest number was for Eastern Washington at 645 skills.

The top three detailed hard skills, based on projected numbers of openings as well as available number of jobs were: food preparation, bilingual and quality assurance. It is no surprise these three skills are the same for all areas since the same statewide matrix was used for all areas. The top detailed hard skills were not the same when we increased the number to the top five. This is due to differences in occupational employment structure by area.

The numbers of total annual projected openings from 2013 to 2023 associated with these three skills for Washington state, in corresponding order, are 5,523, 4,088 and 3,204. Combined they represent 14.6 percent of total openings represented in the skill projections. However, the skills with the largest number of openings do not have high growth rates.

The fastest growth is projected for skills related to information technology (IT). The IT skills are very specific, vary from area to area and the majority, individually, are not large in terms of employment and job openings. The largest average annual growth rates from 2013 to 2023, are expected to be for Autodesk Maya, Object-oriented design and JavaScript. However, the combined totals for these three detailed occupations represented an insignificant share (just under 0.2 percent) of total openings represented in the skill projections.

The top 20 detailed skills for Washington state based on a combined rank of average annual openings and growth from 2013 to 2023 are presented in *Figure 5-8*.

Figure 5-8. Top 20 skills ranked by combined growth and openings
Washington state, 2013 to 2023
Source: Employment Security Department/LMPA; WANTED Analytics

Combined rank	Hard skill titles	Estimated hard skill employment numbers 2013	Projected hard skill employment numbers 2023	Average annual growth rate 2013 to 2023	Total average annual openings 2013 to 2023
1	C-sharp	4,111	5,482	2.92%	222
2	JavaScript	2,898	3,916	3.05%	155
3	Java	8,058	10,512	2.69%	408
4	C/C++	3,345	4,428	2.84%	171
5	Amazon Web Services	2,106	2,833	3.01%	109
6	Distributed system	2,267	3,045	3.00%	117
7	Systems Development LifeCycle	3,084	4,078	2.83%	160
8	Object-oriented design	1,474	2,017	3.19%	80
9	Linux	5,280	6,853	2.64%	256
10	Cascading Style Sheets	2,151	2,874	2.94%	117
11	Microsoft SQL Server	2,934	3,877	2.83%	156
12	Microsoft .NET Framework	1,897	2,542	2.97%	105
13	Software development	15,129	19,151	2.39%	712
14	Relational Database Management System	1,993	2,644	2.87%	104
15	Ruby	1,524	2,058	3.05%	80
16	Autodesk Maya	926	1,278	3.28%	61
17	Python	4,211	5,429	2.57%	205
18	Extensible markup language	1,685	2,240	2.88%	90
19	Adobe LifeCycle ES	2,075	2,740	2.82%	107
20	Hypertext markup language	3,220	4,172	2.62%	165

All of the top 20 skills are related to information technology.

The top 20 occupations still represented just slightly over 4 percent of total openings represented in the skills forecast. All of them are related to information technology (IT).

In the entire list of skills, some skills are quite general and represent a significant share of total numbers and openings. Examples are the top three skills based on openings: food preparation, bilingual and quality assurance. The majority of the skills, especially related to IT and high-tech, are very specific and their numbers are dispersed among all occupations. As a result, such detailed skills normally do not represent a significant share of the total numbers.

Results change significantly if we group all detailed skills together, based on their primary fields. This type of grouping is quite challenging since a significant number of skills are a combination of specific fields and IT skills. A good example of this is the grouping of CAD software with the field of architectural drawing.

In the skills forecast, by far the largest group of skills are IT related. They represent almost one-third of estimated skill numbers and openings. With the exclusion of an insignificant number of skills related to art, the IT group is projected to be the fastest growing with an average annual growth rate of 2.02 percent. The second largest group of skills is related to healthcare, which accounts for almost 11 percent of all skill numbers and openings. This group has the third largest projected growth rate of 1.91 percent, just slightly lower than IT and construction-related skills. Construction accounts for only about 1.5 percent of all skill numbers and openings. The third largest group of skills is related to quality control and lean manufacturing principles. The third largest group accounts for about 8 percent of all skill numbers and openings, but is projected to have a below average annual growth rate of 1.6 percent. The average growth rate for all skill numbers is 1.77 percent.

It is interesting to note that out of a total of 384 occupations, IT skills are present in 362 occupations. For 202 of these occupations, IT skills comprise more than one quarter of total numbers and for 98 more, they comprise one-half of total numbers.

The IT skills naturally dominated shares in computer-related occupations, but also have a very high share in occupations whose primary occupational focus is not computers. The top 10 occupations with high computer skill requirements, based on IT shares (with IT skill numbers more than 100) are presented in *Figure 5-9*.

Figure 5-9. Occupations, not primarily computer related, with the largest shares of computer skill requirements
Washington state, 2013 occupational estimations (2015 first quarter skills/occupations matrices)
Source: Employment Security Department/LMPA; WANTED Analytics

SOC	Title	Share of skills that are IT
271025	Interior designers	91.6%
193011	Economists	87.7%
171011	Architects, except landscape and naval	85.3%
173011	Architectural and civil drafters	82.5%
271014	Multimedia artists and animators	82.1%
131111	Management analysts	79.8%
271021	Commercial and industrial designers	77.8%
271024	Graphic designers	77.3%
152031	Operations research analysts	75.7%
131161	Market research analysts and marketing specialists	74.7%
132051	Financial analysts	73.2%
152041	Statisticians	73.2%
259031	Instructional coordinators	67.3%
131051	Cost estimators	66.4%
131151	Training and development specialists	65.9%

Information technology skills have a very high share in occupations whose primary focus is not computers.

Chapter 6: Income and wages

All income and wage data in this chapter have been adjusted for inflation to 2014 dollars. Data from last year's annual report will differ from figures for the same year in this year's report because of that adjustment.

Household[24] and family income

In 2008, Washington followed the rest of the nation into the deepest recession since the Great Depression of 1929. Employment levels declined throughout 2008 and 2009, reaching the lowest levels in 2010. The years since 2010 show recovery, with employment levels climbing and finally reaching statewide pre-recession levels in 2013.

As employment levels fell during the recession, real household incomes also fell. Unlike employment levels, which reached pre-recession peak levels in 2013, a wage recovery has only recently begun to materialize (*Figure 6-1*). According to the U.S. Census Bureau's American Community Survey (ACS), the real median household wage in Washington state declined each year since the depth of the recession in 2010. From 2010 to 2013, the median Washington household income fell by 1.7 percent. In 2014, household incomes began to rebound, expanding by 3.5 percent from 2013 to 2014. Nationally, the median household income declined through 2012 and began to recover in 2013; however, the recovery has been more modest by comparison. Non-family households saw overall greater declines in household incomes over the period 2010 to 2013 compared to family households; both types of households experienced increasing incomes in 2014.

Household income has five sources: earnings from wages, earnings from self-employment, investment income, transfer payments such as Social Security and private retirement payments.

[24] The U.S. Census Bureau divides households into two types. A family household contains at least two persons, and at least one other person in the household is related to the householder by birth, marriage or adoption. A non-family household may contain only one person or additional persons that are not related to the householder.

Figure 6-1. Median household income in 2014 dollars
United States and Washington state, 2010 through 2014
Source: U.S. Census Bureau, American Community Survey

Household type	2010	2011	2012	2013	2014	Change, 2010 to 2014
All households, U.S.	$53,836	$53,098	$52,586	$53,059	$53,657	-0.3%
All households, Washington	**$60,306**	**$59,747**	**$59,384**	**$59,308**	**$61,366**	**1.8%**
Family households	$73,045	$72,286	$72,029	$72,362	$74,193	1.6%
Non-family households	$38,180	$37,758	$37,348	$36,865	$38,127	-0.1%

Real median household incomes slid throughout the recession and began to recover in 2014.

The following information describes select housedhold statistics for Washington state from the ACS.

According to the ACS:

- The poverty rate for all individuals increased over the course of the recession and recovery period before finally declining in 2014. In 2014, 13.2 percent of all Washington residents fell under the poverty threshold.[25] Children tend to have the highest poverty rates. In 2014, 19.3 percent of children under age 5 residing in Washington state were living under the poverty threshold, not significantly different from 2013.
- The share of households with earnings from a job and the average household earnings from holding a job did not change significantly in 2014 and remained below 2010 levels. Households (78.6 percent) reported having earnings in 2014. Average earnings for those households with job-related income in 2014 did increase by $1,863 (2.3 percent).
- The proportion of the workforce that reported working in full-time jobs (35 or more hours per week) fell sharply during the recession and began to rebound in 2012. In 2014, the proportion of full-time jobholders rose by 0.5 percentage points over the previous year but at 57.6 percent remained 4 percentage points below the pre-recession level of 61.6 percent. The proportion of part-time workers rose somewhat during the depths of the recession and declined each year from 2012 to 2014.

[25] The U.S. government establishes a poverty threshold every year. The threshold varies based on family size and composition. In 2014, the threshold for a family of two adults and two children under age 18 was $24,008. Thresholds for other family sizes can be found at: www.census.gov/hhes/www/poverty/data/threshld/index.html.

- Median earnings for all workers in 2014 were $33,176. This estimate amounts to less than a $400 increase over the year and remains below the median observed in 2010 ($33,564). From 2013 to 2014, male full-time workers' earnings rose 1.7 percent from $54,453 to $55,385, while female full-time workers' wages dropped by 1.1 percent from $42,512 to $42,035. Both were about $1,000 below the 2010 medians.
- An estimated 5.9 percent of the workforce identified as primarily self-employed in 2013 and 2014; this is down from 6.3 percent observed in 2012 and much lower than the 7.2 percent from 2007, on the eve of the recession.
- The percentage of households with a Social Security beneficiary has been increasing over the past several years. It increased from 25.8 percent in 2010 to 28.5 percent in 2014; this comes as no surprise as the baby boomer generation has begun to enter retirement.
- The proportion of households receiving private pension payments increased slightly to 18.6 percent in 2014. Five years ago, 17.9 percent of households received private pensions. The increase is not surprising in light of aging demographics. The average monthly payout in 2014 was $2,057, compared to $1,987 in 2010.
- Just under 5 percent of households had members who received Supplemental Security Income (largely for people with disabilities), with an average payout of $792 per month—an amount that has remained virtually unchanged over the past five years.
- The share of households receiving welfare dropped from 4.0 percent in 2013 to 3.6 percent in 2014. The proportion of Washington households receiving welfare payments reached 4.6 percent in 2010—at the height of the jobs recession and has fallen since then. The average benefit fell to $230 per month in 2014. This is down from a monthly benefit of $353 in 2010.
- The share of households receiving food stamps has dropped from 15.1 percent in 2012 to 14.8 percent in 2013 and further to 14.1 percent in 2014.
- Health insurance coverage increased significantly in 2014. Compared to 2013, the proportion of Washington state residents without health insurance dropped from 14.0 percent to 9.2 percent—a decrease on the order of 318,327 residents. Private sector health insurance coverage increased from 68.5 percent to 70.3 percent in 2014 and the number of people relying on public health insurance rose from 17.5 percent to 20.5 percent.

- The homeownership rate continues to decline relative to pre-recession levels. In 2014, the homeownership rate was down to 61.7 percent, well below the pre-recession peak of 67.3 percent observed in 2006. The percent of households in economic distress due to high housing costs rose in the first few years of the recession, but then declined through the foreclosure process as homeowners transitioned to renters.
- The Federal Government considers any household paying more than 30 percent of its income towards housing costs to be under duress. The percentage of renters exceeding that threshold increased during the recession, reaching 51.1 percent in 2010. By 2014, that proportion was down to 50.0 percent—still a very high rate. Homeowners with a mortgage paying more than 30 percent of their income toward housing rose in the lead-up to the recession, exceeding 41 percent in 2008 and 2009. Over the course of the recovery, that proportion has shifted downward, in part due to foreclosures and short sales and the overall decline of home ownership. By 2014, the proportion was down to 31.7 percent.

Figure 6-2. Selected household statistics
Washington state, 2010 through 2014
Source: U.S. Census Bureau, American Community Survey

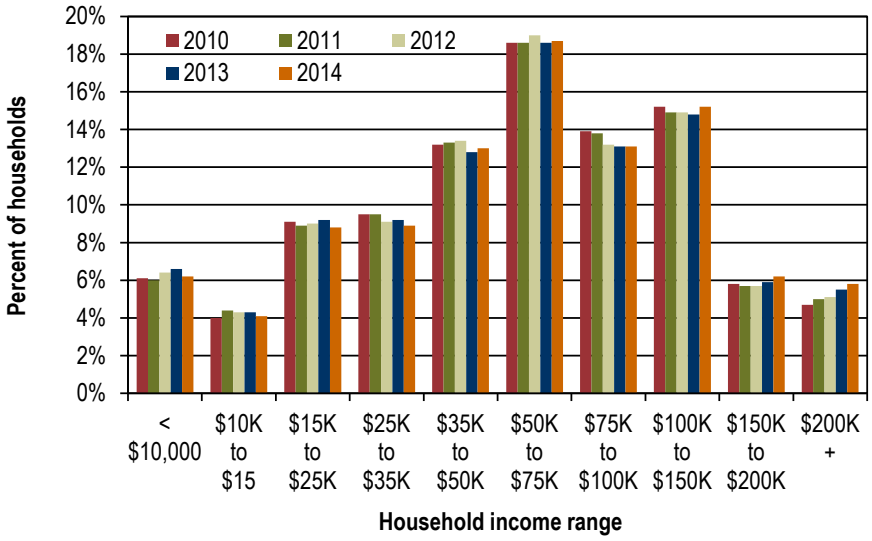
Household statistic	2010	2011	2012	2013	2014
Poverty rate, all individuals	13.4%	13.9%	13.5%	14.1%	13.2%
Poverty rate, children under 5	21.8%	20.4%	21.0%	19.1%	19.3%
Households with earnings from a job*	79.2%	79.0%	78.7%	78.5%	78.6%
Average household earnings from a job**	$77,198	$77,936	$79,085	$80,567	$82,430
Full-time workers, percent of population aged 16-64***	56.5%	55.7%	56.5%	57.1%	57.6%
Part-time workers, percent of population aged 16-64	19.8%	19.9%	19.5%	19.2%	19.1%
Median earnings for all workers	$33,564	$33,298	$32,804	$32,779	$33,176
Median earnings for full-time, year-round workers	$50,513	$50,669	$50,041	$50,370	$50,162
Median earnings for male full-time, year-round workers	$56,424	$57,002	$54,889	$54,453	$55,385
Median earnings for female full-time, year-round workers	$43,108	$42,890	$42,239	$42,512	$42,035
Percent of workers who are self-employed	6.2%	6.1%	6.3%	5.9%	5.9%
Households receiving Social Security	25.8%	26.9%	27.3%	28.1%	28.5%
Households receiving private pension payments	17.9%	17.7%	18.3%	18.2%	18.6%
Average monthly payout for households receiving private pensions	$1,987	$2,076	$2,020	$2,002	$2,057
Households receiving Supplemental Security Income (SSI)*	4.8%	4.8%	4.7%	4.6%	4.9%
Average monthly payout for those receiving SSI	$792	$773	$789	$796	$792
Households receiving welfare cash payments*	4.6%	4.3%	4.0%	4.0%	3.6%
Average monthly payout for welfare recipients	$353	$322	$287	$237	$230
Households receiving food stamps*	13.3%	14.5%	15.1%	14.8%	14.1%
Residents without health insurance	14.2%	14.2%	13.9%	14.0%	9.2%
Number of residents without health insurance	942,608	953,789	944,238	960,981	642,654
Residents with private health insurance	69.3%	68.8%	69.0%	68.5%	70.3%
Residents relying solely on public health insurance	16.5%	17.0%	17.1%	17.5%	20.5%
Renters paying more than 30 percent of income for housing	51.1%	50.7%	50.7%	50.9%	50.0%
Homeownership rate	63.1%	62.8%	62.3%	61.9%	61.7%
Homeowners with a mortgage paying more than 30 percent of income for housing	40.9%	39.4%	36.7%	34.3%	31.7%

*Households may fall into more than one of these categories.
**Includes earnings from all members in the household.
***Full-time workers usually worked at least 35 hours per week (but may not be year-round workers).

2014 marked a turning point for a number of metrics. The economic recovery is beginning to show up throughout the labor force.

During the depths of the recession and early recovery, households in lower income brackets increased as a share of total households, while households in middle and upper-middle income brackets decreased. Households at the very highest income brackets increased as a share of households. *Figure 6-3* shows the percentage of households with less than $25,000 in income climbed from 19.2 percent in 2010 to 20.1 percent in 2013. In 2014, the share of households at the lowest income brackets decreased for the first time since the recession to 19.1 percent. Households with incomes of $25,000 to $75,000 dropped from 41.3 percent in 2010 to 40.6 percent in 2013, with no change into 2014. The percentage with incomes of $75,000 and above fell from 39.6 percent in 2010 to 38.9 percent in 2012; climbing to 40.3 percent by 2014. Households earning more than $150,000 rose throughout the past five years.

Figure 6-3. Percent of households by income range, 2014 dollars
Washington state, 2010 through 2014
Source: U.S. Census Bureau, American Community Survey



2014 is the first year since 2010 that low income households did not expand proportionally.

Wages

Income includes money from a variety of sources and in the cases of families and households includes the contributions of more than one person. This section focuses on one source—and for many the most important source—of income: wages from a job. Even more specifically, it will analyze trends for those jobs covered by the Washington state unemployment insurance system.

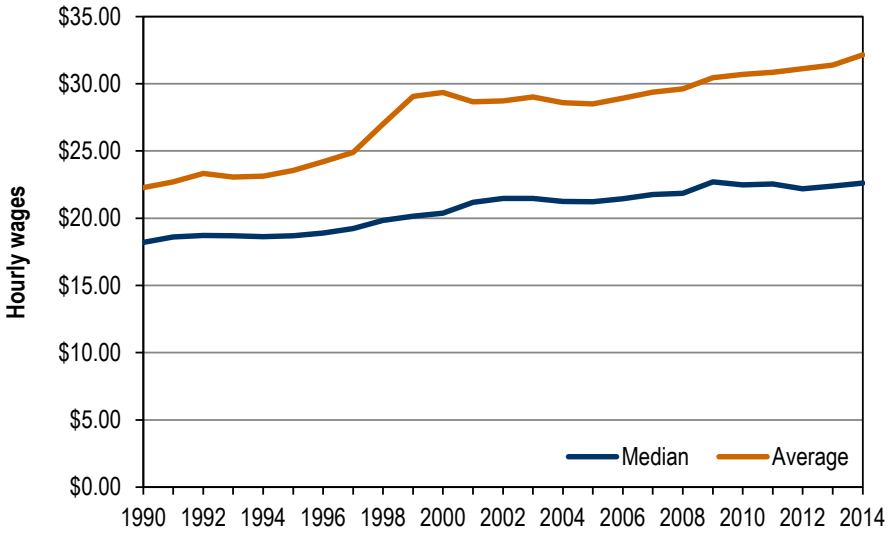
For Washington state, there was some good news on the wages front: in 2014, inflation-adjusted hourly wages in Washington increased across the board. The median hourly wage rose by 1.0 percent to $22.61 per hour. Despite the improvement, the median remained below its previous peak of $22.70 in 2009 (*Figure 6-4*). Wages for the lowest paid jobs went up by about 1 percent. At the upper end, the improvement was greater: 4.2 percent for the top 10 percent of jobs and 2.1 percent for the next highest 10 percent (*Figure 6-5*). The average hourly wage for all jobs increased by 2.5 percent, much more than the median. Thus while the wage picture brightened somewhat for most jobs, wage inequality increased. One way to quantify that inequality is to compare the average wage for the top 10 percent of jobs to the average wage for the lowest 10 percent of jobs. That ratio climbed from 10.6 in 2013 to 10.9 in 2014; it was only 7.6 back in 1990.[26]

Since 2002, the state has experienced an expansion, a deep recession and an uneven recovery. During the 2002 to 2007 expansion, wages were stagnant in the bottom half of the spectrum, with the median wage increasing by only 1.3 percent over a five-year period. Wage gains on the upper end were more robust, especially for jobs not quite at the top; the average wage for the second highest tier of jobs increased by 6.4 percent. The median wage jumped in 2008, but this was a perverse effect of the initial year of the recession—the first wave of job losses was concentrated in lower-wage jobs.

From a longer-term perspective, wages in the state have generally moved upward, but more so at the upper end. The median hourly wage increased by 5.3 percent from 2002 to 2014, though it has stagnated since 2009. Wages at the top grew much more rapidly, with the average wage for the top 10 percent of jobs climbing by 19.4 percent and the average for the next highest 10 percent rising by 17.7 percent. In contrast, wages for the second lowest job tier increased by 2.4 percent, roughly half the rate for the lowest 10 percent of jobs and for the median. This indicates that while the state's inflation-adjusted minimum wage has supported wages at the very bottom of the pay scale, it has put very little upward pressure on wages for the layer of jobs just above that minimum.

[26] The upper 10 percent paying jobs does not include many corporate officers (generally the highest paid employees) and wages do not include stock options or income from capital gains.

Figure 6-4. Median and average hourly wage, 2014 dollars
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; Unemployment Insurance Data Warehouse



The median hourly wage increased in 2014, but was still below its 2009 peak; the average hourly wage has increased at a faster rate, indicating growing wage inequality.

Figure 6-5. Measuring the wage gap, 2014 dollars
Washington state, 2009 through 2014
Source: Employment Security Department/LMPA; Unemployment Insurance Data Warehouse

Average wage for:	2009	2010	2011	2012	2013	2014	Percent change 2013 to 2014
Median hourly wage	$22.70	$22.48	$22.55	$22.19	$22.38	$22.61	1.0%
Average hourly wage for:							
Lowest paid 10 percent of jobs	$9.67	$9.59	$9.58	$9.52	$9.62	$9.71	0.9%
Second lowest 10 percent of jobs	$12.09	$11.89	$11.85	$11.70	$11.86	$12.03	1.5%
All jobs	$30.44	$30.70	$30.85	$31.13	$31.38	$32.16	2.5%
Second highest 10 percent of jobs	$47.31	$47.56	$47.84	$47.69	$48.39	$49.39	2.1%
Highest paid 10 percent of jobs	$93.69	$95.49	$97.96	$100.59	$101.67	$105.98	4.2%
Ratio of highest 10 to lowest 10	9.7	10.0	10.2	10.6	10.6	10.9	N/A
Ratio of highest 10 to median	4.1	4.2	4.3	4.5	4.5	4.7	N/A
Ratio of median to lowest 10	2.3	2.3	2.4	2.3	2.3	2.3	N/A

The gap between the highest and lowest paid jobs increased from 2013 to 2014.

For the state, 2014 was a good year for job growth. The total number of jobs covered by unemployment insurance (with the exclusions noted in *Figure 6-6*) increased by 2.8 percent. These are based on average monthly counts of jobs, with full-time and part-time work getting equal weight. When jobs were weighted by the number of hours worked (full-time equivalent, or FTE, jobs[27]), job growth was slightly less (2.7 percent), indicating that the number of part-time jobs grew faster than full-time jobs. In contrast, in the early years of the recovery in 2011 and 2012, FTE employment grew at a faster rate, indicating a shift towards more hours worked per job and more full-time jobs.

Figure 6-6. Covered employment vs. FTE employment, Federal employment, NAICS 814 and DSHS/COPES employment excluded
Washington state, 2007 through 2014
Source: Employment Security Department/LMPA; Unemployment Insurance Data Warehouse

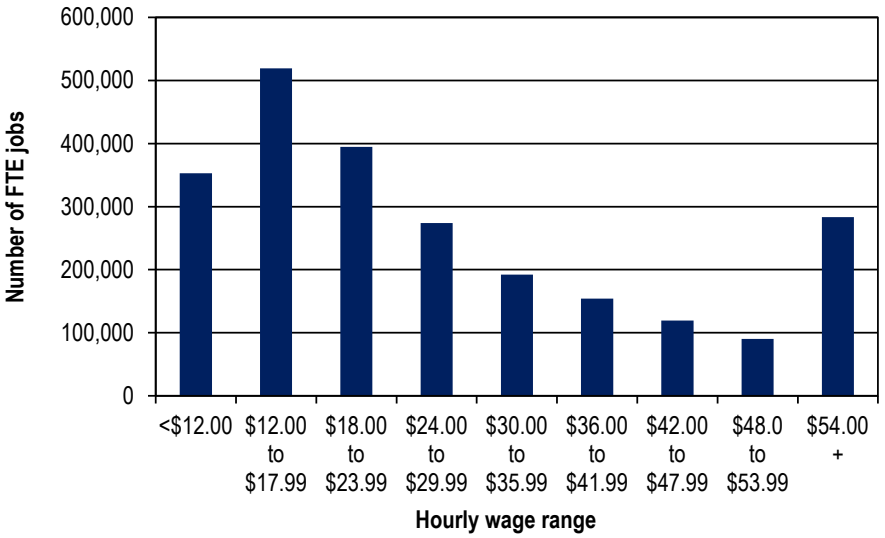
Year	Covered employment	Change from previous year	FTE employment	Change from previous year	Ratio of FTE to covered
2007	2,827,744	2.8%	2,308,624	3.8%	81.6%
2008	2,849,813	0.8%	2,323,601	0.6%	81.5%
2009	2,727,272	-4.3%	2,206,520	-5.0%	80.9%
2010	2,687,016	-1.5%	2,163,630	-1.9%	80.5%
2011	2,727,243	1.5%	2,214,158	2.3%	81.2%
2012	2,779,620	1.9%	2,264,864	2.3%	81.5%
2013	2,843,720	2.3%	2,317,115	2.3%	81.5%
2014	2,922,332	2.8%	2,380,299	2.7%	81.5%

FTE employment has consistently been about 81 percent of total covered employment.

[27] In this analysis, jobs are weighted by the number of hours worked, with one full-time equivalent (FTE) job equaling 2,080 hours of work in a typical year. A job that lasts 208 hours, for example, would be counted as 0.1 FTE.

Employment grouped by hourly wages paid in 2014 is shown in *Figure 6-7*, with the wage spectrum being divided into nine wage ranges; the first three wage ranges contain the majority of jobs: 14.8 percent paid below $12.00 per hour, 21.8 percent paid from $12.00 to $17.99 per hour and 16.6 percent paid from $18.00 to $23.99 per hour.

Figure 6-7. FTE jobs by hourly wage range, 2014 dollars
Washington state, 2014
Source: Employment Security Department/LMPA; Unemployment Insurance Data Warehouse



A majority of jobs on an FTE basis paid below $24.00 per hour.

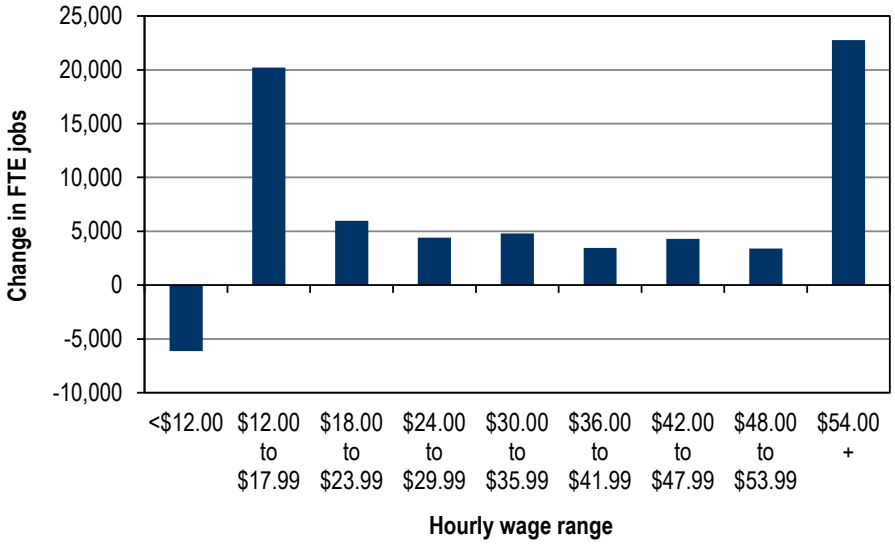
Job growth and percent change by hourly wage for 2014 in terms of total jobs added is shown in *Figures 6-8 and 6-9*. Overall, there was faster job growth in higher-wage categories in 2014.

- The number of jobs paying below $12.00 per hour declined (-6,138, -1.5 percent).
- There were more jobs paying $12.00 to $17.99 per hour.[28] While the numerical increase was large (20,205, almost a third of net new jobs for the year), the percent change was below average (a 2.1 percent increase in jobs in this wage range, versus 2.7 percent for all jobs).
- Some industry detail: the increase in the number of jobs paying $12.00 to $17.99 per hour was almost across the board. Almost every sector registered more of these jobs, led by agriculture (3,850), healthcare and social assistance (3,393), accommodations and food services (3,236) and retail trade (2,309). Three of these 4 are predominantly low-wage industries (healthcare being the exception).

[28] It is likely that there was some "bracket creep" of jobs migrating from just below to just above the $12.00 threshold.

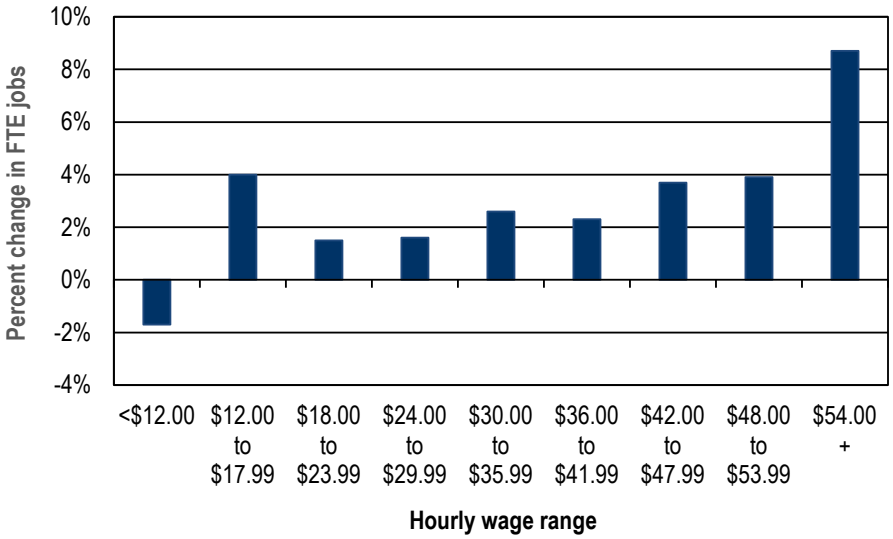
- Job gains were positive but below average in percentage increase in the next two wage ranges ($18.00 to $23.99 and $24.00 to $29.99 per hour) and positive and right around the average for the two wage ranges above that ($30.00 to $35.99 and $36.00 to $41.99 per hour).
- The three top wage ranges had more rapid growth rates, with the number of jobs paying $54.00 per hour and above increasing by 22,768 (8.7 percent).
- At the top of the wage distribution, jobs paying $54.00 or more also expanded in most industries, with aerospace (6,116), retail trade (2,887), software (2,203), local government (2,094) and computer systems design (1,407) leading the way.

Figure 6-8. Change in number of FTE jobs by hourly wage range, 2014 dollars
Washington state, 2013 to 2014
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



Job gains were largest in two wage ranges in 2014.

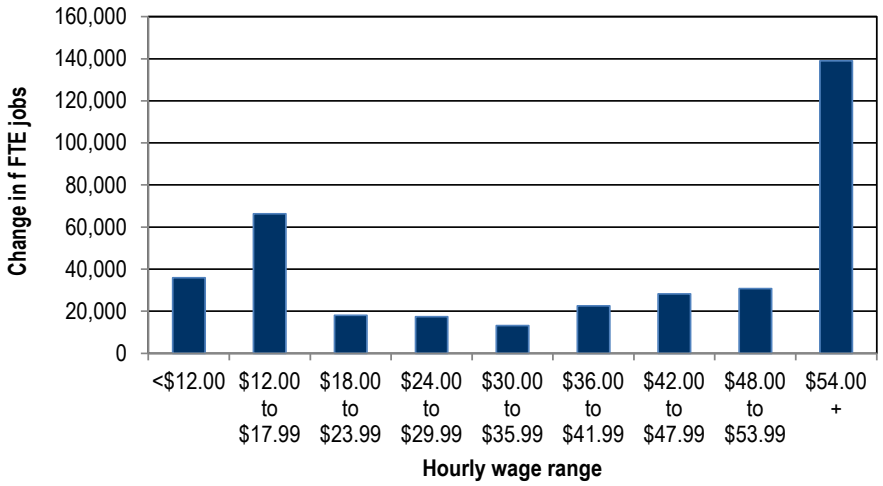
Figure 6-9. Percent change in FTE jobs by hourly wage range, 2014 dollars
Washington state, 2013 to 2014
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



Jobs grew the most at the upper end of the wage scale.

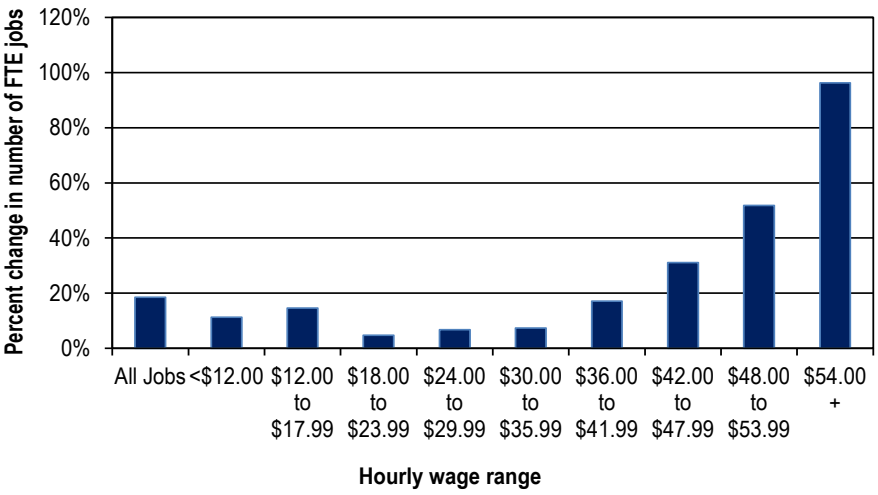
Shifting to a longer-term outlook, *Figures 6-10* and *6-11* show the total change and percentage change in jobs in the nine wage ranges going back to 2002. During that time, the number of high-wage jobs almost doubled. While many of these net new jobs were in industries well known for higher-wage jobs (software, healthcare, aerospace and computer systems design), retail trade, wholesale trade and local government were also major sources.

Figure 6-10. Change in FTE jobs by hourly wage range, 2014 dollars
Washington state, 2002 to 2014
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



Employment growth over the past dozen years was heavily weighted on the higher end of the wage scale.

Figure 6-11. Percentage change in FTE employment by hourly wage range, 2014 dollars
Washington state, 2002 to 2014
Source: Employment Security Department/LMPA, Unemployment Insurance Data Warehouse



The number of high-wage jobs almost doubled from 2002 to 2014.

In summary, wages improved in 2014 while wage inequality increased. The improvement was not enough to lift the median hourly wage above its previous peak. Job growth has been somewhat polarized in the recovery, with an increase in jobs at higher wage levels and at lower wages, but slower growth in the middle of the wage spectrum. Since 2002, the same has been true, with growth tilted towards the upper end.

Personal and per capita income[29]

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, Medicare and Medicaid, welfare, food stamps, Supplemental Security Income (SSI) and unemployment benefits. Per capita personal income is the total personal income of an area divided by the population of the area. Since per capita income is an average, it is influenced by factors such as relative concentration of high income households, family size and the number of retirees in an area.

Per capita income, as shown in *Figure 6-12*, dropped sharply in 2009, slid a bit more in 2010 and then started to recover in 2011 and reached a new high in 2012. Preliminary estimates showed a slight gain in 2013 (0.2 percent) which was revised to a loss of 0.9 percent, chiefly due to a decline in investment income. In 2014, per capita income was estimated at $49,610, up 3.1 percent from 2013 and the highest on record. Historically the state's income has been 5 to 8 percent above the U.S. and that was true again in 2014, when per capita income was 7.7 percent above the national figure.

Income changes had three primary components:

First, total ***earned income*** increased in 2014. After a big drop in 2009 and little improvement in 2010, income from wages and business ownership rose by 3.4 percent in 2011, 4.1 percent in 2012, 0.5 percent in 2013 and 4.3 percent in 2014. The reason for the aberration in 2013: a substantial increase in contributions to government social insurance programs, likely related to the implementation of the Affordable Care Act (ACA). These payments are netted out of gross earnings. On a per capita basis, the changes were 2.2, 2.9, -0.6 and 3.0 percent. Earned income accounted for 64 percent of total personal income in 2014. It has been a shrinking proportion of the total since 1999, when it was 69 percent. It will likely continue to ebb over the long term due to stagnant wages and the aging population.

[29] All data on personal and per capita income are produced by the U.S. Bureau of Economic Analysis; inflation adjustment provided by Employment Security Department/LMPA.

Investment income correlates with the stock market. It declined sharply in 2009 and tumbled further in 2010, roared back in 2011 and 2012 before declining slightly in 2013 and increasing moderately (2.7 percent) in 2014. The 2014 total was an all-time high, but was 6 percent below the 2008 peak on a per capita basis.

For almost two decades, total ***transfer payments*** had grown along with the economy, consistently comprising about 13 percent of personal income. With the onset of the recession, they played a countercyclical role, climbing by 12 percent in 2008, 13 percent in 2009 and 9 percent in 2010, when they made up 17 percent of total income. Social Security retirement payments, which had been trending upward by about 4 percent a year, jumped by 9 percent in 2009, as people were forced into early retirement.

During the recovery, transfer payments have stabilized, growing below trend in 2011 and 2012 as countercyclical payments like unemployment insurance and welfare abated and then returning to trend growth rates in 2013 and 2014. While Social Security retirement, Medicare and Medicaid payments have continued to expand, income maintenance programs (welfare, food stamps, energy assistance and a variety of other programs) have declined for four consecutive years, falling by a cumulative 15 percent. Unemployment benefits followed the same pattern, but with a much sharper decline of 76 percent.

Still, comparing 2008 with 2014, transfer payments are significantly higher in both dollar amounts and on a per capita basis, thanks to a huge jump in Medicaid payments for low-income residents in 2014 (part of the ACA).

Figure 6-12. Personal income including transfer payments, 2014 dollars
Washington state, 2007 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Economic Analysis

Type of income	2007	2008	2009	2010	2011	2012	2013	2014
Total personal income (billions)	**$310.9**	**$317.1**	**$306.4**	**$308.9**	**$319.2**	**$334.8**	**$335.4**	**$350.3**
Earned income	$202.6	$202.4	$195.9	$197.4	$204.2	$212.5	$213.5	$222.7
Investment income	$69.1	$71.0	$61.1	$57.8	$62.8	$70.9	$70.3	$72.1
Transfer payments	$39.1	$43.8	$49.4	$53.6	$52.2	$51.4	$51.6	$55.4
Social Security/retirement	$15.7	$16.2	$17.7	$18.2	$18.4	$19.3	$20.1	$20.7
Medicare and Medicaid	$15.1	$15.7	$16.9	$17.8	$18.3	$18.6	$18.7	$22.3
Welfare, food stamps, Social Security Income	$3.9	$4.3	$5.7	$6.3	$5.9	$5.6	$5.5	$5.3
Unemployment benefits	$0.9	$1.4	$4.1	$4.6	$3.3	$2.6	$1.8	$1.1
Per capita personal income (dollars)	**$48,113**	**$48,325**	**$45,951**	**$45,816**	**$46,785**	**$48,550**	**$48,101**	**$49,610**
Earned income	$31,360	$30,842	$29,387	$29,283	$29,932	$30,814	$30,621	$31,543
Investment income	$10,698	$10,814	$9,159	$8,576	$9,199	$10,282	$10,077	$10,217
Transfer payments	$6,054	$6,669	$7,404	$7,958	$7,654	$7,454	$7,404	$7,849
Social Security/retirement	$2,434	$2,469	$2,659	$2,699	$2,699	$2,801	$2,875	$2,934
Medicare and Medicaid	$2,339	$2,389	$2,528	$2,642	$2,676	$2,690	$2,689	$3,161
Welfare, food stamps, Supplemental Security Income	$596	$657	$861	$928	$866	$818	$786	$756
Unemployment benefits	$134	$208	$615	$685	$490	$371	$264	$159

Transfer payments, chiefly from government programs, grew during the recession and remained high in 2014 due primarily to a large increase in Medicaid, government provided healthcare for low-income residents.

Chapter 7: Economic comparisons with other states

Figure 7-1. States with minimum wage higher than federal minimum wage, based on 2015 ranking
United States and Washington state, 2005, 2010 and 2015
Source: U.S. Department of Labor, Wage and Hour Division

Rank	State	2005	2010	2015
	United States	**$5.15**	**$7.25**	**$7.25**
1	District of Columbia	$6.60	$8.25	$9.50
2	**Washington**	**$7.35**	**$8.55**	**$9.47**
3	Oregon	$7.25	$8.40	$9.25
4	Connecticut	$7.10	$8.25	$9.15
4	Vermont[1]	$7.00	$8.06	$9.15
6	California	$6.75	$8.00	$9.00
6	Massachusetts	$6.75	$8.00	$9.00
6	Rhode Island	$6.75	$7.40	$9.00
9	Alaska	$7.15	$7.75	$8.75
9	New York	$6.00	$7.25	$8.75
11	South Dakota	$5.15	$7.25	$8.50
12	New Jersey	$5.15	$7.25	$8.38
13	Illinois[2]	$6.50	$8.00	$8.25
13	Nevada	$5.15	$7.55	$8.25
15	Colorado	$5.15	$7.24	$8.23
16	Michigan[1]	$5.15	$7.40	$8.15
17	Ohio	$4.25	$7.30	$8.10
18	Arizona	N/A	$7.25	$8.05
18	Florida	N/A	$7.25	$8.05
18	Montana	$5.15	$7.25	$8.05

[1]Rates applicable to employers of two or more.
[2]Rates applicable to employers of four or more.
N/A = Wages not above federal minimum.

Minimum Wage

Unemployment Rates

Figure 7-2. Ten highest and lowest state unemployment rates, not seasonally adjusted, based on 2014 ranking
United States and Washington state, 2005, 2010 and 2014
Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics

Rank	State	2005	2010	2014
	United States	**5.1%**	**9.6%**	**6.2%**
1	North Dakota	3.4%	3.8%	2.8%
2	Nebraska	4.0%	4.8%	3.3%
3	South Dakota	4.3%	5.1%	3.4%
4	Utah	4.1%	8.2%	3.8%
5	Minnesota	3.9%	7.3%	4.1%
5	Vermont	3.5%	6.2%	4.1%
7	New Hampshire	3.7%	5.9%	4.3%
7	Wyoming	3.6%	6.6%	4.3%
9	Hawaii	2.9%	7.0%	4.4%
9	Iowa	4.5%	6.1%	4.4%
29	**Washington**	**5.6%**	**10.2%**	**6.2%**
42	Arizona	4.8%	10.4%	6.9%
42	Oregon	6.0%	11.0%	6.9%
44	Illinois	5.6%	10.2%	7.1%
45	Georgia	5.4%	10.7%	7.2%
46	Michigan	6.6%	12.2%	7.3%
47	California	5.3%	12.2%	7.5%
48	Rhode Island	5.2%	11.3%	7.7%
49	District of Columbia	6.2%	9.2%	7.8%
49	Mississippi	6.9%	10.9%	7.8%
49	Nevada	4.3%	14.4%	7.8%

Figure 7-3. Highest and lowest state average annual job-growth rates, nonfarm employment
United States and Washington state, 2000 to 2014
Source: U.S. Bureau of Labor Statistics, Current Employment Statistics

Rank	State	Average annual growth rate
	United States	**0.4%**
1	North Dakota	2.5%
2	Utah	1.5%
2	Texas	1.5%
4	Wyoming	1.4%
5	Alaska	1.3%
6	Nevada	1.2%
7	Idaho	1.1%
7	Montana	1.1%
7	District of Columbia	1.1%
10	Arizona	1.0%
11	Hawaii	0.9%
12	South Dakota	0.8%
12	**Washington**	**0.8%**
42	Rhode Island	0.0%
42	Alabama	0.0%
42	Missouri	0.0%
45	Indiana	-0.1%
45	New Jersey	-0.1%
45	Connecticut	-0.1%
48	Illinois	-0.2%
48	Mississippi	-0.2%
50	Ohio	-0.4%
51	Michigan	-0.8%

Nonfarm Employment

Annual Exports

Figure 7-4. Ten highest and lowest state annual exports, based on 2014 ranking
United States and Washington state, 2004, 2009 and 2014
Source: U.S. Department of Commerce, Office of Trade and Economic Analysis

Rank*	State	2004	2009	2014
1	Texas	$117,403,604,389	$162,994,740,450	$288,048,985,741
2	California	$110,143,572,288	$120,079,965,765	$173,811,625,400
3	**Washington**	**$29,609,580,934**	**$51,850,856,743**	**$90,547,036,334**
4	New York	$45,638,715,833	$58,743,030,056	$88,433,809,412
5	Illinois	$30,313,147,393	$41,626,110,699	$68,246,837,088
6	Louisiana	$19,920,266,993	$32,616,451,452	$64,813,659,468
7	Florida	$29,042,754,547	$46,888,006,761	$58,506,528,733
8	Michigan	$35,949,357,201	$32,655,333,884	$55,928,500,991
9	Ohio	$31,712,473,687	$34,104,484,238	$52,240,104,252
10	Pennsylvania	$18,539,007,484	$28,381,102,168	$40,354,943,154
42	New Hampshire	$2,293,358,077	$3,060,715,994	$4,226,842,551
43	New Mexico	$2,047,057,784	$1,269,535,234	$3,800,450,987
44	Vermont	$3,341,295,139	$3,219,270,656	$3,669,277,804
45	Maine	$2,431,795,269	$2,231,142,502	$2,711,573,626
46	Rhode Island	$1,288,873,391	$1,495,522,447	$2,388,748,799
47	Wyoming	$680,852,010	$926,141,589	$1,757,198,477
48	South Dakota	$830,561,103	$1,010,960,601	$1,593,697,270
49	Montana	$566,485,278	$1,053,312,395	$1,545,427,741
50	Hawaii	$411,579,020	$563,059,688	$1,447,123,737
51	District of Columbia	$1,163,851,736	$1,090,543,044	$938,111,309

*Annual exports represent the value of goods flowing through ports/terminals. These goods may originate from places other than the port state and thus export values do not necessarily reflect the health of the economy in the state where the port(s) are located.

Figure 7-5. Ten highest and lowest state per capita personal income, 2014 dollars, based on 2014 ranking
United States and Washington state, 2004 and 2014
Source: U.S. Bureau of Economic Analysis

Personal Income

Rank	State	2004	2014	Average annual growth rate
	United States	**$34,300**	**$46,129**	**3.0%**
1	District of Columbia	$51,688	$76,532	4.0%
2	Connecticut	$46,627	$62,467	3.0%
3	Massachusetts	$42,691	$59,182	3.3%
4	New Jersey	$43,072	$56,807	2.8%
5	New York	$39,331	$56,231	3.6%
6	Maryland	$41,807	$55,143	2.8%
7	North Dakota	$29,842	$54,951	6.3%
8	Wyoming	$35,656	$54,810	4.4%
9	New Hampshire	$38,223	$53,149	3.4%
10	Alaska	$35,717	$52,901	4.0%
13	**Washington**	**$36,689**	**$49,583**	**3.1%**
42	Arizona	$30,224	$37,895	2.3%
43	Utah	$27,532	$37,766	3.2%
44	Arkansas	$26,912	$37,751	3.4%
45	Kentucky	$28,097	$37,654	3.0%
46	New Mexico	$27,479	$37,605	3.2%
47	Idaho	$28,974	$37,533	2.6%
48	Alabama	$28,864	$37,493	2.7%
49	South Carolina	$28,062	$36,934	2.8%
50	West Virginia	$25,536	$36,644	3.7%
51	Mississippi	$25,271	$34,333	3.1%

Building Permits

Figure 7-6. Ten highest and lowest states in number of authorized privately owned building permits, based on 2006 ranking
United States and Washington state, 2006 and 2014
Source: U.S. Census Bureau

Rank	State	2006 building permits	2014 building permits	Percent change 2006 to 2014
	United States	**1,838,903**	**1,046,363**	**-43.1%**
1	Texas	216,642	166,982	-22.9%
2	Florida	203,238	84,075	-58.6%
3	California	160,502	83,645	-47.9%
4	Georgia	104,200	39,423	-62.2%
5	North Carolina	99,979	49,911	-50.1%
6	Arizona	65,363	26,997	-58.7%
7	Illinois	58,802	20,578	-65.0%
8	New York	54,382	36,286	-33.3%
9	South Carolina	50,776	27,537	-45.8%
10	**Washington**	**50,033**	**33,898**	**-32.2%**
42	New Hampshire	5,677	3,403	-40.1%
43	West Virginia	5,645	2,677	-52.6%
44	South Dakota	5,304	4,722	-11.0%
45	Montana	4,542	3,884	-14.5%
46	Wyoming	3,537	1,901	-46.3%
47	North Dakota	3,529	12,178	245.1%
48	Alaska	2,739	1,518	-44.6%
49	Vermont	2,626	1,546	-41.1%
50	Rhode Island	2,370	952	-59.8%
51	District of Columbia	2,105	4,189	99.0%

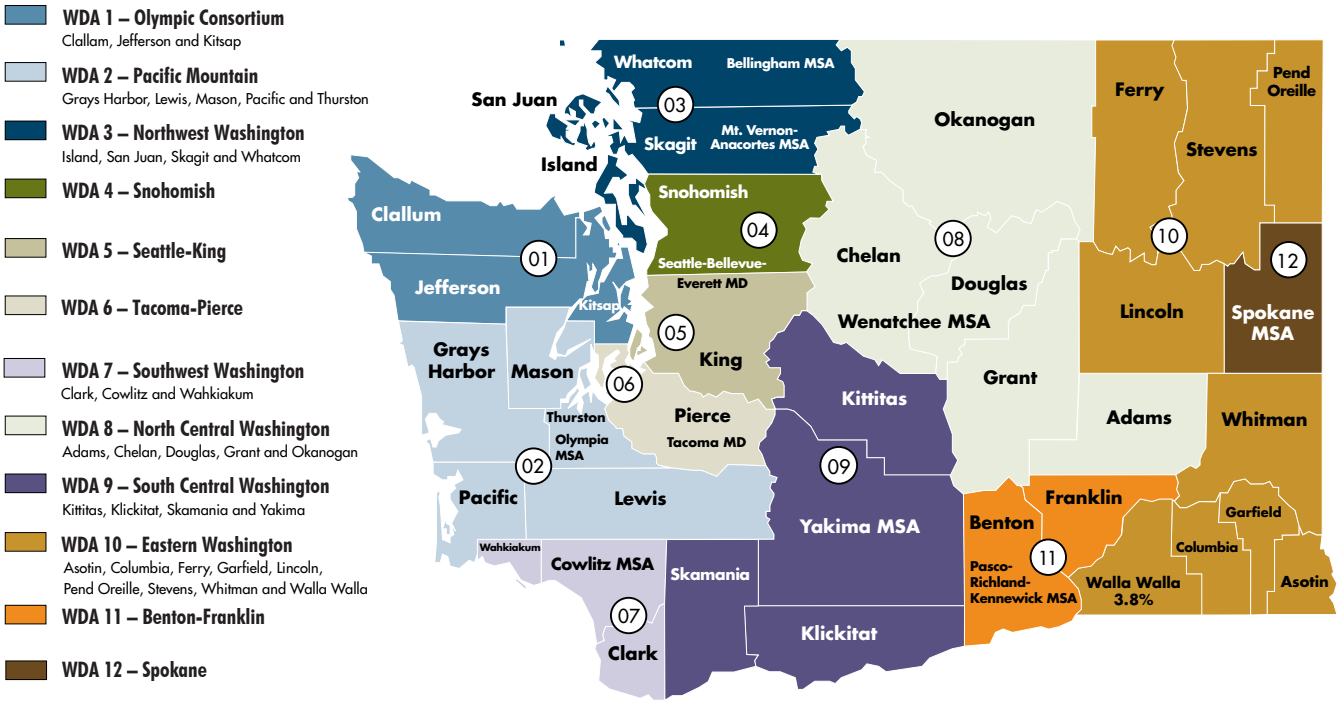
Figure 7-7. Median single-family house prices in thousands, based on 2006 ranking
Selected U.S. metropolitan areas, 2006 and 2014
Source: National Association of Realtors

Rank	Metropolitan area	2006	2014	Percent change 2006 to 2014
	United States	**221.9**	**208.9**	**-5.9%**
1	San Jose-Sunnyvale-Santa Clara, CA	775	860	11.0%
2	San Francisco-Oakland-Fremont, CA	752.8	737.6	-2.0%
3	Anaheim-Santa Ana-Irvine, CA	709	687.9	-3.0%
4	Honolulu, HI	630	682.8	8.4%
5	San Diego-Carlsbad-San Marcos, CA	601.8	497.9	-17.3%
6	Los Angeles-Long Beach-Santa Ana, CA	584.8	449.5	-23.1%
7	New York-Wayne-White Plains, NY-NJ	539.4	468.2	-13.2%
8	NY: Nassau-Suffolk, NY	474.7	405.9	-14.5%
20	**Seattle-Tacoma-Bellevue, WA**	**361.2**	**355.8**	**-1.5%**
28	Portland-Vancouver-Beaverton, OR-WA	280.8	286	1.9%
54	Salem, OR	212.9	187.7	-11.8%
66	**Spokane, WA**	**184.1**	**178.3**	**-3.2%**
78	**Kennewick-Richland-Pasco, WA**	**156.1**	**187.9**	**20.4%**
108	**Yakima, WA**	**136.5**	**159.5**	**16.8%**
147	Cumberland, MD-WV	95.7	92	-3.9%
148	South Bend-Mishawaka, IN	92.7	106.7	15.1%
149	Elmira, NY	86.8	100.8	16.1%
150	Decatur, IL	85.4	89.7	5.0%
151	Youngstown-Warren-Boardman, OH-PA	81.5	78.6	-3.6%

Home Prices

Appendix 1: Washington's workforce development areas

Appendix figure A1-1. Washington state workforce development aeas (WDAs)



Appendix 2: Seasonal, structural and cyclical industry employment

Theoretical base

This year, for the first time, we used the advanced analytical tools available in the open source R software.

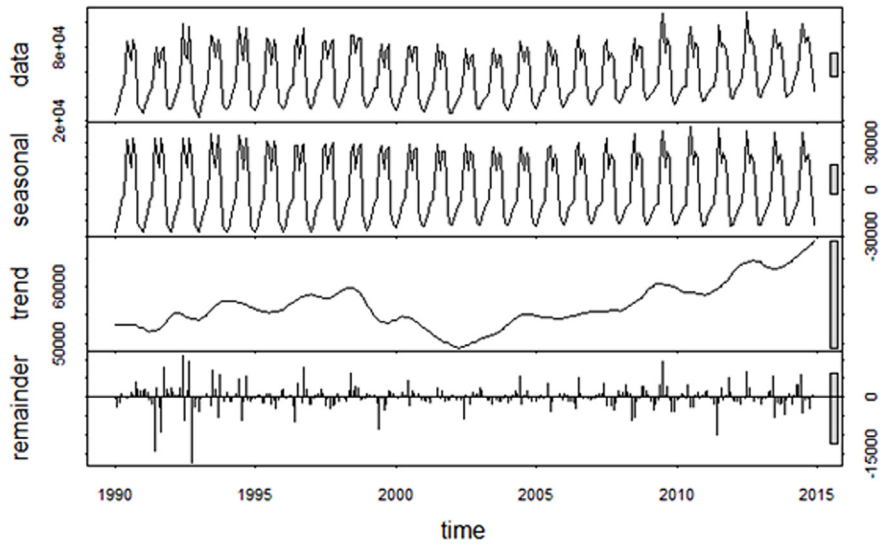
Decomposition of employment for each point in time (months, in our case) is: Employment = (trend + cycle) + seasonal + irregular

As it was in previous years' analyses, there are two steps in the process of time series decomposition:

1. We split the series between: combined trend (which includes trend + cycle), seasonal and irregular components.
2. We split the combined trend (trend-cycle) into trend and cyclical components.

Appendix figure A2-1 represents the main components of decomposition for the most seasonal industry, crop production. The trend component in the figure is the result of the first step of decomposition and represents the combination of trend plus cycle. The trend plus cycle component is used in further processing steps later in the decomposition process.

Appendix figure A2-1. Crop production employment time series and its main components
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages



Crop production was the industry with highest level of seasonality.

A major improvement this year was implemented in step one. We used a state space model with auto selection of model variations (types of error, trend and seasonality). Model variations can be additive, multiplicative, none, etc. The software also includes the choice of 30 exponential smoothing variations. The main advantages of this type of approach lies in the fact that the types of models are not predefined and thus can vary for different series. Before this type of advanced capability, while parameters were estimated for each series, models were predefined. Previously, we used the U.S. Census Bureau's X-12-ARIMA seasonal adjustment software and the same model applied to all series. In addition, under the new approach, regardless of the selection of seasonal and irregular models (additive or multiplicative), the sum of decomposition components (trend-cycle, seasonal and irregular) remains equal to the initial series for each month.

The new approach allows for the optimized selection of models for each individual series. Due to the better fitting of models, the quality of initial decomposition into trend-cycles, seasonal and irregular components improved significantly. The impact on seasonal factors and trend contributions for the majority of industries was limited, but the impact on cyclical contributions and consequently on the shares of trend and cyclical components of growth was significant.

The model used in step two was the same type used for previous years' reports, but this year was programmed with R software. In step two, we used the trend-cycle series from step one for our analyses of the contributions of structural and cyclical components to growth. To accomplish this, we used the Hodrick-Prescott (HP) filter. This filter is a smoothing method that is widely used among macroeconomists to obtain a smooth estimate of the long-term trend component of a series.

Technically, the HP filter is a two-sided linear filter that computes the smoothed series s of y by minimizing the variance of y around s, subject to a penalty that constrains the second difference of s. That is, the HP filter chooses s to minimize:

$$\sum_{t=1}^{T} (y_t - s_t)^2 + \lambda \sum_{t=2}^{T-1} \left((s_{t+1} - s_t) - (s_t - s_{t-1}) \right)^2$$

The penalty parameter λ controls the smoothness of the series s. The larger the λ, the smoother the s. As $\lambda=\infty$, s approaches a linear trend.

We used default value λ=14,400 for monthly frequency of the data. This default value was defined by dividing the number of periods per year by four raised to a power (default value 2[1]) and multiplying by 1,600.

[1]The other suggestion is to use value four for the power, but we stayed with two for this analysis.

The Granger causality test is a technique for determining whether one time series is useful in forecasting another. Put another way: this test answers the question of whether a time series "X" causes time series "Y." Also, it tests to see how much of the current "Y" values can be explained by past values of the same series, and then to see whether adding lagged values of "X" can improve the explanation.

In our case, the question is whether employment in specific industries "Granger-causes" total employment.

The results of Granger causality are not always clear enough to be able to state that a series "X" Granger-causes series "Y," but not the other way around. We can find that neither series Granger-causes the other, or that each Granger-causes the other.

Moreover, Granger causality does not imply true causality. If both series "X" and "Y" are driven by a common third process (variable, series), but with different lags, there would be Granger causality. However, the changes in one series would not have a significant effect on the other. To partially address this issue, we estimated Granger causality in both directions. We estimated specific industry on total employment and total employment on specific industry employment.

Industry seasonality levels

The level of employment seasonality for an industry is defined as an average of absolute values of the seasonal component divided by the initial series (mean(|seasonal| /employment)). The levels are presented in column three of *Appendix figure A2-2*. A larger level value indicates a larger seasonality value for the industry. To interpret the seasonal factors, arbitrary thresholds were established. Industries with a seasonal factor value of up to 1 percent were identified as non-seasonal. Industries with a factor value greater than 1 and up through 2 percent were identified as having low levels of seasonality. Industries with a factor value greater than 2 and up through 4 percent were identified as having moderate levels of seasonality, while industries with a factor value greater than 4 percent were considered to have high levels of seasonality. The results are listed in column four of *Appendix figure A2-2*.

Structural and cyclical contributions to industry employment changes

Relative contributions to monthly employment change are calculated as the average for all months of absolute differences (one-month difference) for specific factors (presented in columns five and six of the table in *Appendix figure A2-2*). The percentages of relative contributions for trend (structural) and cycle components are presented in columns seven and eight. The industry that had the lowest cyclical component contribution (17.9 percent) was ambulatory healthcare services, while support activities for mining and crop production had the highest cyclical component contribution (69.7 percent). The structural component accounted for the dominant share of change in total employment (74.4 percent), while the cyclical component accounted for the residual 25.6 percent.

Relations between industry and total employment

The last five columns of the table represent an attempt to connect employment time series for specific industries with employment time series of total covered employment.[2] The first of these five columns represents correlations of series of monthly employment between industries and total employment, while the second of these columns represents correlations of the first differences (monthly changes) for the same series.

The third of these five columns represents an attempt to identify the industries for which monthly employment could help in predicting the next month's total employment. F-statistics from the Granger causality test for time series, with a lag of one month, are presented in this column. The value of "F" indicates the significance of the impact of employment in the industry on the next month's total employment. Larger values indicate effects that were more significant. Probabilities for the rejection of the hypotheses of significance, associated with F-statistics, are listed in the next to last column.

A lower probability indicates higher confidence that the effect is significant. To address the issue of possible mutual causality we also tested inverse causality of total employment on specific industries. As previously noted, if both direct and inverse causality are significant, it means that an industry employment series might not be a good indicator for the next month's total employment. The last column of *Appendix figure A2-2* indicates if significant direct causality of industry on total employment without significant inverse causality exists (indicator "yes"). All other cases have an indicator of "no." The

[2] This part is different from the previous connections between trend cycles of the employment series. The new approach more directly relates the employment time series by itself.

cutoff for such definitions was the following: p-value for direct test is not more than 0.01, but for inverse test not less than 0.1. Only nine of 97 industries have the indicator "yes."

The combination of predictive abilities (indicator "yes") and correlation with total employment can be used to identify the main industries that can be used as coincidental and leading (i.e., one-step-ahead) economic indicators. In addition, this combination can be used for the one-step-ahead prediction of employment changes. The industries identified by this process are food services and drinking places; building material and garden equipment and supplies dealers; social assistance; electrical equipment, appliance and component manufacturing; heavy and civil engineering construction; professional, scientific and technical services; and food and beverage stores.

Appendix figure A2-2. Results of industry analyses
Washington state, 1990 through 2014
Source: Employment Security Department/LMPA; U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

NAICS	Title	Seasonal factor	Level of seas.	Trend (average number)	Cycle (average number)	Trend (percent)	Cycle (percent)	Correlation with total employment	Correlation of first differences	F-statistic for Granger test (one month lag)	Probability	Signif. one-way impact
	Total covered employment	**1.56%**	**Low**	**3,817**	**1,313**	**74.4%**	**25.6%**	**100.0%**	**100.0%**			
111	Crop production	38.06%	High	96	165	36.8%	63.2%	25.0%	73.0%	12.08	0.00	Yes
112	Animal production	3.05%	Mod	7	9	43.4%	56.6%	71.8%	59.4%	1.23	0.27	No
113	Forestry and logging	3.42%	Mod	22	14	60.8%	39.2%	-83.5%	52.2%	13.17	0.00	No
114	Fishing, hunting and trapping	8.22%	High	7	6	52.1%	47.9%	-80.0%	-3.9%	1.13	0.29	No
115	Support activities for agriculture and forestry	15.05%	High	47	42	53.1%	46.9%	84.6%	59.1%	6.65	0.01	No
212	Mining (except oil and gas)	3.98%	Mod	10	6	61.2%	38.8%	-42.8%	54.3%	2.25	0.14	No
213	Support activities for mining	8.91%	High	1	2	30.3%	69.7%	-57.5%	26.1%	7.00	0.01	No
221	Utilities	1.15%	Low	9	9	50.6%	49.4%	-66.7%	9.8%	1.21	0.27	No
236	Construction of buildings	3.57%	Mod	141	69	67.2%	32.8%	52.0%	68.0%	1.82	0.18	No
237	Heavy and civil engineering construction	9.17%	High	51	31	62.3%	37.7%	44.9%	71.8%	8.54	0.00	Yes
238	Specialty trade contractors	3.92%	Mod	367	161	69.5%	30.5%	83.7%	72.9%	0.07	0.79	No
311	Food manufacturing	4.94%	High	39	31	55.7%	44.3%	-31.1%	55.1%	17.09	0.00	No
312	Beverage and tobacco product manufacturing	4.49%	High	15	8	65.6%	34.4%	74.8%	64.8%	1.75	0.19	No
313	Textile mills	1.75%	Low	2	2	44.3%	55.7%	-83.6%	24.6%	3.49	0.06	No
314	Textile product Mills	1.60%	Low	8	6	56.8%	43.2%	-56.2%	40.9%	0.61	0.44	No
315	Apparel manufacturing	2.61%	Mod	16	11	59.4%	40.6%	-79.6%	42.4%	3.78	0.05	No
316	Leather and allied product manufacturing	3.59%	Mod	1	2	45.6%	54.4%	-78.6%	-1.0%	0.10	0.75	No
321	Wood product manufacturing	1.35%	Low	58	41	58.7%	41.3%	-75.1%	50.3%	0.81	0.37	No
322	Paper manufacturing	1.03%	Low	31	16	66.5%	33.5%	-84.7%	24.6%	5.09	0.02	No
323	Printing and related support activities	0.82%	NS	29	14	68.0%	32.0%	-77.1%	50.3%	2.85	0.09	No
324	Petroleum and coal products manufacturing	1.98%	Low	3	5	39.0%	61.0%	41.5%	37.5%	0.69	0.41	No
325	Chemical manufacturing	0.75%	NS	13	10	57.6%	42.4%	46.1%	25.6%	0.44	0.51	No
326	Plastics and rubber products manufacturing	1.29%	Low	27	16	63.5%	36.5%	40.8%	48.1%	0.10	0.75	No
327	Nonmetallic mineral product manufacturing	2.66%	Mod	21	13	61.7%	38.3%	81.0%	65.6%	0.14	0.71	No
331	Primary metal manufacturing	0.80%	NS	41	20	67.6%	32.4%	-79.6%	14.4%	0.94	0.33	No
332	Fabricated metal product manufacturing	1.06%	Low	49	33	59.9%	40.1%	78.7%	51.2%	1.61	0.20	No
333	Machinery manufacturing	0.76%	NS	54	32	63.0%	37.0%	71.1%	28.5%	1.65	0.20	No

NAICS	Title	Seasonal factor	Level of seas.	Trend (average number)	Cycle (average number)	Trend (percent)	Cycle (percent)	Correlation with total employment	Correlation of first differences	F-statistic for Granger test (one month lag)	Probability	Signif. one-way impact
334	Computer and electronic Product manufacturing	0.49%	NS	93	61	60.4%	39.6%	-49.7%	24.7%	0.48	0.49	No
335	Electrical equipment, appliance and component manufacturing	0.86%	NS	11	8	58.8%	41.2%	95.4%	16.1%	14.53	0.00	Yes
3364	Aerospace product and parts manufacturing	1.09%	Low	395	319	55.4%	44.6%	-47.6%	8.6%	0.26	0.61	No
3366	Ship and boat building	0.69%	NS	42	24	63.5%	36.5%	-13.0%	-2.5%	0.29	0.59	No
336*	Other transportation equipment manufacturing	1.01%	Low	28	24	54.0%	46.0%	-36.6%	17.1%	0.12	0.73	No
337	Furniture and related product manufacturing	1.43%	Low	25	15	62.9%	37.1%	-27.6%	44.5%	0.44	0.51	No
339	Miscellaneous manufacturing	1.29%	Low	20	13	60.3%	39.7%	60.4%	34.4%	3.07	0.08	No
423	Merchant wholesalers, durable goods	0.56%	NS	114	59	65.9%	34.1%	78.4%	53.9%	0.41	0.52	No
424	Merchant wholesalers, nondurable goods	1.85%	Low	45	27	62.3%	37.7%	69.6%	75.6%	23.89	0.00	No
425	Wholesale electronic markets and agents and brokers	1.02%	Low	67	23	74.2%	25.8%	67.8%	24.3%	1.60	0.21	No
441	Motor vehicle and parts Dealers	1.20%	Low	64	37	63.8%	36.2%	70.3%	56.2%	2.00	0.16	No
442	Furniture and home furnishings stores	1.88%	Low	24	20	54.5%	45.5%	59.3%	18.3%	4.04	0.05	No
443	Electronics and appliance Stores	2.56%	Mod	19	23	45.2%	54.8%	56.7%	6.3%	4.83	0.03	No
444	Building material and garden equipment and supplies dealers	3.69%	Mod	50	30	62.9%	37.1%	89.1%	62.7%	26.26	0.00	Yes
445	Food and beverage stores	1.57%	Low	73	68	51.9%	48.1%	31.5%	51.9%	12.10	0.00	Yes
446	Health and personal care stores	1.33%	Low	12	17	42.8%	57.2%	79.7%	24.7%	33.56	0.00	No
447	Gasoline stations	1.87%	Low	18	13	57.8%	42.2%	-48.4%	54.8%	0.36	0.55	No
448	Clothing and clothing accessories stores	4.72%	High	55	49	52.8%	47.2%	21.2%	23.8%	58.24	0.00	No
451	Sporting goods, hobby, book and music stores	3.69%	Mod	33	23	59.1%	40.9%	55.5%	26.7%	43.52	0.00	No
452	General merchandise stores	3.78%	Mod	158	72	68.7%	31.3%	90.4%	18.9%	6.40	0.01	No
453	Miscellaneous store retailers	1.92%	Low	49	16	75.7%	24.3%	43.5%	38.1%	5.81	0.02	No
454	Nonstore retailers	1.77%	Low	103	35	74.9%	25.1%	80.6%	24.5%	1.70	0.19	No
481	Air transportation	0.96%	NS	33	20	62.5%	37.5%	-37.6%	23.3%	0.73	0.39	No
483	Water transportation	3.61%	Mod	5	5	50.5%	49.5%	38.6%	46.6%	0.23	0.63	No
484	Truck transportation	2.52%	Mod	39	25	61.1%	38.9%	83.5%	72.4%	3.88	0.05	No

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485	Transit and ground passenger transportation	3.27%	Mod	12	9	58.5%	41.5%	93.0%	23.8%	3.98	0.05	No
486	Pipeline transportation	1.21%	Low	1	1	41.3%	58.7%	-77.8%	10.9%	3.80	0.05	No
487	Scenic and sightseeing transportation	17.67%	High	3	6	33.0%	67.0%	-46.6%	5.7%	0.47	0.49	No
488	Support activities for transportation	1.11%	Low	34	30	53.1%	46.9%	94.4%	27.1%	5.95	0.02	No
491	Postal service	1.02%	Low	27	13	67.2%	32.8%	-20.2%	13.5%	3.85	0.05	No
492	Couriers and messengers	4.32%	High	38	28	57.3%	42.7%	64.2%	19.0%	9.01	0.00	No
493	Warehousing and storage	3.56%	Mod	30	29	50.9%	49.1%	-10.8%	49.5%	12.64	0.00	Yes
5112	Software publishers	0.88%	NS	165	44	79.1%	20.9%	96.0%	25.1%	8.37	0.00	No
511*	Other publishers	0.66%	NS	37	19	66.1%	33.9%	-37.7%	31.7%	0.55	0.46	No
512	Motion picture and sound recording industries	4.41%	High	13	13	50.1%	49.9%	75.5%	11.2%	9.41	0.00	No
515	Broadcasting (except Internet)	0.96%	NS	6	8	43.2%	56.8%	-79.2%	25.2%	9.41	0.00	No
5171	Wired telecommunications carriers	1.02%	Low	48	30	61.4%	38.6%	-64.6%	-2.2%	1.00	0.32	No
5172	Wireless telecommunications carriers (except satellite)	1.81%	Low	51	32	61.6%	38.4%	87.4%	-2.3%	0.99	0.32	No
517*	Other telecommunications	3.11%	Mod	29	20	58.6%	41.4%	-24.4%	9.6%	0.26	0.61	No
518	Data processing, hosting and related services	1.18%	Low	25	28	46.6%	53.4%	48.4%	9.3%	0.04	0.83	No
519	Other information services	4.38%	High	35	19	64.8%	35.2%	71.8%	-10.9%	2.57	0.11	No
521	Monetary authorities-Central Bank	1.06%	Low	1	1	47.4%	52.6%	-64.5%	7.3%	2.76	0.10	No
522	Credit intermediation and related activities	0.33%	NS	106	83	56.3%	43.7%	51.3%	15.5%	0.05	0.82	No
523	Securities, commodity contracts and other financial investments and related activities	0.51%	NS	28	18	60.2%	39.8%	93.7%	23.4%	3.28	0.07	No
524	Insurance carriers and related activities	0.40%	NS	56	38	59.5%	40.5%	76.3%	28.5%	0.01	0.93	No
525	Funds, trusts and other financial vehicles	6.89%	High	6	5	55.3%	44.7%	-92.3%	17.1%	15.61	0.00	No
531	Real estate	1.46%	Low	56	25	69.1%	30.9%	96.0%	64.6%	4.71	0.03	No
532	Rental and leasing services	2.32%	Mod	32	13	72.0%	28.0%	6.1%	53.5%	0.56	0.46	No
533	Lessors of nonfinancial intangible assets (except copyrighted works)	3.63%	Mod	3	3	56.0%	44.0%	23.7%	1.5%	0.00	0.99	No
541	Professional, scientific and technical services	0.43%	NS	312	160	66.1%	33.9%	94.9%	16.8%	9.27	0.00	Yes

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551	Management of companies and enterprises	0.54%	NS	92	51	64.6%	35.4%	80.5%	-5.4%	3.08	0.08	No
561	Administrative and support services	3.24%	Mod	376	204	64.9%	35.1%	97.4%	72.1%	2.07	0.15	No
562	Waste management and remediation services	0.96%	NS	32	32	50.2%	49.8%	23.8%	34.8%	0.95	0.33	No
611	Educational services	5.04%	High	326	105	75.7%	24.3%	84.1%	18.4%	4.06	0.04	No
621	Ambulatory healthcare services	0.37%	NS	229	50	82.1%	17.9%	91.9%	39.8%	4.12	0.04	No
622	Hospitals	0.34%	NS	158	59	72.8%	27.2%	93.2%	24.5%	3.28	0.07	No
623	Nursing and residential care facilities	0.40%	NS	81	31	72.4%	27.6%	94.0%	36.7%	3.58	0.06	No
624	Social assistance	0.91%	NS	182	54	77.0%	23.0%	94.6%	30.7%	12.00	0.00	Yes
711	Performing arts, spectator sports and related industries	9.11%	High	19	18	51.6%	48.4%	23.9%	46.2%	1.53	0.22	No
712	Museums, historical sites, and similar institutions	3.56%	Mod	6	6	50.4%	49.6%	95.1%	14.7%	16.05	0.00	No
713	Amusement, gambling and recreation industries	4.59%	High	76	54	58.8%	41.2%	93.4%	33.0%	17.98	0.00	No
721	Accommodation	5.75%	High	38	34	53.2%	46.8%	81.8%	55.3%	0.96	0.33	No
722	Food services and drinking places	2.09%	Mod	317	98	76.3%	23.7%	98.1%	71.2%	15.68	0.00	Yes
811	Repair and maintenance	0.99%	NS	36	24	59.7%	40.3%	65.8%	51.7%	1.80	0.18	No
812	Personal and laundry services	1.15%	Low	35	16	68.8%	31.2%	92.1%	64.9%	3.17	0.08	No
813	Religious, grantmaking, civic, professional, and similar organizations	2.22%	Mod	34	20	63.0%	37.0%	95.3%	46.5%	1.57	0.21	No
814	Private households	2.93%	Mod	222	123	64.3%	35.7%	90.3%	0.1%	2.69	0.10	No
901	Federal government (other)	1.70%	Low	66	64	50.8%	49.2%	33.9%	20.3%	0.13	0.72	No
902	State government (other)	1.07%	Low	51	55	47.8%	52.2%	84.0%	21.3%	1.17	0.28	No
903	Local government (other)	2.17%	Mod	205	87	70.4%	29.6%	95.1%	29.3%	2.89	0.09	No

Mod = Moderate
NS = Not Seasonal