

Tomorrow's Economy

Recovery: Light at the End of the Tunnel?

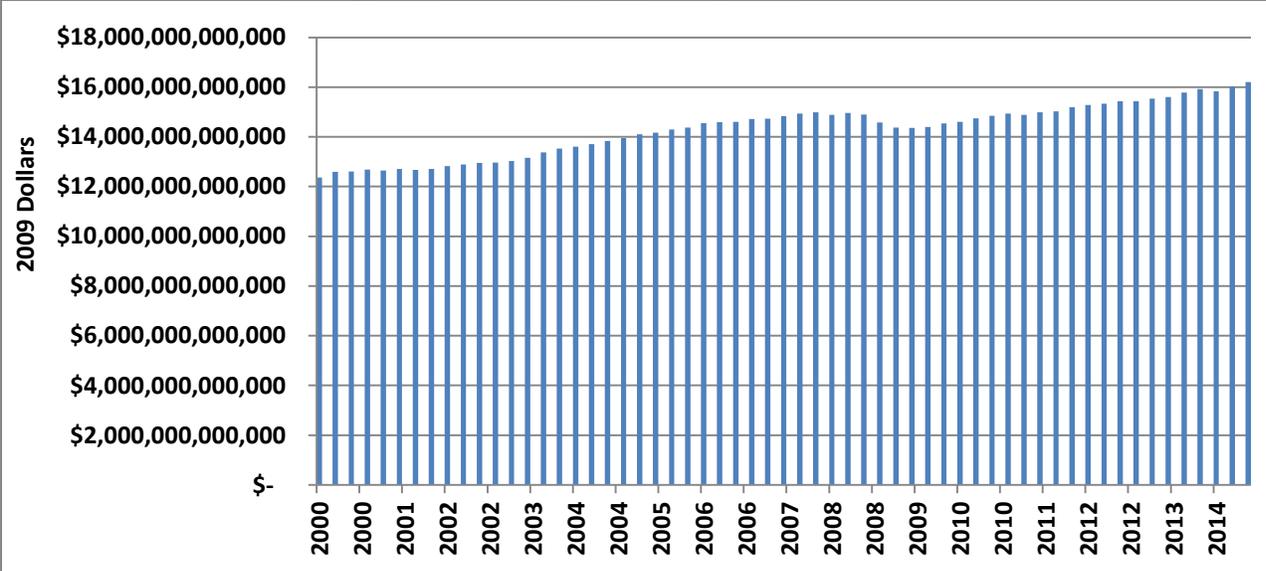
Economic growth versus employment and wages

At the beginning of 2015, the Bureau of Economic Analysis announced that the national economy grew by 2.5 percent in the fourth quarter of 2014. That followed 5 percent growth in the third quarter and 4.6 percent growth the quarter before that—or around 12 percent growth over a nine-month period. As for employment, 2014 turned out to be the best year of job gains since 1999. This data along with other positive economic indicators have led to a growing sense that the nation was moving out of the shadow of the Great Recession and weak recovery.

While this is good news, it masks deeper, lingering issues. One is that while the gross domestic product (GDP) measure gives a good sense of economic activity from period to period, it is limited in that it only measures the value of goods and services produced. So, for example, during the recession, many firms cut back on employment and balanced this with efficiency gains and more use of capital and technology.

As is clear in the following chart, overall productivity has been rising in the U.S. as the economy recovers.

Figure 1. Real Gross National Product, U.S., 2000-2014



Source: U.S. Bureau of Economic Analysis

*This chart uses 2009 dollars to express real prices. Real prices are those that have been adjusted to remove the effect of changes in purchasing power (inflation).

As productivity rose, GDP peaked in the fourth quarter of 2007 at \$14.9 trillion; a high-water mark that wasn't surpassed until the third quarter of 2011 (nearly four years later). By contrast, the nation experienced 23 months of job declines from January 2008 to December 2009, and the pre-recession peak employment level was not reached until May of 2014.¹

Although overall output has risen, employment has lagged, particularly for low- and middle-wage workers.

Productivity quicker to rebound than hiring

Even so, it's clear that the output of goods and services was far quicker to rebound than hiring. Beyond that, as this report will show, job growth wasn't accompanied by higher wages for most workers. Instead, the post-recession economy in Washington and the nation reflects job growth and higher wages for the highly skilled, and slow growth and little movement on wages, for those with low skills and education levels. Mid-level occupations, the sweet spot of the economy and the focus of statewide workforce efforts to move people into living-wage occupations, have yet to rebound fully from the Great Recession.

A Seattle Times analysis of Washington State Employment Security Department data highlighted the uneven recovery. For jobs paying between \$18 and \$36 per hour, more jobs were lost in Washington during the downturn than were gained during the recovery. Meanwhile, higher wage jobs paying more than \$36 per hour outpaced declines during that same time period. In particular, jobs paying over \$54 per hour increased far more quickly than jobs lost at that wage rate, especially in King County.²

¹ Washington passed its pre-recession employment peak a few months earlier than the nation, in December 2013.

² Seattle Times, June 28, 2015 <http://www.seattletimes.com/business/economy/the-recovery-gap-economic-expansion-is-favoring-the-wealthy/>.

Uneven recovery strands some workers as labor force participation falls

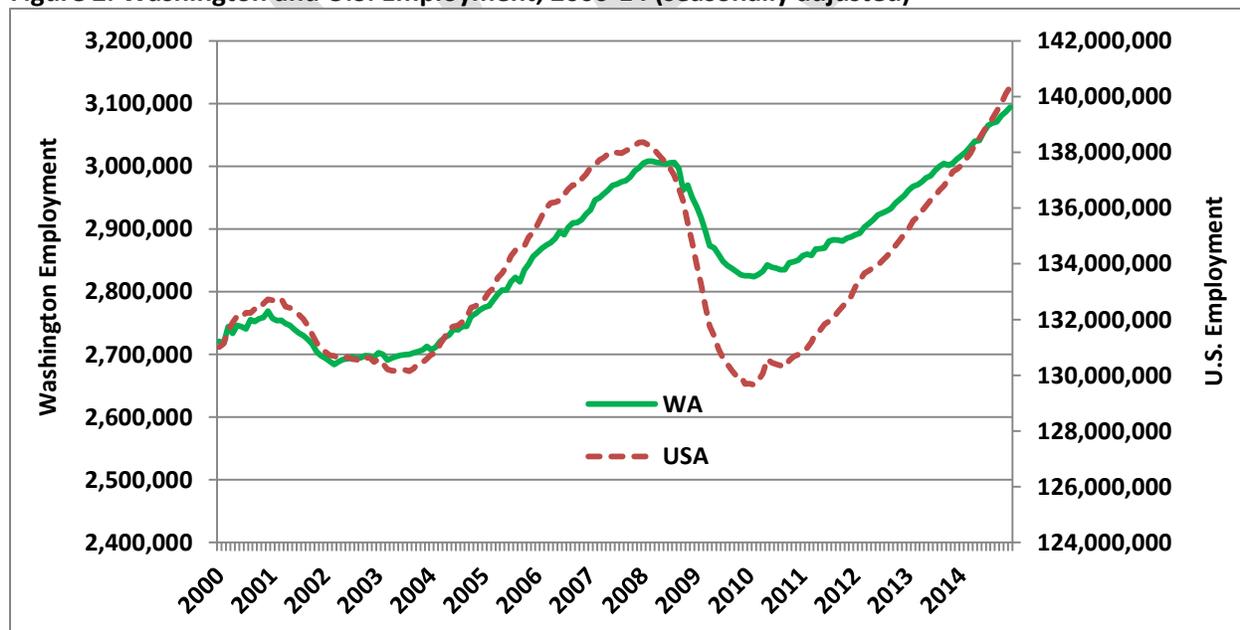
Although the economic recovery has spurred more jobs and spending, an improving economy hasn't helped all workers. In fact, it's left a substantial number of workers behind. Labor force participation is down significantly in Washington and the nation. The percentage of Washingtonians in the labor force fell by more than 5 percentage points, from 68.3 percent to 63.1 percent, between 2008 and 2014. This mirrors the national experience which saw labor force participation rates falling from 66 percent in 2008 to 62.9 percent in 2014.³ Some of this may be due to an aging workforce, but much is also because young people are unable to find a foothold in the labor force and discouraged workers are dropping out.

In July of 2015, the U.S. unemployment rate fell to 5.3 percent, a low point from April 2008. But economists cautioned that this was not a sign of economic strength but an indicator of potential weakness, as the lower unemployment rate reflected 432,000 people leaving the labor force. A shrinking labor force was behind the labor force participation rate, or the share of Americans who are working age who have a job or are looking for one. Labor force participation was down to 62.6 percent, the lowest point since 1977.

Unemployment stubborn problem even as rates fall

While the national unemployment rate has dropped steadily since April 2010 and stood at 5.5 percent in May 2015, it is still well above the low of 4.4 percent recorded in 2007.⁴ As of May 2015, Washington's unemployment rate was 5.4 percent (but over the most recent 12-month period averaged 6.1 percent), significantly above the 4.4 percent rate in mid-2007. There was an average of 208,600 unemployed persons through the first five months of 2015, compared to an average of 218,170 unemployed in 2014.

Figure 2. Washington and U.S. Employment, 2000-14 (seasonally adjusted)



Source: U.S. Bureau of Labor Statistics

³ U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment*.

⁴ Unemployment began dropping in Washington in February of 2010 and stood at 5.4 percent in May of 2015.

Standard unemployment rate doesn't provide full picture

The unemployment rate is often viewed as a leading indicator for the overall health of the labor market. Lower unemployment means a stronger economy. However, the way unemployment is measured has a large impact on the numbers.

The standard unemployment rate includes:

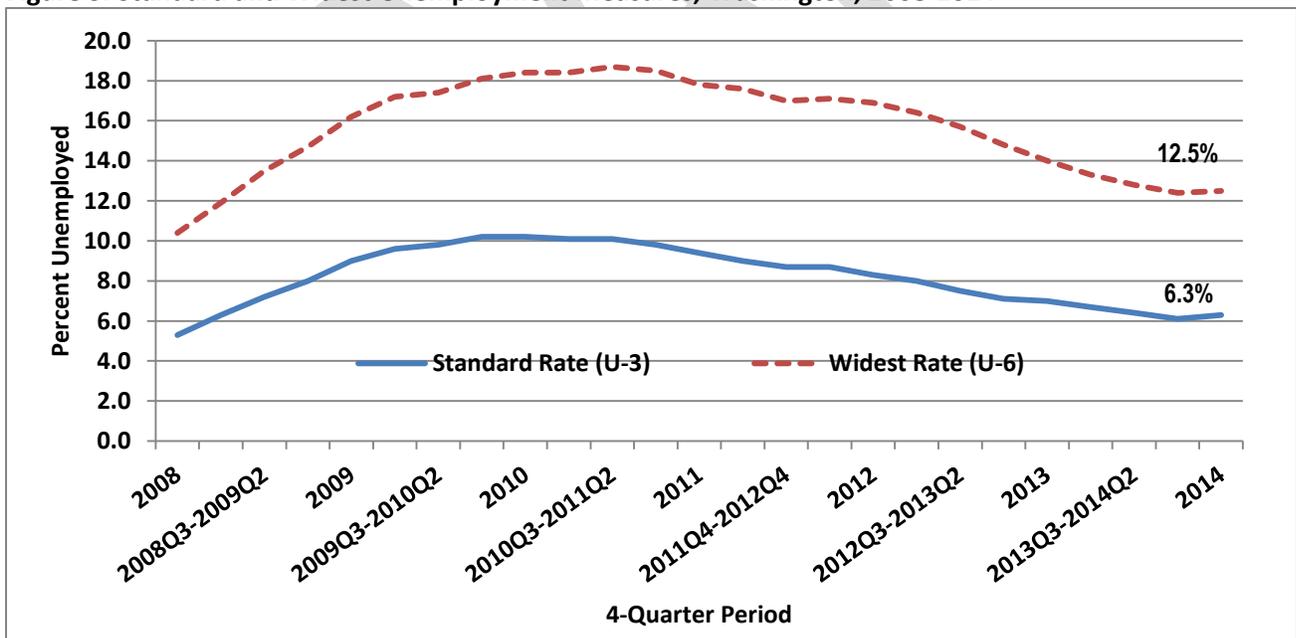
- Those who do not have a job.
- Those who have looked for work in the past month.
- Those who are currently available for work.

The following chart illustrates the “standard” unemployment rate (U-3) and compares it to the “widest” unemployment rate (U-6). The U-6 rate is a broader measure of joblessness and takes into account:

- Discouraged workers who have dropped out of the labor market.
- Those involuntarily working part-time.
- Those unable to find work because of barriers such as lack of child care or transportation.

As mentioned earlier in this report, labor force participation is down significantly. This can make the unemployment rate look far lower than it actually is.

Figure 3. Standard and Widest Unemployment Measures, Washington, 2008-2014



Source: U.S. Bureau of Labor Statistics

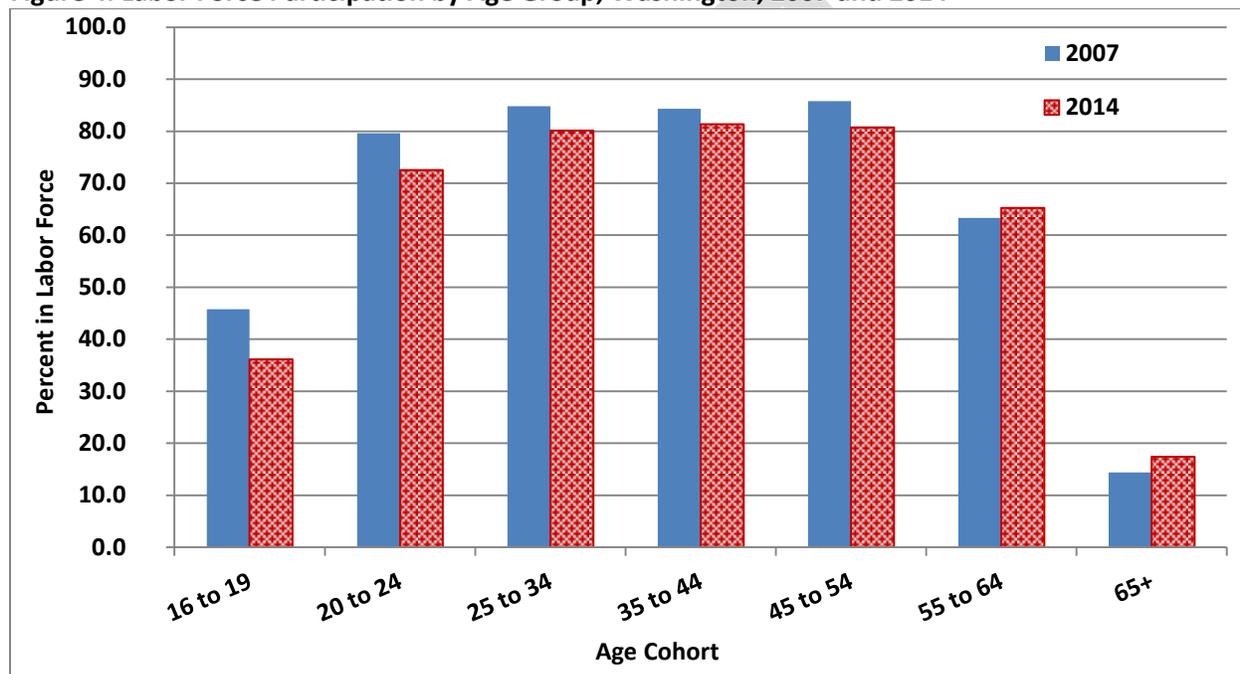
The “widest” unemployment rate was over 8 percentage points higher than the “standard” rate for most of 2010-12. While both measures have come down, the wider rate is still about twice the size of the standard rate. This discrepancy reveals that a substantial number of Washingtonians are working less

and earning less than they'd like, facing challenges in getting to work or balancing work with family obligations, or are so discouraged by their employment prospects they've stopped looking for a job entirely.

Young workers left behind

Younger workers are among those left behind since the Great Recession. Labor force participation for 16-19 year olds fell by nearly 10 percentage points, from 45.8 to 36.1 percent from 2007 to 2014. For those aged 20-24, it fell by over 7 percentage points (79.6 to 72.5 percent) and for 25-34 year olds by 4.7 percentage points (from 84.8 to 80.1 percent). Workers aged 55 and older (see following chart) were the only ones to see an increase in labor force participation over this time period.

Figure 4. Labor Force Participation by Age Group, Washington, 2007 and 2014

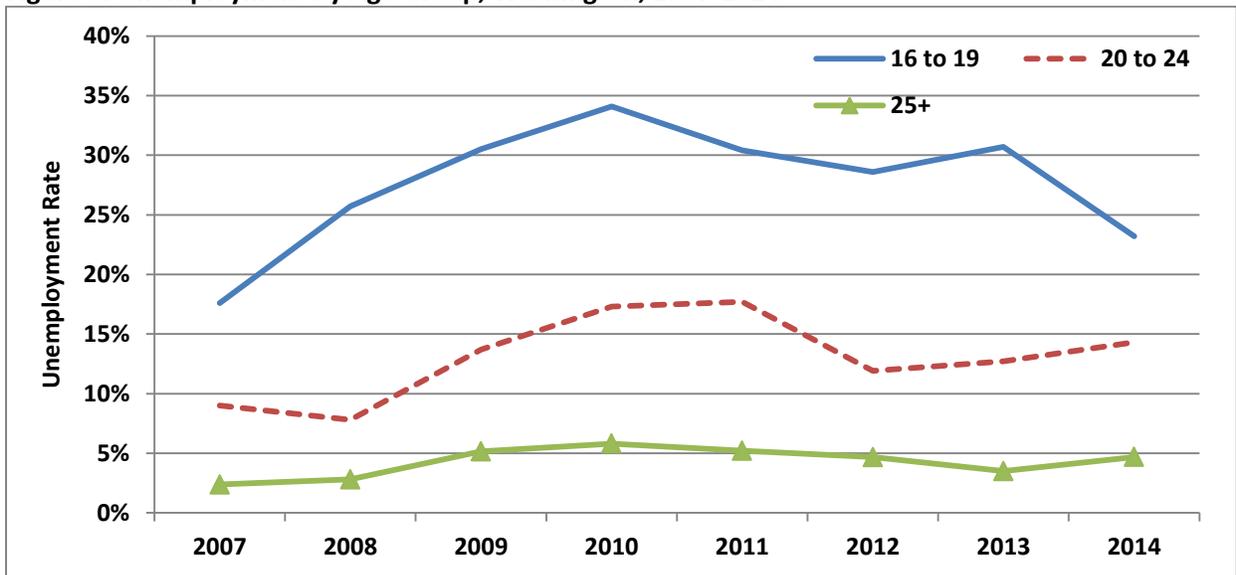


Source: U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment*

Youth who dropped out of high school faced the biggest employment challenges. Although high school graduation rates have risen in recent years in Washington, 14,000 students dropped out of high school in the 2013-14 school year, or about one out of five students.⁵ Education matters when it comes to landing a job. In 2013, those without a high school diploma or equivalent faced an unemployment rate four times higher than those with a bachelor's degree (or higher).

⁵ Multiple Pathways for Young Adults: A Report to the Washington Legislature on Young Adult Unemployment, Workforce Board, 2014. <http://wtb.wa.gov/Documents/YouthEmploymentReport2014.pdf>

Figure 5. Unemployment by Age Group, Washington, 2007-2014



Source: Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment*

Disconnected youth or lost opportunity?

Nearly 15 percent, or approximately one in six youth in Washington, aged 16-24, are not in school and are not working.⁶ Persistent unemployment and disconnection from the world of work places our state's youth at a competitive disadvantage. This struggle to connect to the economy erodes confidence and optimism, replacing it with doubt regarding their preparation for entering the job market.

Research shows that the length of disconnection matters to young adult success. For instance, of those who were disconnected from employment for between one and two years, 61 percent of men and 48 percent of women were employed full time between the ages of 25-28. Yet of those who were disconnected from the workforce or education for three years or more, only 41 percent of men and 21 percent of women were employed full time between the ages of 25-28. For individuals who stayed connected to school or employment, 75 percent of men and 62 percent of women were employed full time at the same age in their lives.

Older workers face barriers as well: research has found that older workers tend to require more flexibility in work hours, limiting the types of firms or industries they can work in.⁷ Also, when firms adopt new technology they sometimes reduce the number of older workers they hire.⁸

Industry Patterns

In 2014, 82 percent of Washington workers were working in the private sector compared to 18 percent in the public sector. Within the private sector, education and health was the largest employer,

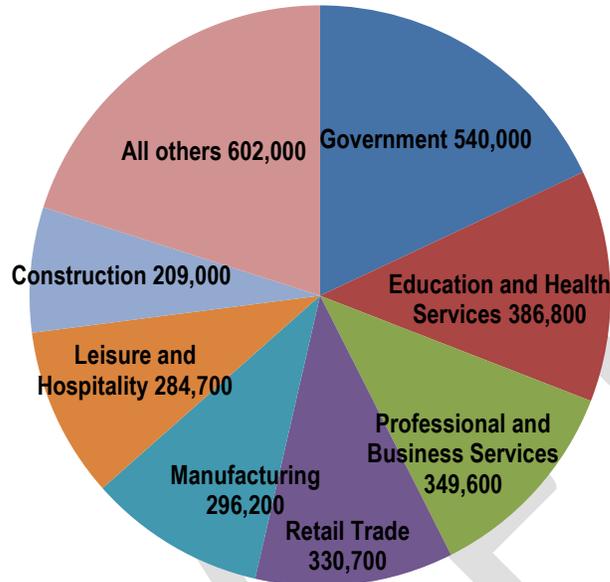
⁶ Nation, O. (2013), Opportunity Index, Washington <http://opportunityindex.org/#5.00/45.635/-93.089/>

⁷ Blau, David M. & Shvydko, Tetyana (2007). Labor Market Rigidities and the Employment Behavior of Older Workers.

⁸ Aubert, Patrick, Caroli, Eve, & Roger, Muriel. New Technologies, organization and age: firm-level evidence.

accounting for about 13 percent of all jobs. Professional and business services provided about 12 percent of all jobs, followed by retail trade with 11 percent of jobs.

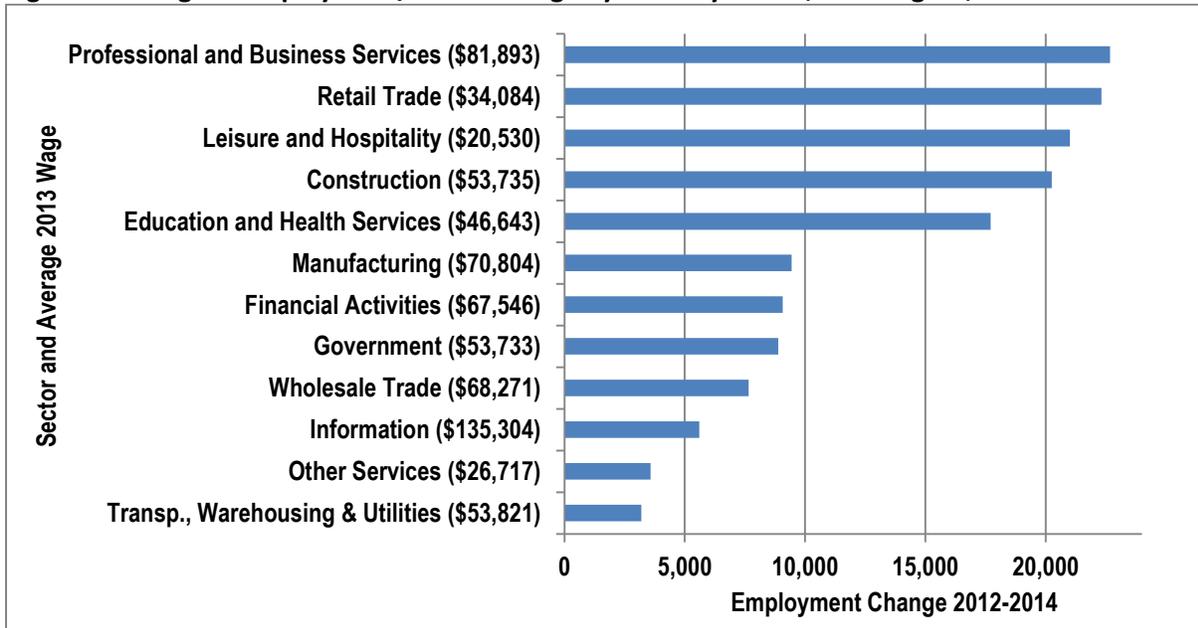
Figure 6. Employment by Industry, Washington, 2014



Source: Washington Employment Security Department, Quarterly Benchmarked Employment

While public sector employment remained solid, it has lagged other sectors both in terms of job growth and average wages in recent years. The professional & business services led all sectors in job growth the last few years, adding 22,700 jobs between 2012 and 2014. The sector had an average wage of \$81,893, higher than all except information (\$135,304). Retail trade, and leisure and hospitality, had the second and third highest growth, but had relatively low wages. The average retail wage was \$34,084, while those in the leisure and hospitality field, earned an average of \$20,530. Transportation, warehousing, and utilities sector added the fewest jobs during the 2012-14 period. However, the average annual wage sat at \$53,821—more than double what those in the growing leisure and hospitality field earned.

Figure 7. Change in Employment/ Annual Wage by Industry Sector, Washington, 2012 to 2014

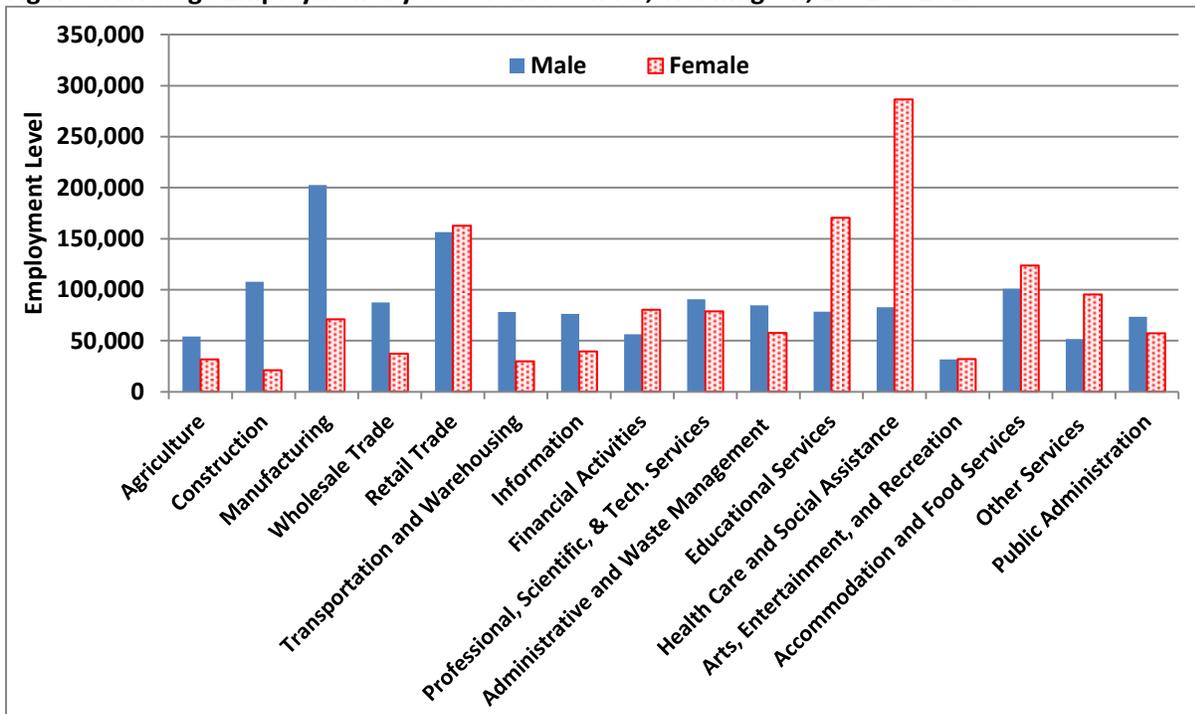


Source: U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment*

Washingtonians of different ethnicities are impacted by shifting sector trends in different ways. For example Asians work in disproportionately high numbers in the information and manufacturing sectors, African Americans in transportation & warehousing and administrative & waste management.⁹ The sector one works in has a strong influence on continued employment opportunities and wage gains.

⁹ U.S. Census Bureau, Longitudinal Employer Household Dynamics.

Figure 8. Average Employment by Sector and Gender, Washington, 2002 to 2013



Source: U.S. Census Bureau, Longitudinal Employer Household Dynamics.

*This chart measures 2002 (Quarter 4) through 2013 (Quarter 3).

During the recession, men were particularly hard hit because the downturn centered on construction and manufacturing – sectors with high concentrations of male workers. The highest paying sector, information, is also a male-dominated industry.

Sectors such as education and healthcare (both with large numbers of female workers) weathered the recession well, but have since tapered off. Other sectors with a high percentage of female workers, accommodation & food services and other services have had strong employment growth, but very low wages.

Sector Strategy

The Washington State Office of Economic Development and Competitiveness within the state’s Department of Commerce focuses on seven sectors: aerospace; agriculture; clean technology; information and communication technology; life science and global health; maritime, and military.¹⁰ These sectors were chosen for the opportunities they offered to support existing employers and develop new ones.

The table below shows gross business income (GBI) and employment levels for the sectors. Gross business income is similar to gross domestic product (GDP) and is indicative of economic impact. Taken

¹⁰ <http://www.commerce.wa.gov/Economic-Development/Industry-Sectors/Pages/default.aspx>

together, the six sectors in the table below account for 17 percent of statewide employment and 21 percent of statewide gross business income.¹¹

Figure 9. Employment and Gross Business Income (GBI) for Strategic Sectors, Washington, 2009-2013

Sector	Metric	2009	2010	2011	2012	2013
State as a whole	GBI (billions)	\$566	\$582	\$614	\$646	\$683
	Employment	2,863,967	2,836,892	2,873,417	2,921,667	2,990,442
Agriculture	GBI	\$9,122,413,902	\$9,820,711,782	\$11,303,791,362	\$11,497,229,617	\$12,970,409,158
	Employment	115,829	113,787	116,913	123,508	123,817
Aerospace	GBI	\$37,708,587,444	\$35,673,428,287	\$39,451,484,524	\$51,580,207,722	\$57,077,906,362
	Employment	82,918	80,760	86,574	94,218	96,012
Information and Communications Technology	GBI	\$38,109,436,684	\$43,836,019,607	\$34,062,394,478	\$33,776,170,169	\$36,376,147,078
	Employment	137,838	139,991	146,339	154,522	163,528
Life Sciences	GBI	\$8,499,749,407	\$8,020,591,619	\$7,795,590,384	\$7,267,424,110	\$7,197,807,027
	Employment	35,107	35,587	36,118	35,328	34,292
Maritime	GBI	\$11,544,144,335	\$12,834,056,927	\$14,130,047,938	\$14,465,239,113	\$14,570,677,332
	Employment	45,481	44,945	45,824	46,658	46,725
Clean Technology	GBI	\$14,994,071,455	\$15,519,195,028	\$16,425,637,591	\$16,359,563,859	\$16,798,101,238
	Employment	55,678	55,992	56,568	55,562	56,456
Total (6 sectors)	GBI	\$119,978,403,227	\$125,704,003,250	\$123,168,946,277	\$134,945,834,590	\$144,991,048,195
	Employment	472,851	471,062	488,336	509,796	520,830

Sources: Washington Department of Commerce, Employment Security Department, and Department of Revenue

Wage Trends

In 2013, Washington's per capita income reached \$47,717, up 38 percent from 10 years earlier.¹² This amounts to a seemingly decent average annual increase of 3.3 percent, but it doesn't take into account inflation. The Bureau of Economic Analysis publishes inflation adjusted per capita income from 2008 to 2012, and during this time the figure fell slightly for Washington. This indicates that in real terms average income has been falling in recent years instead of climbing.

Earnings, of course, vary based on the industry people work in, along with the skills and experience they bring. There are also demographic differences. For example, women have consistently earned less than men. This divergence has grown recently, perhaps driven by the recovery in male-dominated industries such as construction, causing a rise in men's wages.

¹¹ Military is not shown given difficulty in deriving comparative data.

¹² This figure reflects all income sources, not just wages.

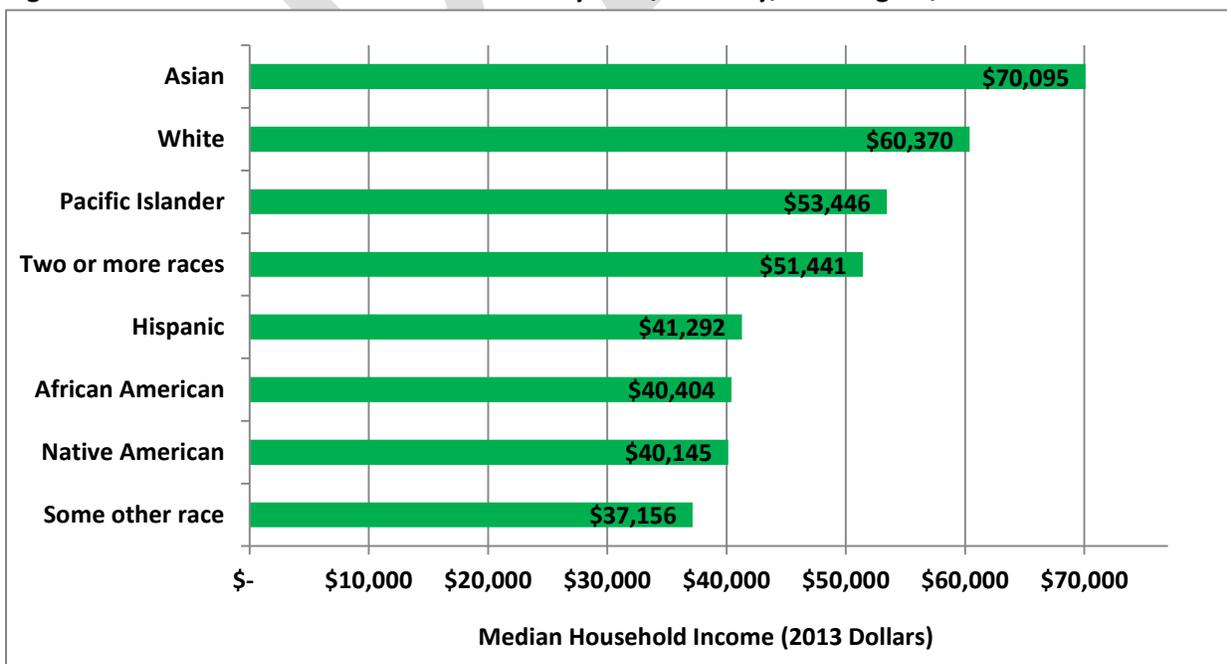
Figure 10. Average Annual Wage by Gender, Washington, 2010-2013



Source: U.S. Census Bureau, Longitudinal Employer Household Dynamics

There are also wage and income disparities by race and ethnicity. Asians had the highest median household income (\$70,095) in 2013 (see chart below), followed by whites (\$60,370). Thereafter median income drops to \$53,446 for Pacific Islander households and then falls further to the \$40,000 range for Hispanics, African Americans, and Native Americans.

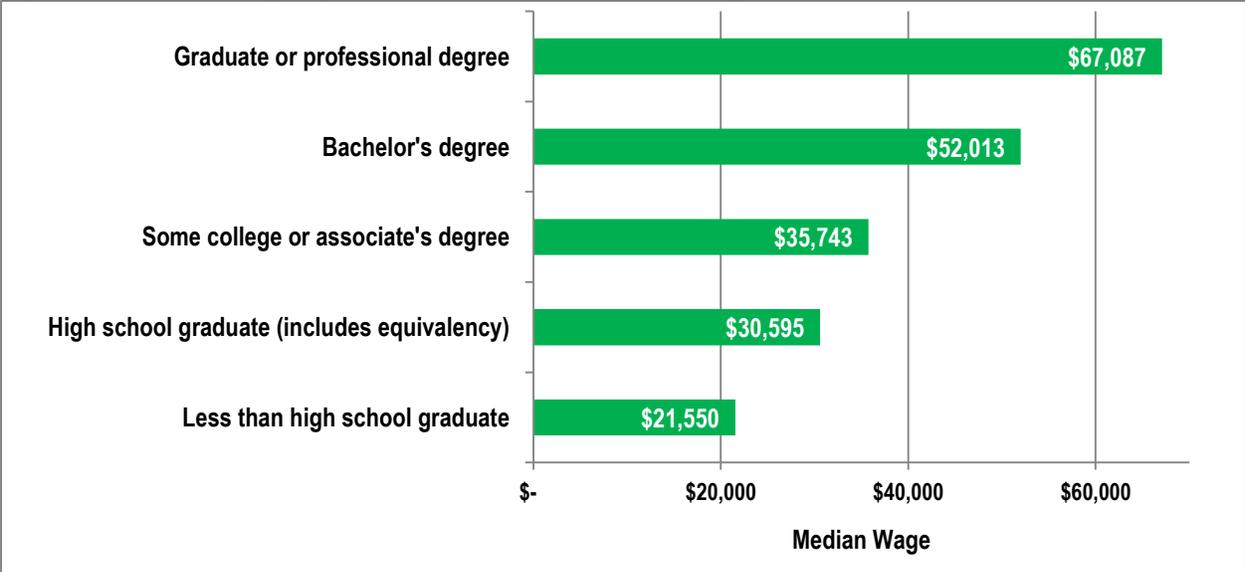
Figure 11. Median Household Annual Income by Race/Ethnicity, Washington, 2011-2013



Source: U.S. Census Bureau, American Community Survey, three-year average

Higher wages are associated with higher educational attainment. The median wage for Washington residents with a graduate or professional degree was \$67,087 in 2013. This was more than three times the median earnings of those without a high school diploma.

Figure 12. Median Wage by Educational Attainment, Washington, 2013



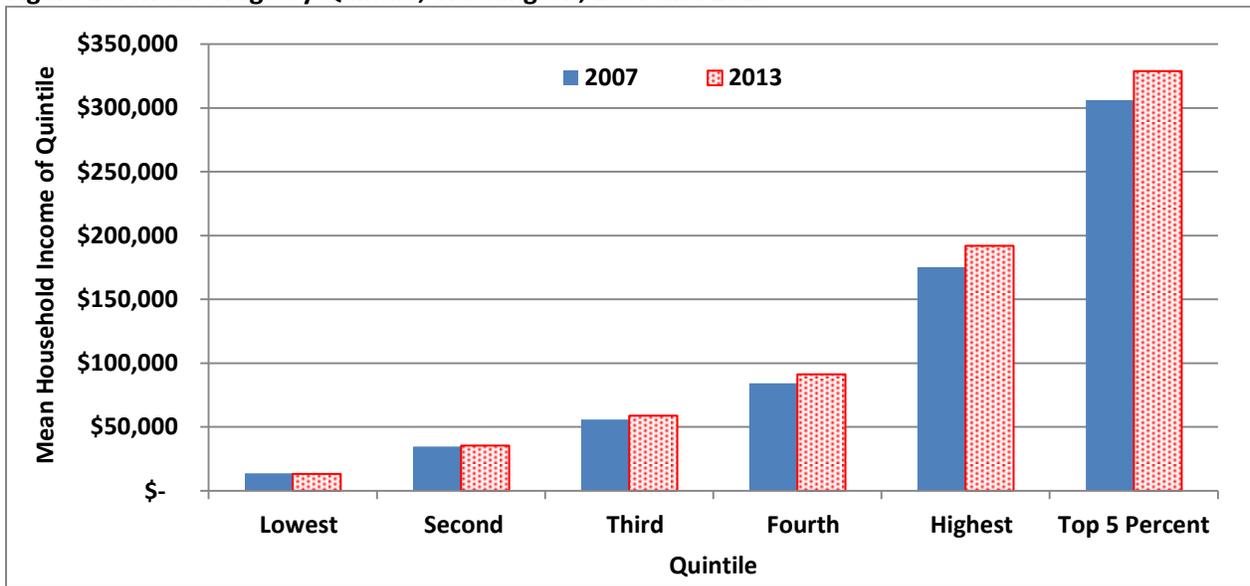
Source: U.S. Census Bureau, American Community Survey

Equality in the age of Piketty

The issue of income inequality and wealth distribution has become a hot topic in recent years. In 2013, French economist Thomas Piketty authored “Capital in the 21st Century,” which quickly became a New York Times best seller, despite being a fairly dry treatise that attempts to explain rising income inequality worldwide.

A traditional index for measuring income equality is the Gini coefficient. Gini measures how equal or unequal income is distributed in a region, with zero representing complete equality and one representing complete inequality. Washington’s coefficient in 2013 was 0.4811 making it the 18th “most equal” state in the country. Despite the relatively high rating, income inequality in Washington appears to be rising, moving up from 0.444 in 2007. This distribution can also be seen in the following chart, showing the most income growth in the top five and 20 percent of households. The poorest 20 percent (quintile) saw a decrease in average wages, while the middle quintiles saw very small increases.

Figure 13. Mean Wage by Quintile, Washington, 2007 and 2013



Source: U.S. Census Bureau, American Community Survey

Looking Ahead

Forecasts

Most forecasts including the one by the state’s Economic and Revenue Forecast Council (ERFC),¹³ project the national economy to continue expanding at a little over 3 percent per year for 2015 and 2016 before slowing down to just over 2 percent a year by 2019. Employment growth is expected to stay somewhat below GDP growth – ranging from 2.0 percent to 0.6 percent per year.

Washington’s employment growth is expected to follow the same trajectory, but at a little higher rate (ranging from 2.2 percent to 1.1 percent). Unemployment is forecast to continue to fall through 2019. The construction and professional & business services industries are expected to account for much of the growth, whereas aerospace and financial activities have projected net job losses.

Average annual wage growth is predicted to rise through the next several years, reaching over 4 percent by 2014 (ERFC). For all of Washington’s residents to benefit from rising incomes, the hope is that this wage growth is driven by widespread wage gains, and not simply increases at the top end, which has been the story as of late.

Factors behind the forecast

So far, construction growth is primarily a rebound from the contraction that occurred during the recession. Housing and real estate prices have rebounded strongly in the Seattle area and it will be interesting to see if this pushes housing demand elsewhere in the state.

¹³ <http://www.erfc.wa.gov/>

Firms that provide accounting, computer and engineering services, as well as physical and biological research, have all shown strong recent growth as well as good potential going forward. Aerospace, which is projected to lose jobs, is likely to do so because of efficiency gains and not to loss of job orders.

When it comes to health care, several factors are likely to boost growth in this sector. Across the nation, and here in Washington, the population of older people is rising. By 2030, one in five Americans will be a senior citizen (65 years or older). That's nearly double the 12 percent in 2000.¹⁴ The state's aging population will require more health care, both among primary care providers and specialists. Expanded medical coverage under the Affordable Care Act is also expected to increase demand for health care as previously uninsured people gain access through the national health care law. At the same time, efforts to lower costs may shift how health care workers are deployed, for example, by replacing highly paid, higher educated registered nurses with lower-wage LPNs and health aides or increasing the reliance on physician's assistants in place of doctors.

A second impact of the aging population will be on the workforce participation rate. As earlier noted, it has been falling – a trend that could speed up as baby boomers age out of the workforce. To counter this it will be necessary to better engage younger workers and to some extent encourage older workers to remain in the workforce. If labor force participation rates continue to fall, it is likely to be a significant drag on economic growth.

Another recent trend which could be a drag on the economy is rising income inequality. International Monetary Fund researchers found that decreased social mobility and stagnating incomes associated with inequality are likely to hurt an economy's long-term growth potential.¹⁵

Macroeconomic conditions like currency and inflation fluctuations will directly and indirectly affect economic growth and labor market outcomes. As of early 2015, the dollar surged in value, which puts Washington's exports at a competitive disadvantage and by extension those working in export industries. Washington is an export-dependent state and was the third highest exporting state in 2014. Washington's number one trade partner, China, is experiencing economic instability and that may decrease exports.

Inflation and interest rates have remained relatively low since the 1980s, and since the Great Recession, the Federal Reserve, (the U.S. central banking system), has kept interest rates low in an effort to stimulate the economy. But should inflation begin rising, the Federal Reserve would be forced to raise interest rates to push down inflation. These policies could be detrimental to construction and other industries, which have benefited from low inflation and interest rates.

Occupational demand

The following table shows occupations projected to have the most openings due to growth – openings that are not due to turnover, as is often the case in high-churn occupations such as retail or restaurant work. These growth occupations reflect some of the trends previously discussed.

¹⁴ "The State of Aging and Health in America," a 2013 report, U.S. Centers for Disease Control and Prevention.

¹⁵ Redistribution, inequality, and growth, Ostry, J.D, Berg, A, & Tsangarides, C.G. IMF Staff Discussion Note, SDN/14/02, 2014.

The top growth occupation, software developers, illustrates the increasing demand for technical skills as well as the important role that software and IT play in Washington. The expected continued growth in the construction and healthcare industries is mirrored on the occupation side with increased demand for carpenters, construction laborers, registered nurses, and personal care aides. Most of the rest of the growth occupations are service jobs which share the characteristic of not being easily outsourced.

Figure 14. Growth Occupations, Washington, 2012-2022

Occupational title	Estimated employment 2012	Estimated employment 2017	Estimated employment 2022	Average annual growth rate 2012-2022	Average annual opening due to growth 2012-2017	Average annual opening due to growth 2017-2022
Construction Laborers	22,744	28,293	30,725	3.1%	1,110	486
Carpenters	36,638	45,432	49,229	3.0%	1,759	759
Software Developers, Applications	53,197	61,284	67,375	2.4%	1,617	1,218
Landscaping and Groundskeeping Workers	29,103	33,170	36,376	2.3%	813	641
Personal Care Aides	29,964	33,494	37,369	2.2%	706	775
Janitors and Cleaners	43,095	48,074	52,042	1.9%	996	794
Registered Nurses	54,547	60,063	65,211	1.8%	1,103	1,030
Secretaries and Administrative Assistants	42,097	46,682	50,211	1.8%	917	706
Bookkeeping, Accounting, & Auditing Clerks	44,947	50,195	53,479	1.8%	1,050	657
Sales Representatives, Wholesale & Mfg.	36,942	41,346	43,889	1.7%	881	509
Waiters and Waitresses	42,247	47,113	50,133	1.7%	973	604
Food Preparation and Serving Workers	56,702	63,174	67,246	1.7%	1,294	814
Customer Service Representatives	41,128	45,744	48,759	1.7%	923	603
Retail Salespersons	104,059	112,087	118,020	1.3%	1,606	1,187
Maids and Housekeeping Cleaners	53,484	56,537	60,604	1.3%	611	813

Source: Washington Employment Security Department

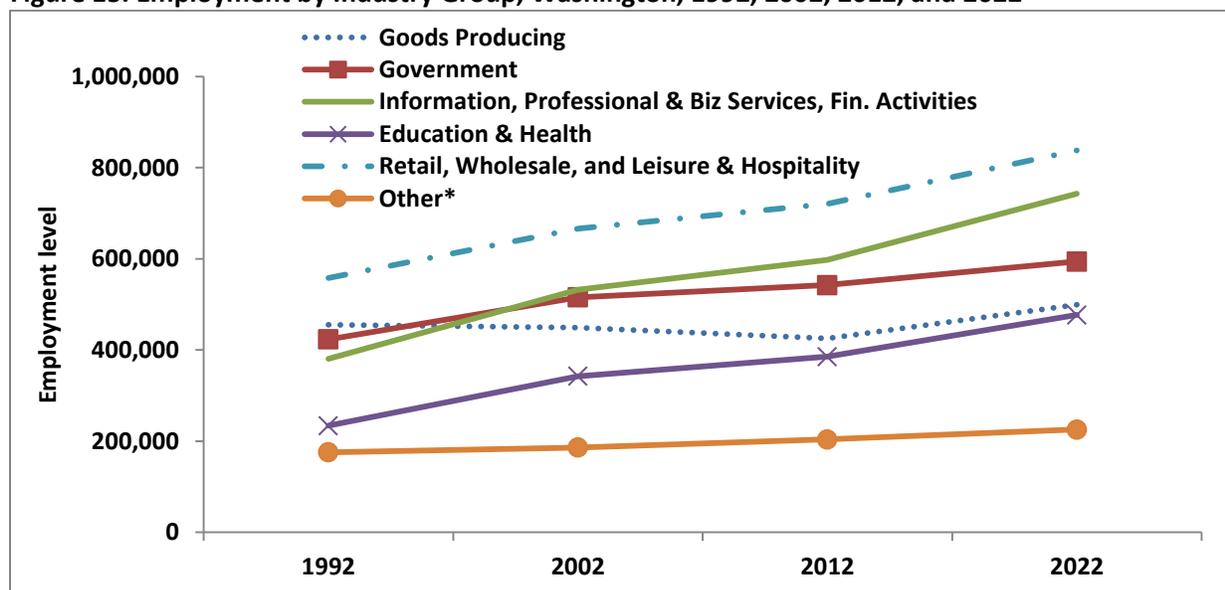
Industry changes

Early on, Washingtonians were more likely to find work in resource extraction industries like timber and fishing than any other industry. From World War II on, with the emergence of ship and airplane building, manufacturing became the state's largest industry and biggest employing sector. In the late 1940s manufacturing accounted for nearly half of the state's employment, but its share has fallen steadily over the years and now accounts for less than 10 percent of employment. A variety of service industries have taken up most of the share, a trend which is likely to accelerate in the coming years.

Industries can be grouped into two major sets: 1) the goods producing industries (manufacturing, construction, and natural resources); and 2) service industries (wholesale trade, retail trade, transportation, warehousing, utilities, information, financial services, professional & business services, education, health, and government). The following chart tracks employment in the combined goods

producing industries against several of the combined service industries. What is clear is that the goods producing industries have lost ground against service industries in general, but in particular against the “Retail, Wholesale, and Leisure & Hospitality”, the “Information, Professional & Business Service, and Financial Activities”, and the “Education & Health” groups.

Figure 15. Employment by Industry Group, Washington, 1992, 2002, 2012, and 2022



Source: Washington Employment Security Department

*Other consists of transportation, warehousing and utilities as well as “other services.”

Overall for the 30-year period (and assuming the 10-year forecast period), education and health would have the fastest annual average growth at 2.4 percent, followed by the professional services with 2.3 percent. The slowest growing is goods producers (0.3 percent), followed by other industries (0.8 percent). In short, the forecast anticipates high-turnover, low-wage industries to grow enough to remain the largest in terms of employment, while professional services and education & health become increasingly more important economic drivers, primarily at the expense of goods-producers.

Skill shortages

Employer perspective

Despite large numbers of jobseekers, companies still have difficulties finding workers with specific skills. To better measure the needs of industry, the Workforce Board every two years administers and publishes an Employer Needs and Practices Survey.¹⁶ The most recent survey, conducted in 2012, featured responses from 2,800 employers.

According to survey results, over half of firms hired new employees, but among those attempting to hire about one-fifth experienced difficulties. Just over half of high-tech industries reported hiring difficulties,

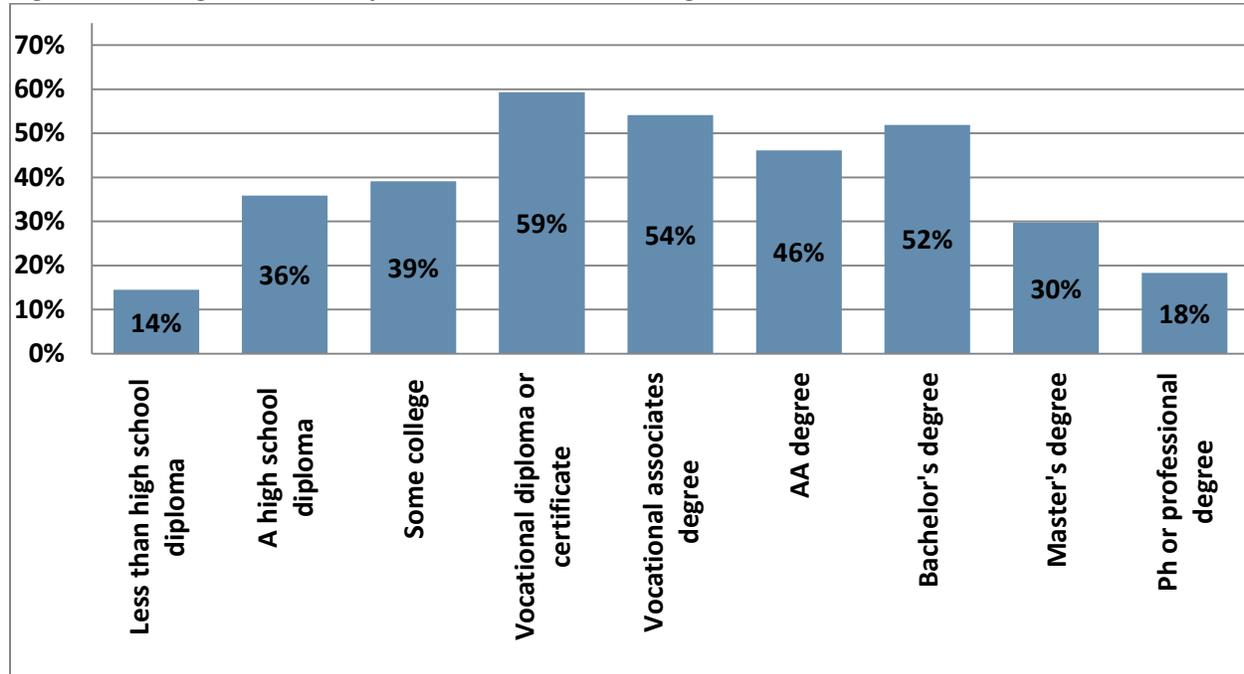
¹⁶ <http://wtb.wa.gov/Documents/Employersurvey2012-Summary.pdf>

more than any other industry. Construction and agriculture also reported a high degree of hiring challenges.

Education level impacts hiring

Firms had the hardest time filling jobs that required vocational diplomas or certificates – 59 percent of those that hired from this educational category had difficulties. Jobs requiring less than a high school diploma were the easiest to fill.

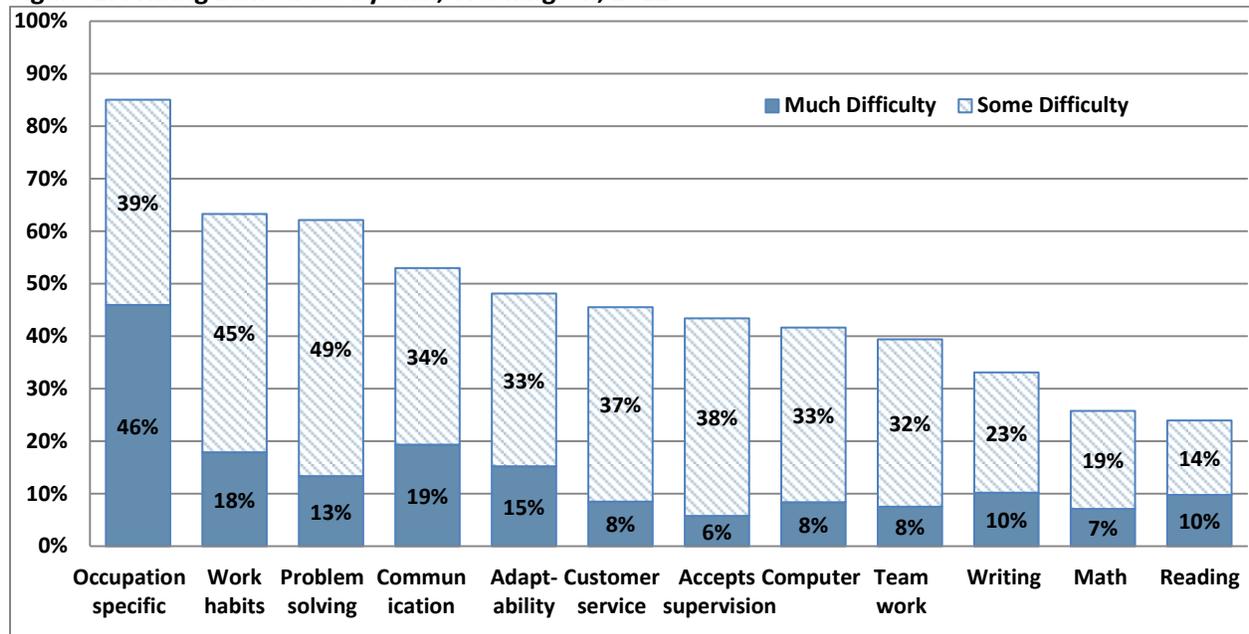
Figure 16. Hiring Difficulties by Education Level, Washington, 2012



Source: Workforce Board, 2012 Employer Needs and Practices Survey

Firms encountered the most difficulty in hiring for occupation-specific skills. Only 15 percent of firms had no trouble hiring employees with occupation specific skills. Hiring employees with solid work habits and problem-solving skills proved difficult. Firms had the least difficulty hiring employees with sufficient math and writing skills.

Figure 17. Hiring Difficulties by Skill, Washington, 2012



Source: Workforce Board, 2012 Employer Needs and Practices Survey

Projected skill gaps

Aligning the state’s degree production with projected job openings can be difficult. Students begin education programs that can take several years to complete. In the meantime, demand for occupations can change from the time students begin their training. Assessing future demand against supply can help residents make good choices about what to study. It also can help education institutions determine which programs to beef up, and which ones to scale back.

To help match the output of degrees with future openings, education agencies focus on three different education levels—“mid-level” education that requires more than a year of post-high school training or education, but less than a bachelor’s degree, a bachelor’s degree, and a graduate degree.

By breaking down labor market demand for these three broad education categories, policymakers, workforce professionals, educators, legislators and others can help boost supply in key areas, and reduce capacity in areas expected to shrink.

In the following table the current output of completers by education level is compared against the demand expected over the next six years (2016-2021). While demand for mid-level training occupations is expected to be highest among the three education levels, so is the current level of completions. However, the mid-level skill gap becomes more troubling when comparing completions with the education level needed to be competitive in the job market.

When assessed this way, the number of projected mid-level openings is estimated at nearly 6,000 more per year than the number of completions, if they continue at their current rate.¹⁷ The skill gap for bachelor’s degrees is anticipated to be even steeper--as much as 13,000 annually.

Figure 18. Projected Skill Gaps by Education Level, Washington, 2016-2021

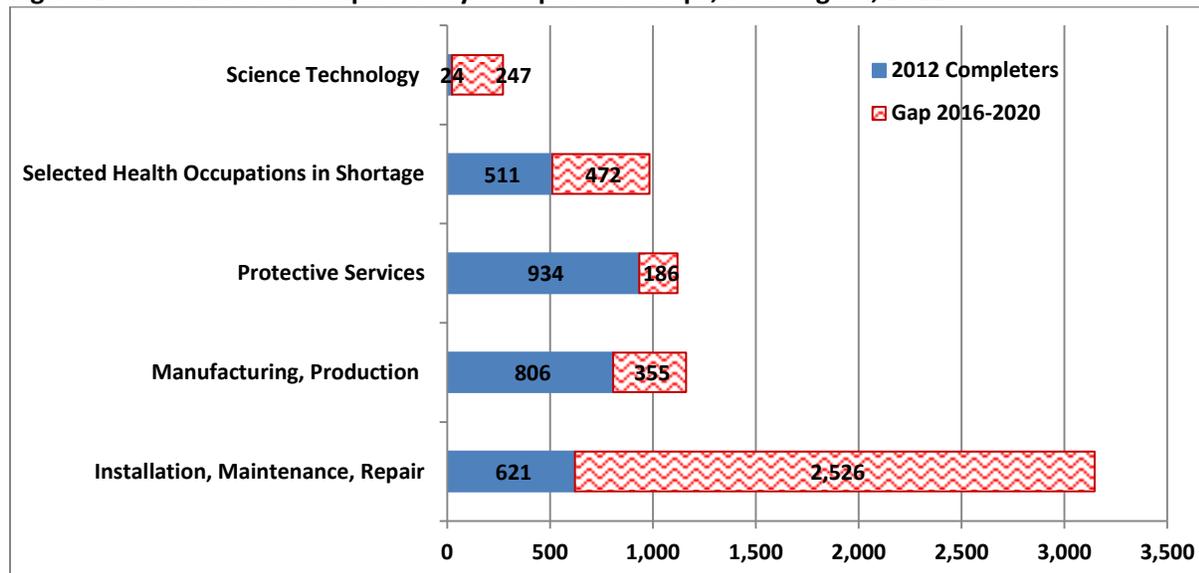
Education/Training Level	Current Completions	Total Annual Completions Needed 2016-21	
		Entry Education Level*	Competitive Education Level**
Mid-Level	59,472	55,532	66,049
Baccalaureate	32,376	37,614	45,259
Graduate	12,155	7,710	18,218

*Source: A Skilled and Educated Workforce, 2013 update, a joint report from the Workforce Board, the State Board for Community and Technical Colleges and the Washington Student Achievement Council. *Entry level as defined by U.S. Bureau of Labor Statistics, defined as the most typical education level required for a particular occupation. **Actual levels of training/education held by employed workers (Source: American Community Survey)*

¹⁷ The “competitive education level” is considered to be more accurate because it doesn’t rely on one education qualification and tie it to the job. Instead it looks at the actual continuum of training levels found within a given occupation.

Among mid-level training occupations, the installation, maintenance, and repair group faces the largest skills gap through 2020. Some key occupations in this group are HVAC repairers, welders, and machinists. For science and technology occupations the gap is small (in overall numbers), but when compared with the number of completers is proportionately high.¹⁸ Healthcare is also facing a sizeable skill gap, with mid-level demand about twice the size of the supply.

Figure 19. Mid-Level Skill Gaps for Key Occupation Groups, Washington, 2012



Source: *A Skilled and Educated Workforce, 2013 update, a joint report from the Workforce Board, the State Board for Community and Technical Colleges and the Washington Student Achievement Council.*

Changing nature of work

Some estimates put one third of the nation's workforce as being contingent (working on a non-permanent basis), possibly rising above 40 percent by 2020.¹⁹ This trend toward a more freelance workforce promises increased flexibility for employers. The downside is that it will make finding a traditional full-time job with benefits and job security harder to find. However, it is likely to lower costs for firms and increase their potential pool of workers.

Changing technology has lowered the start-up costs for certain types of business, particularly IT-related, which should increase the overall amount of new business creation. This is also likely to lead to whole new lines of goods and services produced.

As seen in Figure 14, which outlines high-growth occupations, a substantial number of jobs will require no education beyond high school. In fact, the Bureau of Labor Statistics predicts jobs requiring a high school diploma will have the most openings by 2022, accounting for nearly a third of the total. However,

¹⁸ Science technology occupations tend to be filled by those with four-year degrees and above. Relatively few jobs in this occupation group are targeted at the mid-level.

¹⁹ http://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf

the Bureau projects a higher growth rate among occupations requiring postsecondary education and training. In particular, occupations requiring an associate's degree are expected to have the second highest growth rate (17.6 percent) of any educational category.²⁰

“Skills upgrading will be an on-going necessity for all economies as changing skill requirements are accelerated by changing patterns of production, trade, international competition and technological innovation. These changes can be beneficial but require policies and institutions to help individuals and enterprises adapt and to help offset the risks and costs, particularly for low-income and vulnerable workers. Availability of quality, relevant training for in-demand skills and occupations is a key factor, along with accessible and timely labour market information.”

- *Organisation for Economic Co-operation and Development (OECD), & World Bank Group*²¹

Summary and Implications

By 2011 the nation's economic output surpassed the pre-recession level and by early 2014 it surpassed the pre-recession employment level. However, certain groups such as youth and those without postsecondary training have not recovered to their pre-recession employment and wage outcomes. Labor force participation rates have continued downward, reflecting increasing numbers of discouraged workers opting out altogether.

Average wages have been rising, mostly due to rising incomes at the top while there has been stagnation among low-income earners. There are also significant and enduring earning disparities between age groups, males and females, and different races.

All of this is important to our economy and labor markets going forward as Washington's workforce grows older, more female, and increasingly diverse. Education and training are now more important than ever, along with identifying which skills will be in demand in the future.

Economic growth is forecasted to be moderate in the near-term. Industries such as construction, health, and professional and technical services should be doing much of the hiring. At the same time, the state's Department of Commerce has identified seven strategic sectors based on their importance in the current economy as well as opportunities for growth.

Occupations projected to be in demand in the future are a mix of information technology, construction, healthcare, and various service jobs. Information technology, construction, and healthcare occupations generally require postsecondary training and are relatively well compensated. Service sector jobs projected to be in-demand tend to be those that are difficult to outsource and largely unaffected by global competition, but pay relatively low wages.

²⁰ <http://www.bls.gov/opub/mlr/2013/article/overview-of-projections-to-2022-1.htm>

²¹ G20 Labour Markets: outlook, key challenges and policy responses. International Labour Organization, Organization for Economic Co-operation and Development, & World Bank Group, September 2014, Page 17.

Despite economic stagnation in Europe and Japan, as well as slowing growth in China, globalism will remain a force to be reckoned with. Washington is well positioned for foreign trade, selling everything from airplanes to medical devices and information services. However, these items can and will be produced elsewhere unless the state remains competitive in terms of education, infrastructure, and worker productivity.

Macroeconomic conditions such as currency and inflation fluctuations will directly and indirectly affect economic growth and labor market outcomes. As of early 2015, the dollar surged in value, putting Washington's exports at a competitive disadvantage and by extension those working in export industries. Inflation and interest rates have remained low, but should that change it could set off policies that could be detrimental to construction and other industries.

Changing technology will also influence and challenge state labor markets. So far, the rise of new technology (composites) and new services (Internet retailers) have been a boon to Washington. But unless the state can continue to innovate and develop new products and services, it will fall behind. Investing in education, encouraging partnerships between training providers and employers, and fostering a strong entrepreneurial environment are key ingredients to maintaining a thriving economy and a comfortable standard of living for the citizens who live and work here.