

The background of the cover is a photograph of the Washington State Capitol building. The building is a large, classical-style structure with a prominent central dome and a portico supported by several columns. The scene is framed by the branches of cherry blossom trees in full bloom, with white flowers and green leaves visible in the foreground and around the building. The sky is a clear, bright blue.

Washington State Economic and Revenue Forecast

June 2018
Volume XLI, No. 2



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Washington State Economic and Revenue Forecast

Prepared by the
Economic and Revenue Forecast Council

June 2018
Volume XLI, No. 2

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Preface

ERFC forecasting structure and schedule

The Economic and Revenue Forecast Council is required by Chapter 231, Section 34, Laws of 1992 (RCW 82.33.020) to prepare a quarterly state economic and revenue forecast and submit it to the Forecast Council. This report presents the state's economic and General Fund-State revenue forecast. It is issued four times a year. The Washington State GF-S revenue forecast is prepared quarterly in conjunction with the state economic forecast for the Economic and Revenue Forecast Council. The Council consists of six members, two appointed by the Governor and four appointed by the Legislature – one from each caucus of the Senate and House of Representatives. Current members of the Economic and Revenue Forecast Council are listed inside the front cover of this publication. The GF-S revenue forecast is updated four times per year: March (February in even-numbered years), June, September, and November. The staff of the Economic and Revenue Forecast Council is responsible for the preparation of the state's economic forecast and the forecast of the Department of Revenue's GF-S revenue sources as well as GF-S revenue from fines and forfeitures collected by the Administrative Office of the Courts. The staff is also responsible for review and coordination of the revenue forecasts of other agencies that collect relatively large amounts of GF-S revenue. These are the Department of Licensing, the Office of the Insurance Commissioner, the Lottery Commission, the State Treasurer, the Liquor and Cannabis Board and the Office of Financial Management. The Office of Financial Management is responsible for summarizing the forecasts of all other state agencies that collect relatively smaller amounts of GF-S revenue.

Forecast Procedure

For each quarterly update, the staff of the Economic and Revenue Forecast Council, under the direction of the Executive Director, reviews (and if warranted, modifies) a national economic forecast prepared by Global Insight, Inc. A state economic forecast is then prepared using an econometric model that links Washington's economy to the national economy. After review by forecast workgroups; the Governor's Council of Economic Advisors; and the Economic and Revenue Forecast Council, this state economic forecast (updated for newly released data) is used to prepare a baseline revenue forecast for GF-S and the related funds. The forecasts are based on current law and administrative practices and do not reflect pending legal challenges to GF-S receipts until they are resolved. Additionally, at least two alternative forecasts are prepared for all GF-S and related fund sources and presented to the Forecast Council for approval. Once the Council approves the forecast, it becomes the official forecast of GF-S and related fund revenues.

Data in this publication are accurate through June 28, 2018.

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Executive Summary

- **The national economy continues to expand at a moderate pace. Real GDP rose 2.0% (SAAR) in the first quarter after growing 2.9% (SAAR) in the fourth quarter of last year.**
- **The forecast for real GDP growth in 2018 was increased from 2.7% to 2.9% and 2019 growth was increased from 2.4% to 2.6%. Growth for 2020 and 2021 was revised down to 1.9% per year from 2.1% and 2.0% in the previous forecast. The forecast calls for growth of 2.1% in 2022 and 2023.**
- **Washington real GDP growth and personal income growth led the nation in 2017.**
- **The Washington personal income forecast is higher than in February but employment growth is lower.**
- **As in February, we expect the Washington economy to continue to outperform the U.S. economy.**
- **General Fund-State (GF-S) revenue collections since the February 2018 forecast have come in \$189 million over the forecasted amount.**
- **Legislative and budget driven revenue changes since the February forecast have reduced forecasted GF-S revenues by \$1.2 billion in the current biennium and \$180 million in the 2019-21 biennium.**
- **\$935 million of the legislative forecast reduction in the current biennium is a transfer of funds from the GF-S to the near GF-S rather than a reduction in total state revenue.**
- **Due to the legislative changes, forecasted GF-S revenue has decreased by \$680 million in the current biennium, but forecasted GF-S revenue has increased by \$267 million in the 2019-21 biennium and \$350 million in the 2021-23 biennium.**
- **Near GF-S revenue, which includes all state revenue subject to the budget outlook process, is forecasted to increase by \$280 million in the current biennium, \$287 million in the 2019-21 biennium and \$380 million in the 2021-23 biennium.**

U.S. Economic Forecast

The national economy continues to expand at a moderate pace

The national economy continues to expand at a moderate pace. Real GDP rose 2.0% (SAAR) in the first quarter after growing 2.9% in the fourth quarter of last year. Job gains have remained solid even as the economy is at full employment. The

unemployment rate has fallen to below 4%. Consumer and business confidence remain at cyclical highs. The housing market continues to improve. Oil prices have increased but remain well below pre-recession levels. Monetary policy has remained steady and we do not expect a shift under the new leadership. Exports have rebounded. Geopolitical risks, while elevated, have had little impact on the U.S. economy.

The economic outlook has improved

The economic outlook is stronger in the near term than the February forecast. Our June forecast for real GDP growth in 2018 was increased from 2.7% to 2.9% and 2019 growth was increased from 2.4% to 2.6%. Growth for 2020 and 2021 was revised down to 1.9% from 2.1% and 2.0% in the previous forecast. The forecast calls for growth of 2.1% in 2022 and 2023.

Washington Economic Forecast

The Washington economy is expanding at a rapid pace

The Washington economy is expanding at a rapid pace. Washington real GDP growth and personal income growth led the nation in 2017. Washington unemployment remains near a historic low. Seattle home prices continue to rise very rapidly and housing construction remains strong. Washington exports are rising and manufacturing is growing. Seattle area consumer price inflation is well above the national average due to higher shelter cost inflation.

The June forecast for Washington State is similar to the February forecast

The June forecast for Washington State is similar to the February forecast. Washington employment is expected to grow 2.5% this year compared to 2.2% in the February forecast. We expect employment growth to average 1.1% per year in 2019 through 2023, which is slightly weaker than the 1.4% per year expected in the February forecast. Our forecast for nominal personal income growth this year is 5.8%, up from 5.0% in the February forecast. Our new forecast for nominal personal income growth in 2019 through 2023 averages 5.1% per year compared to 5.2% per year in the February forecast. We expect total housing units authorized by building permits to average 45,400 units this year compared to 43,200 in the February forecast. We expect permits to average 42,400 during the next five years compared to 42,500 in February. We expect the all-items Seattle CPI to rise 3.3% this year, up from 3.1% in the February forecast. We expect Seattle area inflation will average 2.3% per year in 2019 through 2023, up from 2.2% in the February forecast.

Revenue Forecast

Excluding legislative changes, the revenue forecast has increased due to stronger...

Since the February 2018 forecast, General Fund – State (GF-S) revenue collections have come in \$189 million higher than forecasted. Much of the collection surplus came from real estate excise taxes, which have continued to exceed expectations. Most of the rest came from stronger than expected retail sales and business and occupation taxes. The large collection surplus,

...than expected tax receipts and changes to the economic forecast

coupled with increases in personal income and other changes to the economic forecast, has resulted in an increase in forecasted revenue. Legislative and budget driven revenue changes since the February forecast, however, have reduced some expected tax receipts and will transfer some funds out of the GF-S into a related account. Despite these changes, total state revenue as measured by the Near General Fund-State is forecasted to increase in all three forecasted biennia.

GF-S forecast change by biennium (millions):

*17-19: -\$680
19-21: +\$267
21-23: +350*

For the current biennium, revenue sources that are tracked monthly have come in \$189.4 million higher than forecasted in February. Changes to the economic forecast resulted in a \$303.6 million increase to projected collections for the rest of the biennium. Legislative changes, however, reduced expected revenue by \$1,173.5 million, for a net GF-S forecast reduction of \$680.4 million in the current 2017-19 biennium. Changes to the economic forecast resulted in a \$447.7 million increase to projected collections for the 2019-21 biennium, but the increase was partially offset by a reduction of \$181.2 million from legislative changes, for a net forecast increase of \$266.5 million. Legislative changes reduced expected revenue in the 2021-23 biennium by only \$7.2 million, reducing the \$356.8 million increase from economic changes to a net \$349.8 million increase for the biennium. The June 2018 forecast for GF-S revenue totals \$43,532.4 million in the 2017-19 biennium, \$48,519.9 million in the 2019-21 and \$52,281.8 million in the 2021-23 biennium.

Near GF-S forecast change by biennium (millions):

*17-19: +\$280
19-21: +\$287
21-23: +380*

The main legislative change that lowered the GF-S forecast in the current biennium was a \$935 million transfer of property tax revenue from the GF-S to the Education Legacy Trust Account, which is part of the Near GF-S. Because of this, forecasted revenue for the Near GF-S, which represents all state revenue subject to the budget outlook process, has increased for the biennium. The forecast of Near General Fund revenue for the 2017-19 biennium is \$45,288.0 million, \$297.9 million more than the June 2018 forecast, and the forecast for the 2019-21 biennium is \$49,363.3 million, \$286.8 million more than the February forecast. The forecast of Near General Fund revenue for the 2021-23 biennium is \$53,170.1 million, \$379.9 million more than the February forecast.

Special Report: Factors Impacting Store-Level Retail Cannabis Sales

Follow-up from prior special report

This analysis is a follow-up to research previously included in the September 2016 forecast publication examining recreational cannabis sales at the county level. Here, the unit of analysis will be individual cannabis retailers with sales in one or more months between July 2014 and June 2017.

Border counties have higher sales

Consistent with our previous analysis of county-level sales, retailers in counties on the Oregon and Idaho borders appear to

have higher sales than would otherwise be the case. Legalization in Oregon appears to have reduced but not eliminated this impact for Oregon border counties.

Length of time a store is open has a positive impact on sales

The length of time a retailer has been open has a positive impact on sales. This could be due to location (if earlier stores were able to obtain the most desirable locations), greater customer awareness, or superior access to products. However, the results indicate that the benefits of longevity decay over time, suggesting that newer retailers may be able to gain market share over time through marketing or gaining access to popular products.



Chapter 1: U.S. Economy – Current Conditions and Forecast

- **The national economy continues to expand at a moderate pace. Real GDP rose 2.0% (SAAR) in the first quarter after growing 2.9% (SAAR) in the fourth quarter of last year.**
- **Employment growth has been solid and the unemployment rate continues to fall.**
- **Consumer and business confidence remain high.**
- **The manufacturing sector is strong and construction is improving.**
- **Oil prices have increased recently.**
- **Inflation has started to pick up.**
- **The forecast for real GDP growth in 2018 was increased from 2.7% to 2.9% and 2019 growth was increased from 2.4% to 2.6%. Growth for 2020 and 2021 was revised down to 1.9% per year from 2.1% and 2.0% in the previous forecast. The forecast calls for growth of 2.1% in 2022 and 2023.**
- **Higher business and consumer confidence leading to more hiring and spending is the most significant upside risk. A slowdown in global growth is the major downside risk.**

Current Conditions

The national economy continues to expand at a moderate pace

The national economy continues to expand at a moderate pace. Real GDP rose 2.0% (SAAR) in the first quarter after growing 2.9% in the fourth quarter of last year. Job gains have remained solid even as the economy is at full employment. The unemployment rate has fallen to below 4%. Consumer and business confidence remain at cyclical highs. The housing market continues to improve. Oil prices have increased but remain well below pre-recession levels. Monetary policy has remained steady and we do not expect a shift under the new leadership. Exports have rebounded. Geopolitical risks, while elevated, have had little impact on the U.S. economy.

U.S. real GDP rose 2.0% (SAAR) in the first quarter

U.S. real GDP rose 2.0% (SAAR) in the first quarter of 2018 after growing 2.9% (SAAR) in the fourth quarter of 2017. Consumer spending was a major source of the slowdown with growth dropping from 4.0% (SAAR) to 0.9% (SAAR). The contribution

from spending to overall growth declined from 2.6 percentage points to just 0.6. A sharp drop in spending on motor vehicles and parts slowed consumption growth. Fixed investment growth was again strong in the first quarter, growing 7.6% (SAAR) and adding 1.2 percentage points to GDP growth. Nonresidential investment was strong while residential investment declined. Final sales increased 2.0% (SAAR) as inventories had virtually no impact on overall growth. Government spending was positive with growth across the board at both the national and state and local levels. Net exports were slightly negative in the first quarter. Real disposable income growth, boosted by tax cuts, accelerated to 3.6% (SAAR) in the first quarter from 1.1% (SAAR) in the fourth quarter.

Employment growth has remained solid

The trend in employment growth remains solid. Nonfarm payrolls increased 223,000 in May after increasing 159,000 in April. In May, private employment rose by 218,000. The goods-producing sector remains strong, increasing by 47,000 jobs with large gains in construction (+25,000) and durable manufacturing (+15,000). Private service-providing industries increased by 171,000 jobs in May. Sectors with the highest job gains were retail trade (+31,100) and health care (+28,900). Professional and business services were strong (+22,600) even as temporary help services declined (-7,800). The unemployment rate declined to 3.8% from 3.9% in May. (see Figure 1.1). Average hourly earnings increased by \$0.04 or 0.3%. Earnings were up 2.7% since last year.

Figure 1.1: Unemployment Rate

The unemployment rate continues to fall



Source: Bureau of Labor Statistics; data through May 2018

Consumer attitudes remain strong

Consumer attitudes are hovering at a high level. In June, the Conference Board measure of consumer confidence declined 2.4 points to 126.4. This is the lowest reading of 2018, but still 9.1 points higher than a year ago. The University of Michigan Consumer Sentiment index rose 1.3 points in June. The index is up 4.2 points from a year ago. Both surveys indicated that

consumers feel confident about current economic conditions. Respondents to both surveys indicated they were less confident about future conditions. According to the Conference Board survey, confidence fell sharply among the under-35 cohort. Confidence among people younger than 35 is down 18.2 points from a year earlier, compared with a 13.5 point gain for the middle-age cohort and a 15.5 point increase for the senior cohort.

Small business confidence remains high

Small business confidence remains high. The National Federation of Independent Business (NFIB) Index of Small Business Optimism increased 3.0 points to 107.8 in May. This is one of the strongest readings in the 45-year history of the survey. The details of the survey were positive. Compensation increases hit a 45-year high. Views about expansion were the most optimistic in survey history. Positive earnings trends were also at a survey high. Quality of labor remains the most cited concern for small businesses. Labor markets for both skilled and unskilled workers are tight. Almost half of small businesses reported few or no qualified applicants for the positions they were trying to fill.

Oil prices have leveled off

Oil prices have leveled off in recent weeks. West Texas Intermediate (WTI) reached \$71 per barrel in May, but has since come down to \$66. Brent crude oil followed a similar path, rising to \$80 in May before coming down to \$75 in the second week of June. Both prices are up from last year. U.S. production has ramped up in response. Oil production in the U.S. is approaching 11 million barrels per day. The number of drilling structures has been increasing lately as prices have climbed. The Baker Hughes rig count was at 1,052 in mid-June, an increase of 111 since last year. Drilling responds to prices with a three to six month lag. The U.K. is also set to become a net crude oil exporter in the near future. This would further limit the influence of OPEC. There is additional uncertainty surrounding oil markets as well. Saudi Arabia is under new leadership at a time when it must navigate the dwindling influence of OPEC. The Venezuelan military has taken over its country's state run oil production. The lack of expertise and corruption has led to a sharp drop in output.

Inflation is slowly increasing

Headline inflation is starting to creep up. The Consumer Price Index (CPI) was up 2.8% over the year in May (see Figure 1.2). Much of the increase was due to an increase in gasoline prices. Gasoline prices increased 1.7% in May, and are now up 21.8% since last year. The leveling-off of oil prices will likely slow the sharp increase in gas prices going forward. Food price inflation remains tame. Prices were flat over the month and are up 1.2% from last year. Shelter costs continue to be a steady driver of overall price inflation as home prices continue to rise. Shelter costs increased 0.3% in May and are now up 3.5% year over year. Core inflation, which excludes food and energy, increased 0.2% in January and is now up 2.2% over the year.

Figure 1.2: Consumer Price Index, Year-Over-Year Percent Change

Inflation is starting to pick up



Source: Bureau of Labor Statistics; data through May 2018

The housing market is continuing to improve

The housing market continues to improve. Housing starts increased 5.0% in May with gains in both the single-family and multi-family segments. Single-family starts increased 3.9% and multi-family starts increased 11.0%. Housing starts are up 20.3% from a year ago. The multi-family segment has fully recovered from the housing downturn. Housing permits fell 4.6% in May but remain up 8.0% from a year ago. Single-family permits are up 7.5% while multi-family permits are up 8.8% since last year. Much like housing starts, multi-family permits have essentially recovered from the housing downturn. New home sales remain strong, increasing 6.7% over-the-month in May. New home sales are up 14.1% since last year. The insufficient supply of new homes is constraining total sales. The inventory-to-sales ratio declined to 5.2 months, down from a 5.5-month supply in April. The National Association of Homebuilders (NAHB) Housing Market Index, which measures confidence of homebuilders, declined 2 points to 68 in June but remains healthy (readings above 50 indicate a positive view of conditions). The lack of traffic from prospective buyers is weighing down the index.

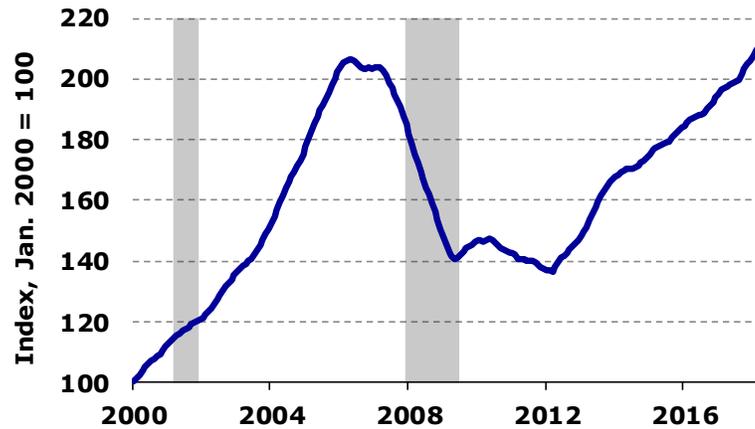
Home price appreciation remains strong

Home price appreciation is strong. The seasonally adjusted Case-Shiller 20-city Home Price Index increased 0.2% over the month in April. Home prices are now 6.5% higher than a year ago. Home prices appear to be picking up steam. Prices have increased 49.6% since the trough, and are now 1.9% above their previous peak (see Figure 1.3). Rising prices encourage new construction, and contribute to the high level of homebuilder confidence. Home price appreciation also enables previously underwater homeowners to sell their homes and trade up for more expensive houses. The benefit of low mortgage rates for homebuyers is diminishing as rates are climbing. The average

rate for a fixed 30-year mortgage has risen 62 basis points since the beginning of the year. The average rate on the 30 year fixed loan was 4.57% in the third week of June.

Figure 1.3: S&P CoreLogic Case-Shiller Composite 20 Home Price Index

Home prices have surpassed the previous peak



Source: S&P CoreLogic; data through April 2018

Strong growth in the manufacturing sector

The manufacturing sector is strong. The Institute of Supply Management (ISM) Report on Business indicated strong growth in the manufacturing sector in May. The index increased to 58.7 from 57.3 (index levels above 50 indicate expansion). The new orders component increased by 2.5 points to 63.7. Production increased 4.3 points to 61.5. The latest G-17 report from the Federal Reserve indicates manufacturing output fell 0.7% in May, although the decline was partially due to a fire at an auto parts supplier. Manufacturing output is now 1.7% higher than last year. New orders for core capital goods (nondefense capital goods excluding aircraft) declined 0.2% in May after surging by 2.3% the month before. New orders are now 6.8% above year-ago levels.

U.S. exports are growing

U.S. exports are accelerating. Total exports increased in the first quarter 8.0% year over year. Aerospace exports increased 8.7% year over year. Petroleum and coal exports again increased 19.2% from a year ago. Oil and gas exports continue to surge, up 46.6% from last year. Global economic growth appears to have cooled, but remains firm. The U.S. dollar remains weaker than last year, making U.S. exports more affordable. Exports to the rest of North America remain strong. Exports in the first quarter to Canada increased 9.5% while exports to Mexico were up 8.6% from a year ago. Exports to China and Japan, our third and fourth largest trading partners, increased 8.9% and 8.6% respectively.

Forecast

Our forecast was based on the June IHS Markit control forecast

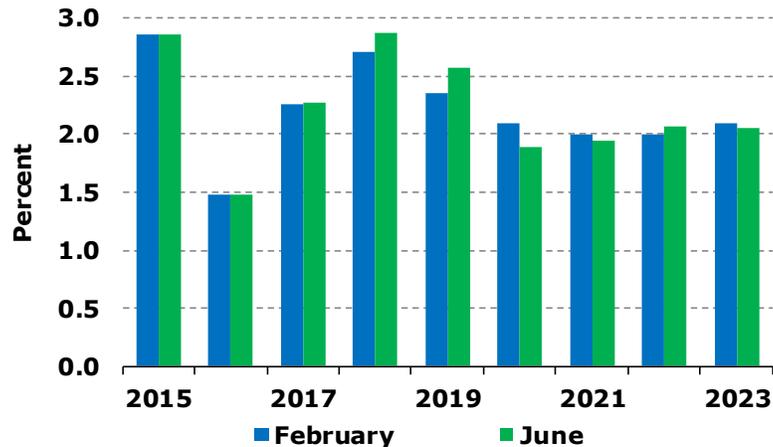
The economic forecast was based on a modified version of the June IHS Markit (formerly Global Insight) control forecast for the U.S. economy. Consistent with our standard practice, the U.S. real GDP forecast was adjusted to match the Blue Chip Consensus GDP forecasts for 2018 and 2019. We also matched the latest long-term Blue Chip GDP forecast for 2020 through 2023. Our oil price forecast was adjusted to reflect futures prices for both Brent crude oil and for West Texas Intermediate crude oil.

The economic outlook has improved compared to the February forecast

The economic outlook is stronger in the near term than the February forecast. Our June forecast for real GDP growth in 2018 was increased from 2.7% to 2.9% and 2019 growth was increased from 2.4% to 2.6%. Growth for 2020 and 2021 was revised down to 1.9% per year from 2.1% and 2.0% in the previous forecast. The forecast calls for growth of 2.1% in 2022 and 2023 (see Figure 1.4).

Figure 1.4: Real GDP Growth

Real GDP growth is slightly higher in the near term



Source: BEA, June ERFC forecast; historical data through 2017

This recovery will be the longest on record

The positive GDP growth throughout the forecast will make the recovery from the 2007-09 recession the longest on record. From the second quarter of 2009 through the end of our forecast in 2023, the recovery will be at least 174 months. Through May, this recovery has already lasted 107 months. Prior to this, the longest recovery was from the 1990-91 recession and lasted 120 months. A major reason for the exceptional length of the current recovery was the depth of the recession. Despite positive GDP growth, the labor market remained weak for an extended period. It took 58 months of recovery just to reach the previous peak in employment. When comparing recoveries in terms of the duration since reaching the previous employment peak, this expansion appears more in line with other post-war expansionary

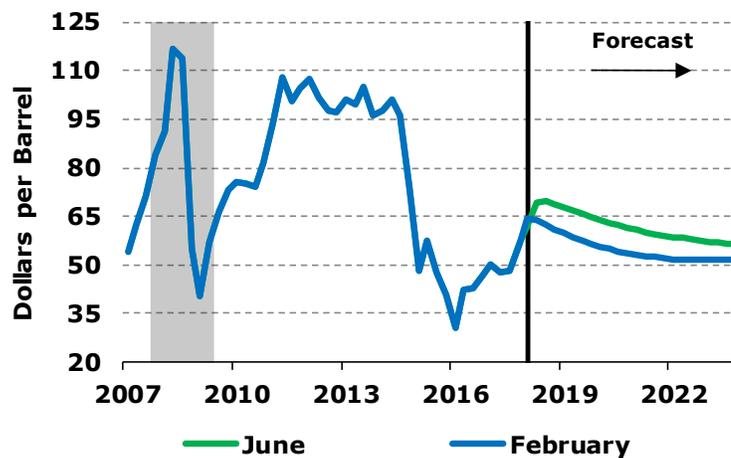
periods. The two longest post-war expansions had 96 and 95 months of additional employment growth after reaching the previous peak. We expect growth to continue through the end of the forecast in 2023, which would result in 115 months of employment gains after reaching the previous employment peak.

Oil prices are expected to decline

Oil prices are higher than the prices used in the February forecast but follow the same pattern of decline. The refiner acquisition price of crude oil is expected to peak at just under \$70 per barrel in the third quarter of this year. The dynamics in the oil market have changed recently. Renewed Iran sanctions and disruptions to Venezuelan production cramped supply. However, other members of OPEC and U.S. shale drillers have more than made up for any reduction in global supply. Oil prices will remain well below the levels seen earlier in the recovery. The forecast calls for prices to decline throughout the forecast, reaching \$56 in 2023.

Figure 1.5: Average Price of Crude Oil

Oil prices are higher throughout the forecast



Source: DOE, June 2018 forecast; historical data through 2018Q1

Inflation will remain moderate

Inflation (as measured by the price index for personal consumption expenditures) has risen in recent years but remained low at 1.7% in 2017. While energy prices remain low, they are rising and adding to overall inflation. Rising housing costs have put upward pressure on inflation as well. We expect low to moderate inflation throughout the forecast. We expect inflation to be 2.1% this year, compared to 1.9% in the February forecast. We then expect inflation to range from 1.9% to 2.1% each year from 2019 through 2023. Core inflation (minus food and energy) is expected to reach the Federal Reserve's goal of 2% next year. The forecast calls for core inflation to be 1.9% this year and increase to 2.2% in 2020 through 2023.

Consumer spending is weak, but we are expecting it to grow

Real consumer spending was weak in the first quarter, growing 1.0% (SAAR) after growing 4.0% (SAAR) in the fourth quarter. We expect real consumer spending to grow 2.6% this year, unchanged from the previous forecast. Consumer optimism remains high. Rising home prices and a stronger stock market make consumers feel more confident in their financial situation. Wages are slowly increasing. Unemployment continues to fall and more part-time workers are finding full-time jobs. The forecast calls for real consumption growth of 2.4% in 2019. Consumer spending growth will then slow to 2.0% in 2020 and 2021 before improving slightly to 2.1% and 2.2% in 2022 and 2023. We expect consumer spending to contribute 1.5 percentage points to real GDP growth on average for each year of the forecast through 2023.

Disposable personal income growth is expected to rebound

Real disposable personal income growth is expected to rebound from 1.2% in 2017 to 2.2% in 2018. The February forecast expected growth of 2.9% this year. Growth in real disposable income is expected to increase to 3.0% in 2019. We anticipate growth to moderate to 2.5% in 2020 and then average 2.2% for the remainder of the forecast. Nominal disposable income is projected to grow 4.3% this year, led by strong growth in wages and salaries of 4.8%. Private sector wages and salaries are forecasted to grow 5.3%. Wage growth in the public sector will again lag, with growth of 2.3% in 2018. Total wages and salaries are forecasted to average 4.7% growth throughout the forecast. Rental income is expected to grow 4.6% in each of the next two years before slowing to under 1% growth for the remainder of the forecast. Interest income is expected to grow 4.6% in 2018. Growth is then expected to pick up and average 7.8% as the Federal Reserve tightens monetary policy. Dividend payments are projected to grow 2.5% in 2018. Growth in government transfer payments is expected to be 3.1% this year. We expect growth to pick up and average 4.9% per year for the remainder of the forecast as an increasingly older population results in rising Medicare and Social Security payments.

Employment is on the rise

The employment forecast has changed only minimally since the February forecast. Growth in payrolls is anticipated to be 1.6% this year compared to 1.5% in the previous forecast. We expect employment growth of 1.3% and 0.9% in 2019 and 2020. The February forecast called for employment growth of 1.4% and 1.1%. We then expect payroll growth to average 0.5% from 2021 through 2023. By 2023, the forecast expects 330,000 fewer jobs than in February, a difference of 0.2%. Due to the steady job growth, we expect an unemployment rate of 3.8% in 2018, reaching a trough in 2019 of 3.6%. We expect the unemployment rate to increase slowly to 4.1% by 2023. The continued strengthening of the labor market will create an incentive for more and more marginally attached workers to begin looking for a job. We expect the labor force participation rate to grow from 61.6% this year to a peak of 61.8% in 2020

after which the participation rate will resume its long-term secular decline.

Private sector hiring will continue to outpace public sector hiring

Employment growth in nonfarm payrolls has been led by private sector hiring throughout the recovery as the public sector has been weighed down by budget concerns. While state and local governments have largely worked through their budgetary issues and have started hiring again, the pace of hiring has been slow. Federal government employment is expected to remain steady throughout the forecast except for the temporary hiring of census workers in 2020. The lack of growth in federal government jobs will offset by modest gains in state and local government employment, keeping total government employment growth slightly positive throughout the forecast. We expect private sector job growth of 1.8% this year, after also growing by 1.8% in 2017. The forecast calls for private sector job growth of 1.5% in 2019, slowly declining to 0.4% in 2023.

Business investment is expected to be strong

Real nonresidential fixed investment is expected to grow 5.7% this year after growing 4.7% in 2017. The recent increase in oil prices has increased the incentive for additional investment by energy companies. The capital-intensive manufacturing sector remains strong. Demand for new office space appears to be slowing, however, as the vacancy rate increased in the first quarter. We expect real nonresidential construction to remain strong for the next few years. The forecast calls for growth to remain in the 5.6% to 5.7% range for the next four years. We then expect growth to average 4.1% per year through 2023. Real equipment investment is anticipated to grow 5.9% this year. We expect strong growth throughout the forecast as businesses expand and improve productivity. Although we do not expect to see the double-digit growth experienced early in the recovery, we do expect capital equipment to remain an important driver of GDP growth after this year. The forecast calls for growth to average 7.1% from 2019 through 2023. We expect real nonresidential fixed investment in structures to grow 6.5% this year and then slowly trend down to 1.0% in 2023.

The housing recovery will continue

The housing market continues to recover. New home sales are trending upward. Homebuilder confidence remains high and home prices continue to climb. Mortgage rates have increased roughly 50 basis points since the beginning of the year but remain low by historical standards. We expect housing starts to grow 9.4% this year, compared to 6.9% in the previous forecast. The forecast calls for growth of 4.1% in 2019 and 4.8% in 2020 before averaging less than 1% through 2023. The forecast calls for growth in single-family housing starts of 6.9% this year. The forecast expects the growth in single-family housing starts will follow a pattern similar to overall housing construction. We expect the multi-family segment to grow 15.5% this year after declining 9.3% in 2017. The forecast calls for growth to average 1.8% through the remainder of the forecast.

Foreign growth is improving at a moderate pace

Major foreign economies continue to expand at a moderate pace. The Canadian economy slipped to 1.3% (SAAR) growth in the first quarter. Weak consumer spending and a decline in housing construction weighed down growth. The latest Blue Chip forecast expects growth of 2.1% in Canada for 2018 and 1.9% in 2019, down from 3.0% in 2017. GDP growth in Mexico accelerated to 1.1% (q/q) in the first quarter from 0.8% (q/q) in the fourth quarter of 2017. The Mexican economy grew 2.0% for all of 2017. The Blue Chip forecast called for 2.2% growth this year followed by 2.3% growth in 2019. The recovery in the Eurozone is continuing with real GDP increasing 2.3% in 2017. The latest Blue Chip forecast calls for 2.2% growth this year and 1.9% in 2019. China, which is the largest U.S. export market outside of North America, continues to slow. The Chinese have had difficulty transitioning to a more domestic consumer driven economy. China reported 6.9% growth in 2017, well below the 2005-11 average of 11%. The most recent Blue Chip forecast calls for Chinese growth to slow further, with growth of 6.4% this year and 6.3% in 2019. Japan's economy contracted by 0.6% (SAAR) in the first quarter, ending eight consecutive quarters of growth. Japan's long run potential GDP growth is roughly 0.7% due primarily to demographics. Japan's economy grew 1.8% in 2017. The most recent Blue Chip forecast expects slow growth of 1.3% this year followed by 1.1% in 2019.

Economic growth of U.S. trading partners is expected to slow

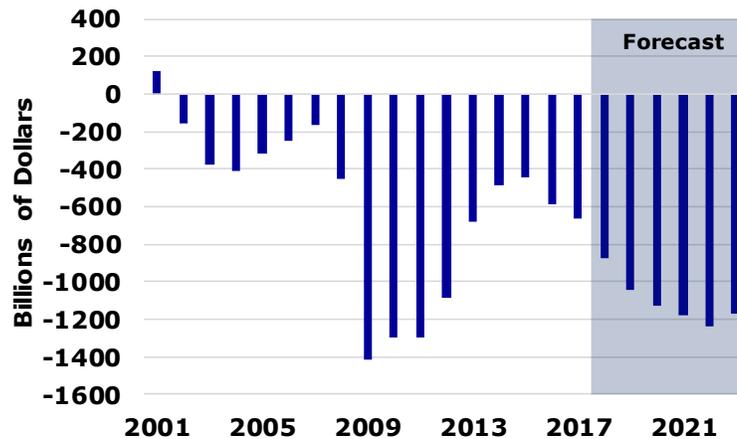
Economic growth of major U.S. trading partners is expected to slow to 2.9% this year after growing 3.1% 2017. The forecast then expects growth of 2.8% per year through 2023. The dollar has declined recently and the drag on exports has diminished. Real U.S. exports are forecasted to grow 5.2% this year after increasing 3.4% in 2017. Export growth is forecasted to pick up over the next two years at 6.1% and 6.5%. We then expect real export growth to slow and average 4.6% through 2023. Export growth is more than offset by increased imports through 2022. In 2023, import growth slows and net exports are a slight positive to overall growth.

The federal budget deficit will increase this year

The federal budget deficit is expected to increase this federal fiscal year to \$872 billion from \$666 billion in 2017. Much of the increase in the deficit is due to the passage of the Tax Cuts and Jobs Act (TCJA). We expect the federal budget deficit to grow through 2022, reaching \$1,238 billion, then decline slightly to \$1,170 billion in 2023 (see Figure 1.6). The forecast calls for real defense spending to grow 4.3% this year, 4.1% in 2019, and 0.9% in 2020. We then expect reductions in real defense spending through 2023. Real nondefense spending is expected to increase 2.4% this year and 4.1% in 2019 then also decline throughout the rest of the forecast. State and local governments, having worked through the majority of their budget difficulties, will offset the decline in spending at the federal level. We expect total real government spending growth to average 0.8% through 2023.

Figure 1.6: Federal Budget Deficit

The budget deficit is increasing



Source: U.S. Treasury, June 2018 forecast; historical data FFY 2017

The Fed is gradually tightening monetary policy

The Federal Reserve is gradually tightening monetary policy after years of measures aimed at supporting the economy. The Federal Reserve is facing an upbeat economic outlook but also an uncertain policy environment. Jerome Powell assumed office as Chair on February 5. We do not expect any major deviations from the approach taken by Janet Yellen. The forecast assumes several rate hikes over the next few years.

Table 1.1 provides a fiscal year summary of the U.S. economic indicators. For calendar year tables, see the appendix.

Risks to the Forecast

Downside risks outweigh upside risks

Our view of the risks to the forecast is balanced in the near term (2019-21 biennium) with a relatively high probability of the baseline scenario. In the outer years of the forecast (2021-23 biennium), the level of uncertainty in the baseline remains elevated, and downside risks once again outweigh upside risks.

Downside Risks

- Increasing geopolitical tensions negatively affect consumer confidence
- An unexpected shift in monetary policy
- A breakdown in trade relations
- Chinese economy experiences a “hard landing” (annual growth under 5%); growth is weaker in emerging market economies
- Weaker than expected employment growth
- Real wage growth stagnates, leading to slower consumer spending
- Slower household formation

- Slowdown in economic growth and negative effects to financial markets due to Brexit
- U.S. dollar appreciates against other currencies, limiting exports
- Weak global growth persists, further impacting exports

Upside Risks

- An infrastructure package passes
- Increased business confidence leads to more hiring
- Increased consumer confidence gives a boost to consumer spending
- The housing sector improves faster than anticipated
- Oil prices decline as OPEC fails to impact prices
- Labor productivity growth returns to the higher rates seen in 1995-2005
- Employment growth expands faster than in the baseline
- China successfully transitions to a more consumption based economy
- European and emerging market economies grow faster than expected
- The U.S. dollar declines, making U.S. exports cheaper abroad
- Wage growth picks up faster than expected.

Table 1.1
U.S. Economic Forecast Summary
 Forecast 2018 to 2023

Fiscal Years

	2016	2017	2018	2019	2020	2021	2022	2023
Real National Income Accounts (Billions of Chained 2009 Dollars)								
Real Gross Domestic Product	16,577.6	16,891.0	17,340.1	17,831.0	18,219.7	18,555.6	18,929.8	19,324.3
% Ch	1.7	1.9	2.7	2.8	2.2	1.8	2.0	2.1
Real Consumption	11,413.0	11,732.8	12,043.8	12,351.2	12,610.0	12,860.5	13,129.0	13,411.6
% Ch	3.0	2.8	2.7	2.6	2.1	2.0	2.1	2.2
Real Nonresidential Fixed Investment	2,210.4	2,253.3	2,382.9	2,507.2	2,658.3	2,803.4	2,947.2	3,069.3
% Ch	-0.2	1.9	5.8	5.2	6.0	5.5	5.1	4.1
Real Residential Fixed Investment	580.2	592.3	599.3	610.9	632.7	660.0	680.8	698.5
% Ch	9.6	2.1	1.2	1.9	3.6	4.3	3.2	2.6
Real Personal Income	14,327.3	14,457.5	14,717.1	15,076.9	15,489.0	15,865.4	16,262.1	16,665.2
% Ch	2.9	0.9	1.8	2.4	2.7	2.4	2.5	2.5
Real Per Capita Income (\$/Person)	44,417	44,515	44,983	45,753	46,670	47,469	48,319	49,179
% Ch	2.2	0.2	1.1	1.7	2.0	1.7	1.8	1.8
Price and Wage Indexes								
PCE Price Index (2009=100)	110.0	111.8	113.8	116.1	118.5	120.9	123.4	125.9
% Ch	0.7	1.6	1.8	2.1	2.0	2.1	2.0	2.1
U.S. Consumer Price Index (1982-84=1.0)	2.383	2.427	2.482	2.537	2.589	2.644	2.700	2.758
% Ch	0.7	1.9	2.3	2.2	2.1	2.1	2.1	2.2
Employment Cost Index (Dec. 2005=1.0)	1.248	1.278	1.315	1.362	1.405	1.455	1.509	1.568
% Ch	2.2	2.4	2.9	3.6	3.2	3.5	3.7	3.9
Current Dollar National Income (Billions of Dollars)								
Gross Domestic Product	18,344.5	18,985.6	19,860.2	20,881.5	21,891.7	22,858.8	23,872.2	24,917.8
% Ch	2.9	3.5	4.6	5.1	4.8	4.4	4.4	4.4
Personal Income	15,764.0	16,159.6	16,743.9	17,508.6	18,350.4	19,182.9	20,064.4	20,985.8
% Ch	3.6	2.5	3.6	4.6	4.8	4.5	4.6	4.6
Employment (Millions)								
U.S. Civilian Labor Force	158.0	159.8	161.1	162.8	164.5	165.8	166.9	167.8
Total U.S. Employment	150.1	152.4	154.5	156.9	158.5	159.6	160.3	161.0
Unemployment Rate (%)	4.98	4.67	4.09	3.63	3.62	3.75	3.91	4.05
Nonfarm Payroll Employment	143.10	145.54	147.74	150.00	151.70	152.81	153.69	154.45
% Ch	1.9	1.7	1.5	1.5	1.1	0.7	0.6	0.5
Manufacturing	12.36	12.37	12.56	12.81	12.90	12.94	12.94	12.87
% Ch	0.6	0.2	1.5	2.0	0.7	0.3	-0.1	-0.5
Durable Manufacturing	7.75	7.70	7.83	8.01	8.09	8.14	8.16	8.13
% Ch	0.1	-0.6	1.6	2.3	1.0	0.6	0.2	-0.4
Nondurable Manufacturing	4.61	4.67	4.74	4.80	4.81	4.80	4.78	4.75
% Ch	1.5	1.4	1.4	1.4	0.2	-0.2	-0.5	-0.7
Construction	6.61	6.84	7.08	7.33	7.66	8.07	8.43	8.69
% Ch	4.7	3.6	3.5	3.5	4.5	5.3	4.4	3.1
Service-Providing	123.41	125.66	127.39	129.09	130.35	131.00	131.52	132.07
% Ch	2.0	1.8	1.4	1.3	1.0	0.5	0.4	0.4
Miscellaneous Indicators								
Oil-WTI (\$ per barrel)	41.7	48.6	58.5	64.7	61.3	58.5	56.4	55.0
Personal Saving/Disposable Income (%)	5.8	4.0	3.0	2.9	3.6	3.8	3.9	3.9
Auto Sales (Millions)	7.2	6.5	5.7	5.4	5.3	5.3	5.3	5.4
% Ch	-5.9	-10.4	-11.8	-5.3	-2.6	0.2	0.7	1.8
Housing Starts (Millions)	1.149	1.201	1.263	1.351	1.402	1.461	1.478	1.489
% Ch	9.1	4.5	5.2	6.9	3.8	4.2	1.2	0.7
Federal Budget Surplus (Billions)	-649.4	-671.9	-810.0	-1,036.3	-1,152.1	-1,211.9	-1,240.8	-1,252.8
Net Exports (Billions)	-519.7	-551.8	-599.6	-643.2	-602.0	-599.7	-611.9	-628.7
3-Month Treasury Bill Rate (%)	0.18	0.55	1.42	2.34	3.00	3.19	3.18	3.16
10-Year Treasury Note Yield (%)	2.02	2.10	2.56	3.18	3.60	3.72	3.69	3.60
Bond Index of 20 G.O. Munis. (%)	3.51	3.51	3.67	4.10	4.46	4.57	4.52	4.41
30-Year Fixed Mortgage Rate (%)	3.80	3.85	4.14	4.78	5.21	5.34	5.33	5.27

Table 1.2

Forecast Analysis

Comparison of Forecasts for 2017-19

U.S.	Average Annual Rate of Growth (Percent) 2017:2-2019:2		Average Rate (Percent) 2017:3 to 2019:2	
	Real GDP	PCE Price Index	3 Month T-Bill Rate	Mortgage Rate
2014				
February	2.6	1.3	3.72	6.57
June	2.6	1.5	3.73	6.63
September	2.6	1.6	3.51	6.15
November	2.5	1.9	3.53	6.14
2015				
February	2.5	1.8	3.53	5.71
June	2.5	1.8	3.48	5.75
September	2.5	1.8	2.66	5.16
November	2.3	1.8	2.67	5.23
2016				
February	2.3	1.8	2.28	5.02
June	2.1	1.9	2.09	4.97
September	2.1	1.7	1.63	4.85
November	2.1	1.8	1.39	4.63
2017				
March	2.3	1.6	1.66	5.07
June	2.3	1.6	1.67	4.98
September	2.3	1.7	1.67	4.91
November	2.3	1.8	1.50	4.41
2018				
February	2.6	1.9	1.79	4.49
June	2.8	2.1	1.88	4.46

Table 1.3

Forecast Analysis

Comparison of Forecasts for 2019-21

U.S.	Average Annual Rate of Growth (Percent) 2019:2-2021:2		Average Rate (Percent) 2019:3 to 2021:2	
	Real GDP	PCE Price Index	3 Month T-Bill Rate	Mortgage Rate
2016				
February	2.2	1.7	2.79	5.60
June	2.2	1.9	2.81	5.67
September	2.2	1.9	2.79	5.77
November	2.1	2.0	2.55	5.57
2017				
March	2.0	1.9	2.80	5.96
June	2.0	2.0	2.81	5.97
September	2.0	1.9	2.83	6.00
November	2.1	2.0	2.56	5.08
2018				
February	2.0	2.0	3.00	5.26
June	1.9	2.1	3.09	5.28

Table 1.4
Forecast Comparison
Forecast 2018 to 2023

Fiscal Years

	2017	2018	2019	2020	2021	2022	2023
U.S.							
Real GDP							
June Baseline	16891.0	17340.1	17831.0	18219.7	18555.6	18929.8	19324.3
% Ch	1.9	2.7	2.8	2.2	1.8	2.0	2.1
February Baseline	16891.0	17330.1	17773.0	18163.5	18527.5	18899.6	19289.5
% Ch	1.9	2.6	2.6	2.2	2.0	2.0	2.1
PCE Price Index							
June Baseline	111.8	113.8	116.1	118.5	120.9	123.4	125.9
% Ch	1.6	1.8	2.1	2.0	2.1	2.0	2.1
February Baseline	111.8	113.7	115.8	118.1	120.5	122.9	125.4
% Ch	1.6	1.7	1.9	1.9	2.0	2.1	2.0
Unemployment Rate							
June Baseline	4.67	4.09	3.63	3.62	3.75	3.91	4.05
February Baseline	4.67	4.12	3.78	3.76	3.85	3.87	3.96
Mortgage Rate							
June Baseline	3.85	4.14	4.78	5.21	5.34	5.33	5.27
February Baseline	3.85	4.14	4.85	5.23	5.30	5.29	5.27
3 Month T-Bill Rate							
June Baseline	0.55	1.42	2.34	3.00	3.19	3.18	3.16
February Baseline	0.55	1.38	2.20	2.84	3.17	3.16	3.14



Chapter 2: Washington Economy – Current Conditions and Forecast

- **The Washington economy is expanding at a rapid pace.**
- **Washington real GDP growth and personal income growth led the nation in 2017.**
- **Seattle home prices continue to rise very rapidly and housing construction remains strong.**
- **Seattle area consumer price inflation is well above the national average due to higher shelter cost inflation.**
- **The personal income forecast is higher than in February but employment growth is lower.**
- **Washington housing and construction are at, or near, their cyclical peaks.**
- **As in February, we expect the Washington economy to continue to outperform the U.S. economy.**

Current Conditions

The Washington economy is expanding at a rapid pace

The Washington economy is expanding at a rapid pace. Washington real GDP growth and personal income growth led the nation in 2017. Washington unemployment remains near a historic low. Seattle home prices continue to rise very rapidly and housing construction remains strong. Washington exports are rising and manufacturing is growing. Seattle area consumer price inflation is well above the national average due to higher shelter cost inflation.

Employment growth has been close to the forecast

We have four months of new Washington employment data since the February forecast was released. Total nonfarm payroll employment rose 25,800 (seasonally adjusted) in February, March, April, and May, which was 1,800 more than expected in the forecast. As is usually the case, the majority of the employment increase was due to private, services-providing industries, which added 18,300 net new jobs in the four-month period. Construction employment grew 3,100 and manufacturing employment increased 1,400. Government payrolls expanded by 2,800 in February, March, April, and May.

Historical employment estimates were revised lower

We have also incorporated another quarter of benchmark employment data from the Quarterly Census of Employment and Wages (QCEW). The new QCEW data and other revisions lowered the estimated level of total employment in January 2018 by 4,400 jobs (0.1%). The downward revision to history combined with the higher than expected growth since January results in 2,600 (0.1%) fewer jobs in May 2018 than expected in the February forecast.

Washington unemployment remains near a historic low

Washington’s unemployment rate inched down to 4.7% in May from 4.8% in April. May’s 4.7% rate was the lowest since June 2007 when it reached an all-time low of 4.6%. A year ago, in May 2017, the Washington unemployment rate stood at 4.8%.

Washington UI claims remain near the post-recession low

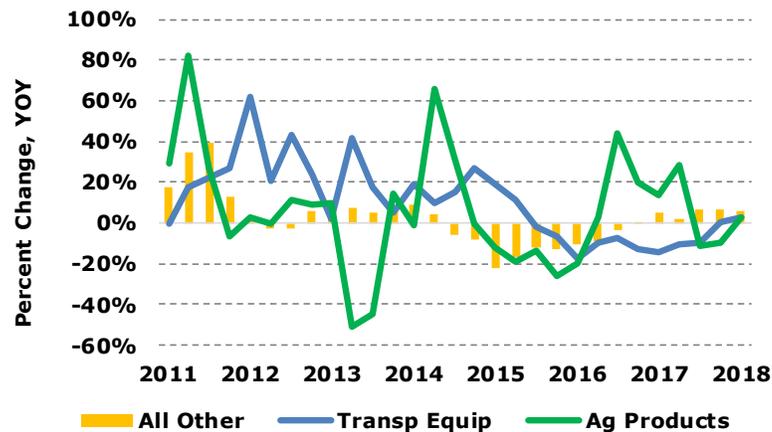
Washington initial claims for unemployment insurance remain near the post-recession low. The four-week moving average of seasonally adjusted claims was unchanged at 6,000 in the week ending June 23, 2018 compared to the previous week. The current level of claims is well below the trough of 7,200 reached during the last expansion and is close to the post-recession trough of 5,800. Claims have fallen 64% since the peak in early 2009.

Washington exports are up over the year

Total Washington exports were up over the year for the second consecutive quarter. Exports increased 3.9% in the first quarter of 2018 compared to the first quarter of 2017. Transportation equipment exports (mostly Boeing planes) and exports of agricultural products both rose 2.8% over the year while exports of all other commodities (mostly manufacturing) increased 6.2% over the year (see Figure 2.1).

Figure 2.1: Washington Exports

Transportation equipment, agricultural products, and "other" commodities all increased over the year



Source: Wiser Trade; data through Q1 2018

Washington housing construction in the fourth quarter was stronger than expected in the first quarter

Washington housing construction exceeded the forecast in the first quarter of 2018. The number of housing units authorized by building permits totaled 49,200 (SAAR) in January, February, and March which was 6,000 more than the 43,200 expected in the February forecast. The variance was mostly due to the multi-family sector. In the first quarter, 24,200 multi-family units were permitted which was 4,500 more than expected. The number of single-family units permitted was 25,000, which exceeded the forecast by 1,400 units. Washington housing construction is weaker so far in the second quarter. The number of housing units authorized by building permits averaged 42,300 in April and May (SAAR), consisting of 22,600 single-family units and 19,700 multi-family units. The February forecast assumed an average rate of 43,700 units for the second quarter as a whole (SAAR) consisting of 24,500 single-family units and 19,100 multi-family units.

Seattle home prices continue to rise very rapidly

Seattle home prices continue to rise very rapidly. According to the S&P/Case-Shiller Home Price Indices, seasonally adjusted Seattle area home prices rose 1.1% in April compared to 0.2% in the Composite-20 index. The over-the-year growth was 13.0% in Seattle, which was double the 6.5% increase in the Composite-20 index. Seattle home prices are up 88% since the December 2011 trough and exceed the May 2007 peak by 31%.

New vehicle registrations rose 0.5% in May

Car and truck sales appear to have plateaued (see Figure 2.2). Seasonally adjusted new vehicle registrations rose 0.5% in May. Car and truck sales are up 1.8% over the year but are down 11.1% since the post-recession peak in November 2017.

Car and truck sales appear to have plateaued

Figure 2.2: New Vehicle Registrations



Source: WA State Department of Licensing, ERFC; data through May 2018

Manufacturing growth remains positive

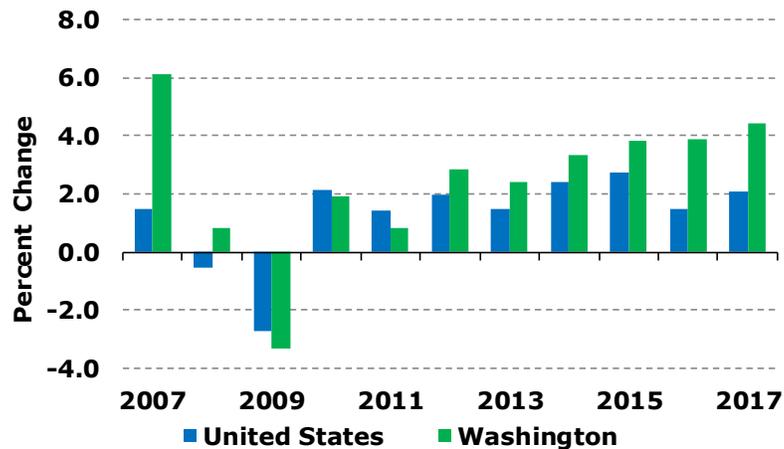
The Institute of Supply Management - Western Washington Index (ISM-WW) increased in May to remain solidly in positive territory. The index, which measures conditions in the manufacturing sector, increased from 55.8 in April to 61.7 in May (index values above 50 indicate growth while values below 50 indicate contraction). The index has exceeded 50 in each of the last ten months. The production, orders, employment, and inventory components all indicated expansion in May while the deliveries component was neutral at 50.

Washington led the nation in growth in 2017

The BEA recently released preliminary 2017 estimates for personal income and real GDP by state. In both cases, Washington ranked first in the nation in growth in 2017. Washington personal income grew 4.8% compared to 3.1% for the nation and Washington real GDP grew 4.4% compared to 2.1% (see Figure 2.3). The difference between Washington U.S. personal income and GDP growth was mostly due to two sectors: retail trade (which includes electronic shopping) and information (which includes software publishing and other IT services such as internet publishing and web search portals).

Washington real GDP growth has exceeded the national average for the last six years

Figure 2.3: Real GDP



Source: Bureau of Economic Analysis; data through 2017

Washington personal income growth led the nation again in the first quarter of 2018

After the June forecast was released, the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) released state personal income estimates for the first quarter of 2018. According to these estimates, Washington personal income rose to \$434.1 billion (SAAR) in the first quarter of 2018 from \$426.5 billion in the fourth quarter. The reported 7.4% growth rate (SAAR) in Washington personal income was the highest among the states and District of Columbia and significantly exceeded the 4.3% growth rate for the U.S. as a whole. Over the last year, from the first quarter of 2017 to the first quarter of 2018, Washington personal income grew 6.0%, which was also the

highest among the states and the District of Columbia and was well above the 3.6% rate for the nation.

Seattle area consumer price inflation remains above the national average

Seattle area consumer price inflation remains above the national average. Over the last year, from April 2017 to April 2018, consumer prices in the Seattle area rose 3.3% compared to 2.4% for the U.S. city average. Core prices, which exclude food and energy, were up 3.1% in Seattle compared to 2.1% for the nation. The higher Seattle inflation is due to more rapid growth in shelter costs. During the year, shelter costs in Seattle rose 5.9% compared to 3.4% for the nation. Excluding shelter, Seattle inflation matched the national average at 1.9% over the year.

Washington State Forecast

The June forecast for Washington State is similar to the February forecast

The June forecast for Washington State is similar to the February forecast. Washington employment is expected to grow 2.5% this year compared to 2.2% in the February forecast. We expect employment growth to average 1.1% per year in 2019 through 2023, which is slightly weaker than the 1.4% per year expected in the February forecast. Our forecast for nominal personal income growth this year is 5.8%, up from 5.0% in the February forecast. Our new forecast for nominal personal income growth in 2019 through 2023 averages 5.1% per year compared to 5.2% per year in the February forecast. We expect total housing units authorized by building permits to average 45,400 units this year compared to 43,200 in the February forecast. We expect permits to average 42,400 during the next five years compared to 42,500 in February. We expect the all-items Seattle CPI to rise 3.3% this year, up from 3.1% in the February forecast. We expect Seattle area inflation will average 2.3% per year in 2019 through 2023, up from 2.2% in the February forecast.

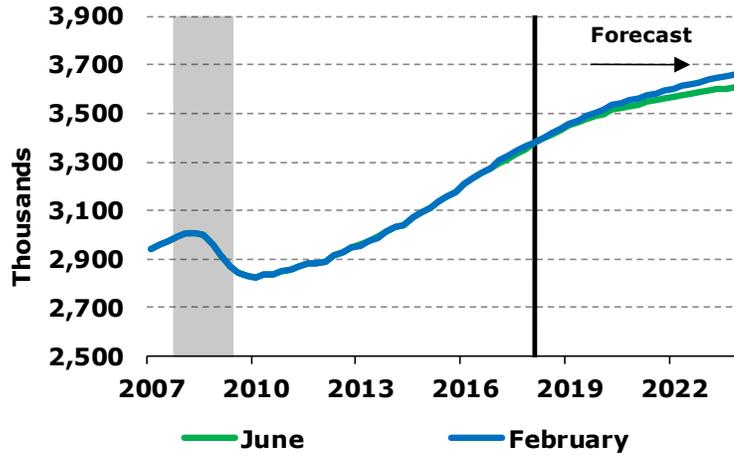
Washington Payroll Employment

Employment growth will decelerate

Washington employment is expected to grow 2.5% this year compared to 2.2% in the February forecast. As in February, we expect growth to decelerate gradually as the recovery matures. We expect employment growth to average 1.1% per year in 2019 through 2023, which is slightly weaker than the 1.4% per year expected in the February forecast (see Figure 2.4). On an annual basis, we expect 1.9% employment growth in 2019, 1.4% in 2020, 1.0% in 2021, 0.8% in 2022, and 0.6% in 2023.

Figure 2.4: Nonfarm Payroll Employment

Washington employment growth is weaker than in February



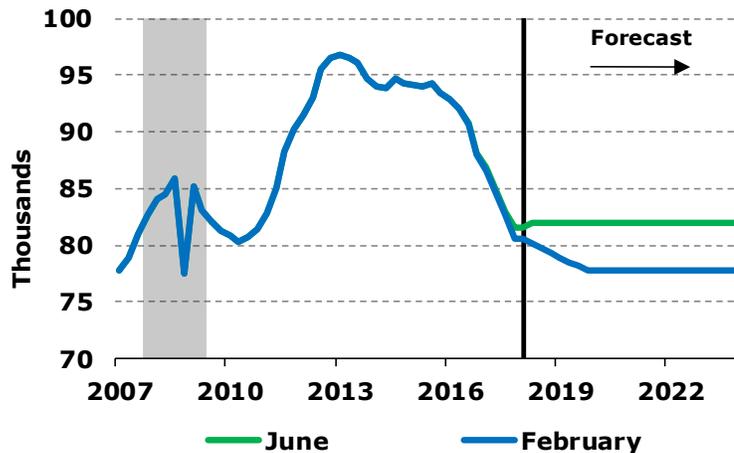
Source: Washington Employment Security Department, ERFC; historical data through Q1 2018

The aerospace employment forecast is higher than in February

Washington aerospace employment peaked in the first quarter of 2013. As of the fourth quarter of 2017, 15,400 jobs had been lost with most of the decline in 2016 and 2017. In February, we had assumed that aerospace employment would continue to decline through the end of 2019, though at a slower rate than in 2016 and 2017. However, aerospace employment has been essentially flat for the last seven months and we are now assuming no further reductions. The result is 4,200 more aerospace jobs by the end of 2019 than assumed in February (see Figure 2.5). On an annual average basis, we expect aerospace employment to decline 2.6% in 2018, increase 0.1% in 2019, and then remain unchanged through the rest of the forecast.

Figure 2.5: Aerospace Employment

The steep reductions in aerospace employment have subsided



Source: Washington Employment Security Department, ERFC; historical data through Q1 2018

The software employment forecast is also higher than in February

Software employment grew only 0.5% in 2015 after absorbing a series of Microsoft layoffs during the latter part of 2014. Growth rebounded to 5.3% in 2016 and 4.1% in 2017. We have increased the forecast for growth in 2018 to from 2.3% to 4.9% based on stronger-than-expected growth through May. In June, we also raised the forecasted growth rate for the next five years from an average of 0.9% per year to 1.7% per year. By the end of 2023, we now expect 4,600 more software jobs than we assumed in February. On an annual average basis, we expect growth rates of 1.6% in 2019, 1.5% in 2020, 1.7% in 2021, 1.8% in 2022, and 1.9% in 2023.

Washington electronic shopping and mail order employment growth will slow

In Washington, the electronic shopping and mail order sector consists almost entirely of electronic shopping employment. Our June forecast for this sector is very close to the forecast adopted in February. As of May 2018, year-over-year electronic shopping and mail order employment grew by 9,300 jobs, a 19.3% rate of growth. While still extremely strong, this is actually down from the previous year when employment grew by 11,300 (30.8%). As in February, we expect employment growth to remain strong for some time but to continue to slow. The announcement by Amazon of a second headquarters lends support to this view. Our forecast calls for employment growth of 19,100 from the fourth quarter of 2017 through the fourth quarter of 2023, which is very close to the 18,900 expected in the February forecast. On an annual basis, electronic shopping and mail order employment is expected to grow 16.3% in 2018, 8.0% in 2019, 5.2% in 2020, 3.8%, 2021, 3.0% in 2022, and 2.5% in 2023.

Construction employment has nearly reached its previous peak

As of the first quarter of 2017, construction employment was 208,200, just 1,700 (0.8%) below the 210,000 peak in the second quarter of 2007. The sector has now recovered 98% of the 74,900 jobs lost in the recession. The forecast expects construction employment to peak at 215,200 in the fourth quarter of 2020, which is 2,800 higher than forecasted in February. On an annual average basis, construction employment is expected to grow 5.6% this year, 1.4% in 2019, and 0.5% in 2020 before declining 0.1% in 2021, 0.3% in 2022, and 0.9% in 2023.

Washington Personal Income

Washington personal income is slightly higher than the February assumption

In March, after the February forecast was complete, the Bureau of Economic Analysis released estimates for state personal income through the fourth quarter of 2017. We have incorporated the new BEA estimates as well as additional Washington wage data. Our current estimate of Washington personal income in the fourth quarter of 2017 is \$428.7 billion, which is \$1.2 billion (0.3%) higher than assumed in the February forecast. The new estimate of wage and salary income is \$0.2 billion (0.1%) higher than expected and nonwage income is \$1.0 (0.5%) billion higher.

Our forecast for 2018 personal income growth is higher than in February

Our forecast for nominal personal income growth this year is 5.8%, up from 5.0% in the February forecast, due mainly to stronger growth in the first quarter. Our new forecast for nominal personal income growth in 2019 through 2023 averages 5.1% per year compared to 5.2% per year in the February forecast. On an annual basis, we expect personal income to grow 5.2% in 2019, 5.1% in 2020, and 5.0% per year in 2021, 2022, and 2023.

Washington Building Permits

The housing recovery in Washington is essentially complete

The housing recovery in Washington is essentially complete although the composition of new housing will change in coming years. Multi-family housing has recovered from a low of only 4,000 units in 2009 to 22,700 in 2017. We believe 2017 was the peak in multi-family construction in this cycle and that permits will decline to 14,700 by 2023. The recovery in single-family construction has been less robust, from 13,000 units in 2009 to 23,100 in 2017. We expect single-family construction to continue to strengthen with the number of units rising to 26,400 by 2022. Overall, the June housing construction forecast is very close to the forecast adopted in February. We expect total housing units authorized by building permits to decline 0.8% this year to 45,400 units and 5.3% next year to 43,000. We expect little change in the final four years of the forecast with the number of units rising 0.9% in 2020 to 43,400 then declining 1.6% in 2021 to 42,700, 1.7% in 2022 to 42,000, and 2.7% in 2023 to 40,900.

Seattle Consumer Price Index

Rents are driving Seattle core inflation higher

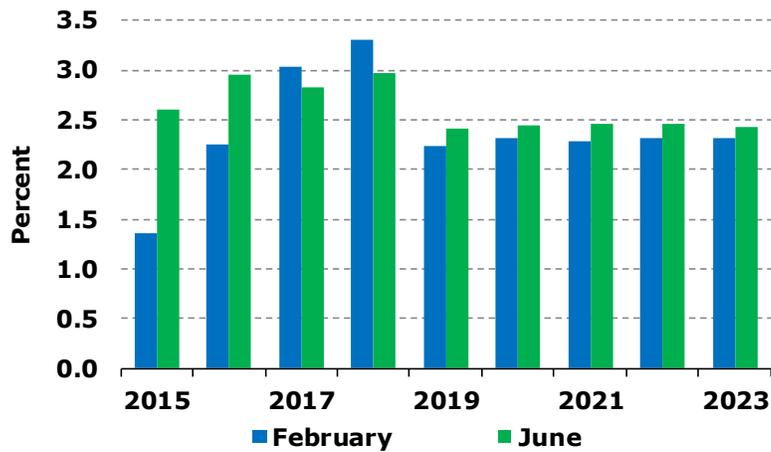
Core inflation (excluding food and energy) in Seattle was 2.8% in 2017 while national core inflation was 1.8%. The reason for the difference was shelter costs, which were rising much faster in Seattle. Recent data show that shelter costs continue to rise faster in Seattle than in the U.S. city average. We expect a Seattle core inflation rate of 3.0% this year compared to 2.2% for the nation. We expect core inflation in Seattle to moderate as shelter costs stabilize. Our forecast for core Seattle inflation is 2.4% in 2019, 2.5% in 2020, 2.5% in 2021, 2.5% in 2022, and 2.4% in 2023.

Headline inflation will exceed core inflation this year

After working to reduce overall inflation considerably in 2015 and 2016, rising energy costs added to headline inflation in 2017. Recent oil price increases indicate that headline inflation will exceed core inflation this year as well. We expect energy costs to trend down over the remainder of the forecast, lowering headline inflation relative to core inflation (see Figure 2.6). We expect the Seattle CPI to rise 3.3% this year, 2.2% in 2019, and 2.3% per year in 2020, 2021, 2022, and 2023.

Energy costs are expected to trend down after 2018

Figure 2.6: Seattle Consumer Price Inflation



Source: Bureau of Labor Statistics, ERFC; historical data through 2017

Table 2.1 provides a fiscal year summary of the state economic indicators. For calendar year tables, see the appendix.

Alternative Scenarios

Alternative forecasts are required by law

In accordance with state law, the Washington State Economic and Revenue Forecast Council adopted a forecast based on optimistic assumptions and a forecast based on pessimistic assumptions.

Optimistic

In the optimistic scenario, the housing market bounces back

Housing starts remained low by historical standards in 2017 because of slow household formation. In the optimistic scenario, young adults move to form households in greater numbers because of the improving economy, driving the level of housing starts above 1.5 million in 2019 and 1.7 million in 2020. With higher productivity, wage and price pressures remain relatively muted in 2018. Since inflation is not a problem, the Federal Reserve takes a gradual approach to raising interest rates over the first two years of the forecast period. Given the strengthening outlook, both consumer and business confidence improve and the stock market sees strong gains. On the demand side, higher incomes combine with lower oil prices and inflation to support robust consumer spending. Meanwhile, economic conditions in the rest of the world improve with the help of structural reforms and quantitative-easing programs.

The optimistic scenario also assumes ...

In addition to reflecting the impact of the stronger U.S. forecast on the state economy, the optimistic Washington forecast assumes that aerospace employment gradually rises through 2023 rather than levelling off as in the baseline. Software

... a much stronger Washington economy

employment growth is also much stronger than in the baseline forecast. In the optimistic scenario, the stronger regional economy drives Seattle consumer price inflation above the baseline. Washington average wage growth is also higher in the optimistic scenario than in the baseline. Washington population growth is higher in the optimistic scenario as the strong local economy attracts migrants from other states. Construction employment continues to rise throughout the forecast rather than peaking at the end of 2020 as in the baseline. By the end of 2023, Washington nonfarm payroll employment is higher by 128,700 jobs (3.6%) than in the baseline forecast and Washington personal income is \$54.5 billion (9.4%) higher.

Pessimistic

The pessimistic scenario assumes a loss in confidence and a two-quarter recession

The U.S. economy has been growing for 108 months, its second-longest expansion since 1854. In the pessimistic scenario, a loss in confidence in the outlook leads to a drop in fixed residential and nonresidential investment and the expansion ends in its 117th month, just shy of the 120-month record. The business sector, seeing a dimming outlook, cuts back spending on equipment and intellectual property products. Households, concerned about the outlook, and responding to a rise in borrowing rates brought on by rising risk premiums, temporarily drop out of the housing market, and housing starts tumble. The result is a two-quarter recession starting in the second quarter of 2019. The US economy contracts at annual rates of 2.4% in the second quarter and then 1.9% in the third quarter of 2019. The unemployment rate climbs through most of 2019, reaching a high of 5.2% in the first quarter of 2020.

This scenario also assumes a weaker local economy

In addition to reflecting the impact of the weaker U.S. forecast on the state economy, aerospace employment continues to decline rather than level off as in the baseline. Software employment also declines rather than growing moderately as in the baseline forecast. Population growth is also weaker than in the baseline forecast as migration into Washington drops. Construction employment peaks in the third quarter of 2018 rather than rising through 2020 as in the baseline. The relatively weak local economy also puts downward pressure on Washington wages and the Seattle CPI. By the end of 2023, Washington nonfarm payroll employment is 173,800 (4.8%) lower than in the baseline forecast and Washington personal income is \$48.0 billion (8.3%) lower.

Table 2.2 compares the optimistic and pessimistic forecasts with the baseline forecast.

Governor's Council of Economic Advisors (GCEA)

In the GCEA scenario, the U.S. and state forecasts were adjusted to match the average view of the Council members.

The Governor's Council of Economic Advisors' national forecast is very close to the baseline

At the national level, the GCEA forecast for real GDP growth is close to the baseline forecast in each year of the forecast. The GCEA forecast averages 2.2% per year over the six-year interval through 2023, which is the same rate as in the baseline forecast. The GCEA forecast of 2.2% average real consumer spending growth is also the same as the baseline forecast. The GCEA members also agree with the baseline inflation forecast which calls for a 2.0% per year average PCE inflation rate. The Council members' mortgage rate forecast is slightly higher than the baseline forecast in each year. The GCEA oil price forecast is slightly lower than the baseline forecast, averaging \$65 in 2018 through 2023 compared to \$68 in the baseline forecast.

The GCEA members expect generally weaker Washington growth

The GCEA scenario for Washington real personal income growth averages 2.8% per year in 2018 through 2023 compared to the baseline forecast of 3.1%. Their nominal personal income forecast is also weaker at 4.9% versus 5.2%. At an average rate of 1.2% per year, the Council members' forecast for total employment growth over the six-year period is also lower than the baseline forecast of 1.3% per year. The GCEA forecasts for manufacturing employment growth and construction employment growth are slightly lower than the baseline forecast but their housing permit forecast is slightly higher than ours is, averaging 43,700 units per year through 2023 compared to 42,900 in the baseline forecast. At the end of 2023, the GCEA forecast for Washington nonfarm payroll employment is 20,800 (0.6%) lower than in the baseline forecast and Washington personal income is \$11.2 billion (1.9%) lower.

Table 2.3 compares the GCEA forecast with the baseline forecast.

Table 2.1
Washington Economic Forecast Summary
 Forecast 2018 to 2023

Fiscal Years

	2016	2017	2018	2019	2020	2021	2022	2023
Real Income (Billions of Chained 2009 Dollars)								
Real Personal Income	353.532	365.661	379.788	392.661	404.679	416.404	428.651	441.048
% Ch	4.2	3.4	3.9	3.4	3.1	2.9	2.9	2.9
Real Wage and Salary Disb.	180.187	188.625	199.071	206.795	213.264	219.733	226.124	232.724
% Ch	5.5	4.7	5.5	3.9	3.1	3.0	2.9	2.9
Real Nonwage Income	173.345	177.037	180.717	185.867	191.416	196.671	202.527	208.324
% Ch	3.0	2.1	2.1	2.8	3.0	2.7	3.0	2.9
Real Per Capita Income (\$/Person)	48,979	49,788	50,848	51,771	52,594	53,410	54,325	55,285
% Ch	2.5	1.7	2.1	1.8	1.6	1.6	1.7	1.8
Price and Wage Indexes								
U.S. Implicit Price Deflator, PCE (2009=1.0)	1.100	1.118	1.138	1.161	1.185	1.209	1.234	1.259
% Ch	0.7	1.6	1.8	2.1	2.0	2.1	2.0	2.1
Seattle Cons. Price Index (1982-84=1.0)	2.521	2.589	2.671	2.745	2.807	2.871	2.937	3.006
% Ch	1.9	2.7	3.2	2.8	2.3	2.3	2.3	2.3
Average Nonfarm Annual Wage	59,850	61,990	65,074	67,544	69,945	72,769	75,791	79,072
% Ch	3.3	3.6	5.0	3.8	3.6	4.0	4.2	4.3
Avg. Hourly Earnings-Mfg. (\$/Hour)	26.00	26.81	27.95	29.00	29.84	30.81	31.88	33.05
% Ch	2.8	3.1	4.3	3.8	2.9	3.2	3.5	3.7
Current Dollar Income (Billions of Dollars)								
Personal Income	388.979	408.708	432.090	455.993	479.445	503.480	528.879	555.397
% Ch	4.9	5.1	5.7	5.5	5.1	5.0	5.0	5.0
Disposable Personal Income	340.903	358.203	378.375	400.245	421.172	441.785	462.759	484.635
% Ch	4.8	5.1	5.6	5.8	5.2	4.9	4.7	4.7
Per Capita Income (\$/Person)	53,890	55,648	57,849	60,120	62,310	64,578	67,026	69,617
% Ch	3.2	3.3	4.0	3.9	3.6	3.6	3.8	3.9
Employment (Thousands)								
Washington Civilian Labor Force	3,588.0	3,676.4	3,755.1	3,810.4	3,881.1	3,940.9	3,991.7	4,036.5
Total Washington Employment	3,390.1	3,494.7	3,577.6	3,642.2	3,714.0	3,768.9	3,812.9	3,851.6
Unemployment Rate (%)	5.52	4.94	4.73	4.41	4.31	4.37	4.48	4.58
Nonfarm Payroll Employment	3,195.1	3,285.1	3,364.1	3,439.4	3,495.4	3,534.3	3,564.7	3,590.2
% Ch	2.9	2.8	2.4	2.2	1.6	1.1	0.9	0.7
Manufacturing	292.3	286.7	283.8	289.0	292.2	294.3	296.1	297.4
% Ch	0.6	-1.9	-1.0	1.8	1.1	0.7	0.6	0.5
Durable Manufacturing	210.6	203.7	199.1	202.1	204.6	206.3	207.8	208.9
% Ch	-0.1	-3.3	-2.2	1.5	1.2	0.8	0.7	0.6
Aerospace	93.2	87.7	82.0	82.0	82.0	82.0	82.0	82.0
% Ch	-1.1	-5.9	-6.5	0.0	0.0	0.0	0.0	0.0
Nondurable Manufacturing	81.7	83.0	84.7	86.9	87.5	88.0	88.3	88.5
% Ch	2.5	1.6	2.0	2.5	0.8	0.5	0.4	0.2
Construction	178.9	193.5	205.8	212.8	214.6	215.1	214.5	213.3
% Ch	6.5	8.2	6.3	3.4	0.9	0.2	-0.3	-0.5
Service-Providing	2,717.6	2,798.6	2,868.3	2,931.0	2,981.8	3,018.1	3,047.2	3,072.4
% Ch	3.0	3.0	2.5	2.2	1.7	1.2	1.0	0.8
Software Publishers	57.3	60.2	62.8	65.0	65.8	66.9	68.1	69.4
% Ch	3.2	5.1	4.3	3.5	1.2	1.6	1.8	1.9
Electronic Shopping and Mail-Order	33.2	44.0	54.5	60.4	64.2	67.0	69.2	71.1
% Ch	17.7	32.5	24.0	10.7	6.3	4.4	3.3	2.7
Housing Indicators (Thousands)								
Housing Units Authorized by Bldg. Permit	40.116	44.526	48.009	42.997	43.067	43.249	42.359	41.481
% Ch	3.3	11.0	7.8	-10.4	0.2	0.4	-2.1	-2.1
Single-Family	21.823	22.025	24.445	24.177	25.174	26.067	26.232	26.331
% Ch	17.0	0.9	11.0	-1.1	4.1	3.6	0.6	0.4
Multi-Family	18.294	22.501	23.564	18.820	17.894	17.181	16.127	15.150
% Ch	-9.3	23.0	4.7	-20.1	-4.9	-4.0	-6.1	-6.1
30-Year Fixed Mortgage Rate (%)	3.80	3.85	4.14	4.78	5.21	5.34	5.33	5.27

Table 2.2
Comparison of Alternative Forecasts

Fiscal Years

	2018	2019	2020	2021	2022	2023
U.S.						
Real GDP, Percent Change						
Optimistic	2.8	4.3	3.6	2.4	2.0	2.2
Baseline	2.7	2.8	2.2	1.8	2.0	2.1
Pessimistic	2.7	2.4	0.0	2.3	1.6	1.6
PCE Price Index, Percent Change						
Optimistic	1.8	1.8	1.6	1.9	2.0	2.2
Baseline	1.8	2.1	2.0	2.1	2.0	2.1
Pessimistic	1.8	2.0	1.9	2.2	2.4	2.4
Mortgage Rate, Percent						
Optimistic	4.18	5.31	6.01	6.37	6.60	6.57
Baseline	4.14	4.78	5.21	5.34	5.33	5.27
Pessimistic	4.19	4.74	3.76	3.57	4.40	5.06
3 Month T-Bill Rate, Percent						
Optimistic	1.42	2.36	3.02	3.45	3.88	3.89
Baseline	1.42	2.34	3.00	3.19	3.18	3.16
Pessimistic	1.42	2.16	1.16	1.51	2.22	2.73
Washington						
Real Personal Income, Percent Change						
Optimistic	4.2	5.8	5.7	4.8	4.0	3.6
Baseline	3.9	3.4	3.1	2.9	2.9	2.9
Pessimistic	3.6	1.8	0.3	1.7	1.7	1.3
Personal Income, Percent Change						
Optimistic	6.1	7.7	7.4	6.8	6.1	5.9
Baseline	5.7	5.5	5.1	5.0	5.0	5.0
Pessimistic	5.4	3.8	2.2	3.9	4.2	3.8
Employment, Percent Change						
Optimistic	2.5	2.9	2.6	1.8	1.2	1.1
Baseline	2.4	2.2	1.6	1.1	0.9	0.7
Pessimistic	2.4	1.8	0.0	0.6	0.1	-0.1
Housing Permits, Thousands of Authorized Units						
Optimistic	48.1	45.8	47.8	49.7	48.5	47.9
Baseline	48.0	43.0	43.1	43.2	42.4	41.5
Pessimistic	48.0	41.8	35.9	36.7	36.9	35.4

Table 2.3
Governor's Council of Economic Advisor's Forecast

Calendar Years

	2018	2019	2020	2021	2022	2023
U.S.						
Real GDP						
<i>Growth</i>						
ERFC	2.9	2.6	1.9	1.9	2.1	2.1
GCEA Average	2.7	2.5	2.0	1.9	2.0	2.0
Real Consumption						
<i>Growth</i>						
ERFC	2.6	2.4	2.0	2.0	2.1	2.2
GCEA Average	2.6	2.4	2.0	2.0	2.0	1.9
PCE Price Index						
<i>Growth</i>						
ERFC	2.1	1.9	2.1	2.0	2.1	2.1
GCEA Average	2.2	2.3	2.1	2.0	1.8	1.8
Mortgage Rate						
<i>Percent</i>						
ERFC	4.5	5.0	5.3	5.3	5.3	5.2
GCEA Average	4.8	5.3	5.4	5.6	5.8	5.6
Oil Price (Brent)						
<i>Dollars per barrel</i>						
ERFC	73.9	73.5	69.4	66.3	64.4	63.0
GCEA Average	71.7	68.7	64.9	62.6	60.9	61.0
Washington State						
Real Personal Income						
<i>Growth</i>						
ERFC	3.6	3.2	2.9	2.9	2.9	2.9
GCEA Average	2.9	3.1	2.7	2.4	2.6	2.8
Wage and Salary Employment						
<i>Growth</i>						
ERFC	2.5	1.9	1.4	1.0	0.8	0.6
GCEA Average	2.2	1.5	1.0	0.9	0.9	0.9
Manufacturing Employment						
<i>Growth</i>						
ERFC	1.0	1.5	0.8	0.7	0.5	0.4
GCEA Average	0.2	0.3	0.0	0.1	1.0	1.0
Construction Employment						
<i>Growth</i>						
ERFC	5.6	1.4	0.5	-0.1	-0.3	-0.9
GCEA Average	3.7	0.1	1.0	1.0	0.0	0.0
Housing Permits						
<i>Thousands of authorized units</i>						
ERFC	45.4	43.0	43.4	42.7	42.0	40.9
GCEA Average	44.0	43.2	42.8	43.5	44.5	43.9
Washington Average Annual Wage						
<i>Growth</i>						
ERFC	4.5	3.3	3.9	4.1	4.2	4.4
GCEA Average	3.4	3.6	3.6	3.6	3.6	3.5

Table 2.4

Forecast Analysis

Comparison of Forecasts for 2017-19

Washington	Average Annual Rate of Growth (Percent) 2017:2-2019:2			Average Annual Rate (Thousands) 2017:3 to 2019:2
	Employment	Personal Income	Real Personal Income	Housing Units Authorized
2014				
February	1.3	4.9	3.5	42.5
June	1.2	5.3	3.8	43.0
September	1.3	5.4	3.8	43.1
November	1.1	5.5	3.6	43.2
2015				
March	1.3	5.4	3.6	43.1
June	1.4	5.6	3.8	44.2
September	1.3	5.4	3.6	43.9
November	1.4	5.4	3.5	44.0
2016				
February	1.2	5.0	3.2	43.3
June	1.2	5.1	3.2	43.7
September	1.4	5.1	3.3	43.8
November	1.5	5.1	3.2	41.0
2017				
March	1.7	5.3	3.6	41.0
June	1.6	5.2	3.6	42.7
September	1.9	4.8	3.1	43.1
November	2.1	5.0	3.2	42.3
2018				
February	2.2	5.3	3.3	44.3
June	2.2	5.6	3.5	45.5

Table 2.5

Forecast Analysis

Comparison of Forecasts for 2019-21

Washington	Average Annual Rate of Growth (Percent) 2019:2-2021:2			Average Annual Rate (Thousands) 2019:3 to 2021:2
	Employment	Personal Income	Real Personal Income	Housing Units Authorized
2016				
February	1.1	4.7	3.0	44.3
June	1.1	5.0	3.1	44.3
September	1.1	5.1	3.0	44.3
November	1.2	5.0	3.0	41.5
2017				
March	1.1	4.9	2.9	40.7
June	1.2	5.1	3.0	42.0
September	1.2	5.3	3.3	42.0
November	1.2	5.3	3.2	42.6
2018				
February	1.4	5.2	3.1	42.8
June	1.2	5.0	2.9	43.2

Table 2.6
Forecast Comparison
 Forecast 2018 to 2023

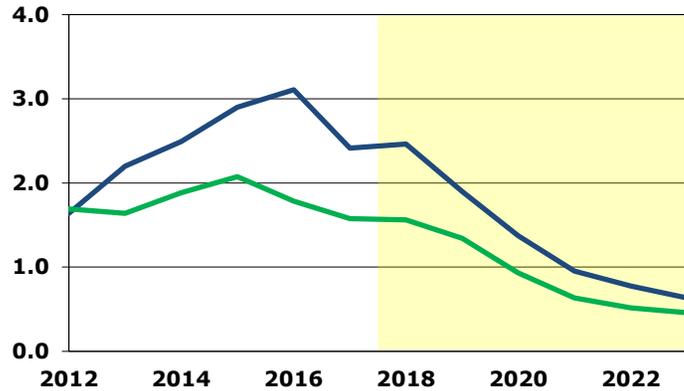
Fiscal Years

	2017	2018	2019	2020	2021	2022	2023
Washington							
Real Personal Income							
June	365.661	379.788	392.661	404.679	416.404	428.651	441.048
% Ch	3.4	3.9	3.4	3.1	2.9	2.9	2.9
February	365.873	377.974	390.933	404.011	416.771	429.405	441.638
% Ch	3.5	3.3	3.4	3.3	3.2	3.0	2.8
Personal Income							
June	408.708	432.090	455.993	479.445	503.480	528.879	555.397
% Ch	5.1	5.7	5.5	5.1	5.0	5.0	5.0
February	408.946	429.745	452.824	476.960	502.061	527.890	553.956
% Ch	5.1	5.1	5.4	5.3	5.3	5.1	4.9
Employment							
June	3285.1	3364.1	3439.4	3495.4	3534.3	3564.7	3590.2
% Ch	2.8	2.4	2.2	1.6	1.1	0.9	0.7
February	3290.2	3371.8	3446.5	3512.0	3558.9	3597.9	3633.5
% Ch	3.0	2.5	2.2	1.9	1.3	1.1	1.0
Housing Permits							
June	44.526	48.009	42.997	43.067	43.249	42.359	41.481
% Ch	11.0	7.8	-10.4	0.2	0.4	-2.1	-2.1
February	44.519	45.754	42.896	42.454	43.068	42.904	41.970
% Ch	11.0	2.8	-6.2	-1.0	1.4	-0.4	-2.2

Figure 2.7: Comparison of Washington and U.S. Economic Forecasts
(Percent change)

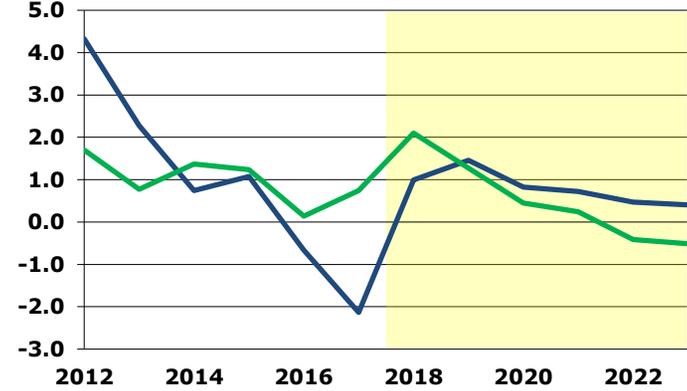
Forecast

Total Nonfarm Payroll Employment



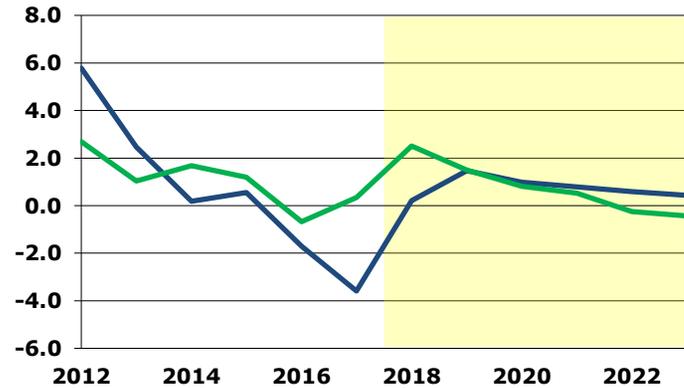
Source: WA State Employment Security Dept. 2017, ERFC 2023

Manufacturing Employment



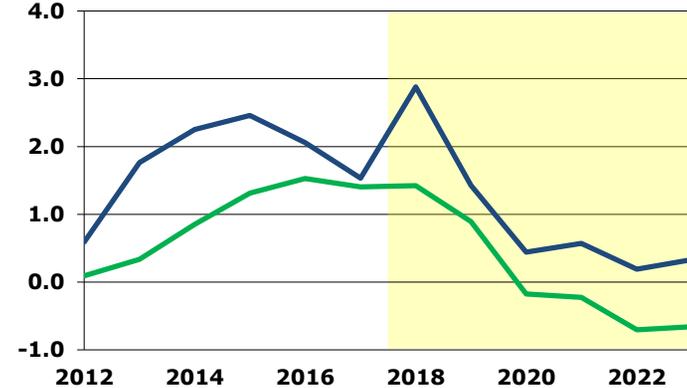
Source: WA State Employment Security Dept. 2017, ERFC 2023

Durable Manufacturing Employment



Source: WA State Employment Security Dept. 2017, ERFC 2023

Nondurable Manufacturing Employment



Source: WA State Employment Security Dept. 2017, ERFC 2023

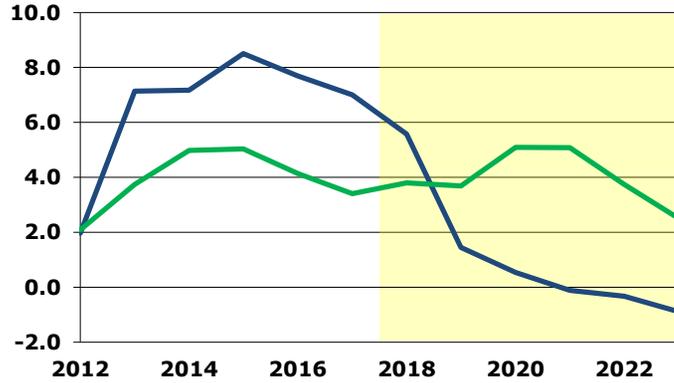
Washington

U.S.

Figure 2.7: Comparison of Washington and U.S. Economic Forecasts (continued)
 (Percent change)

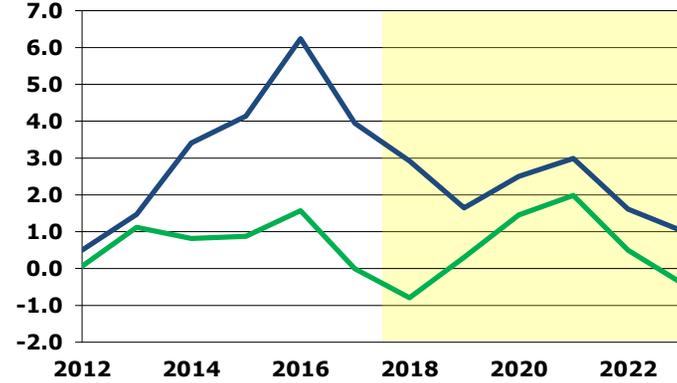
Forecast

Construction Employment



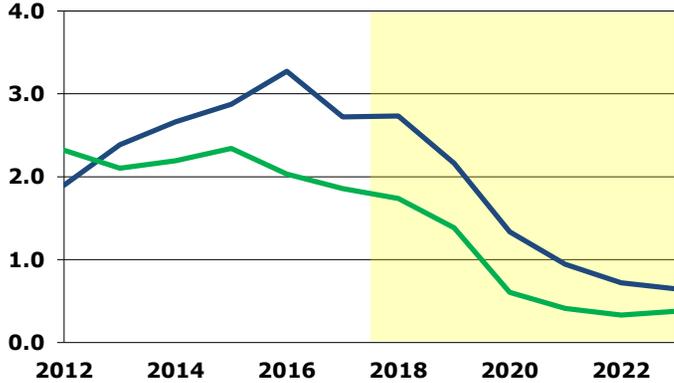
Source: WA State Employment Security Dept. 2017, ERFC 2023

Information Employment



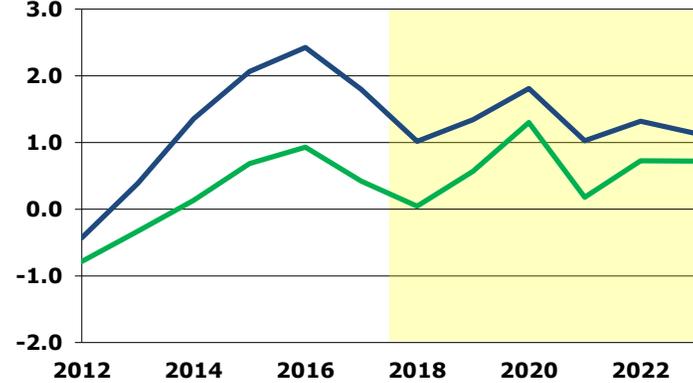
Source: WA State Employment Security Dept. 2017, ERFC 2023

Other Private Employment



Source: WA State Employment Security Dept. 2017, ERFC 2023

Government Employment



Source: WA State Employment Security Dept. 2017, ERFC 2023

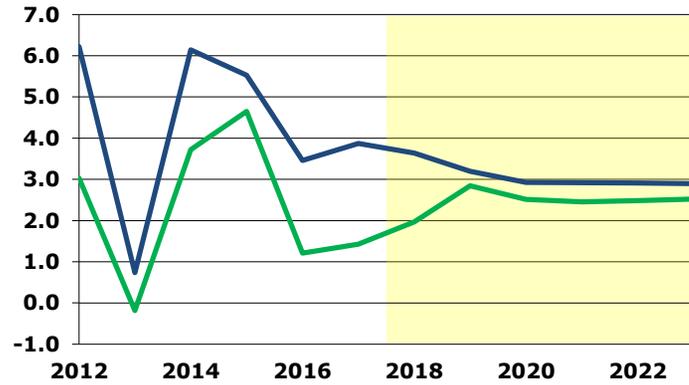
Washington

U.S.

Figure 2.7: Comparison of Washington and U.S. Economic Forecasts (continued)
 (Percent change)

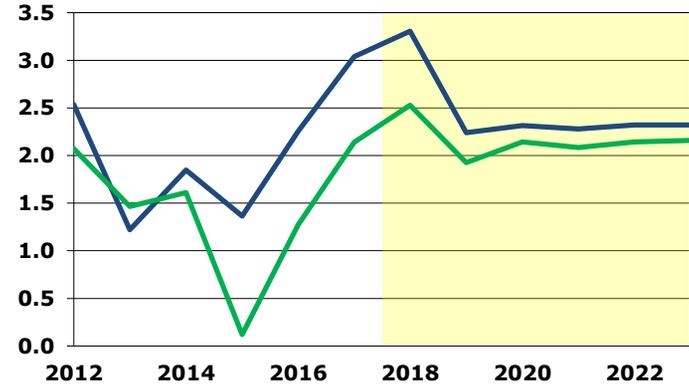
Forecast

Real Personal Income



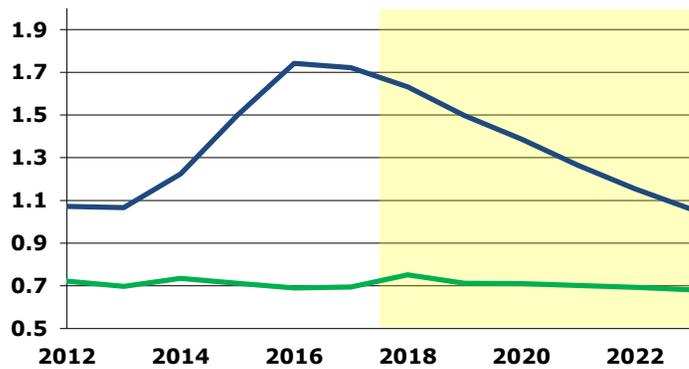
Source: Bureau of Economic Analysis 2016, ERFC 2023

Consumer Price Indices



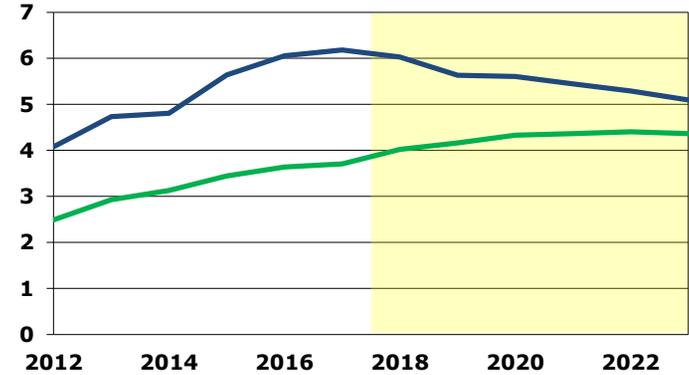
Source: Bureau of Labor Statistics 2017, ERFC 2023

Population



Source: Census Bureau 2016, ERFC 2023

New Housing Units Per 1,000 Population (Level)



Source: Census Bureau 2016, ERFC 2023

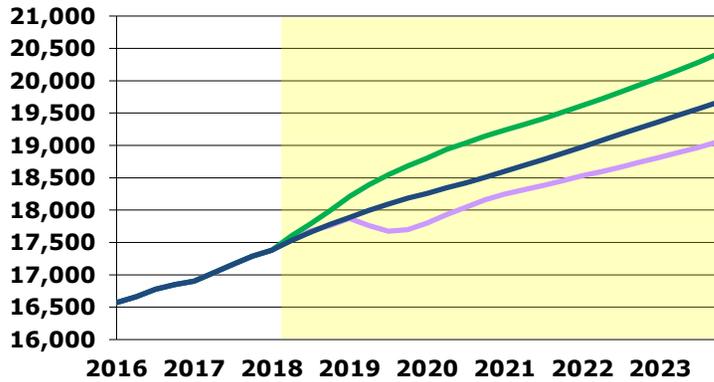
Washington

U.S.

Figure 2.8: Comparison of Alternative U.S. Economic Forecasts

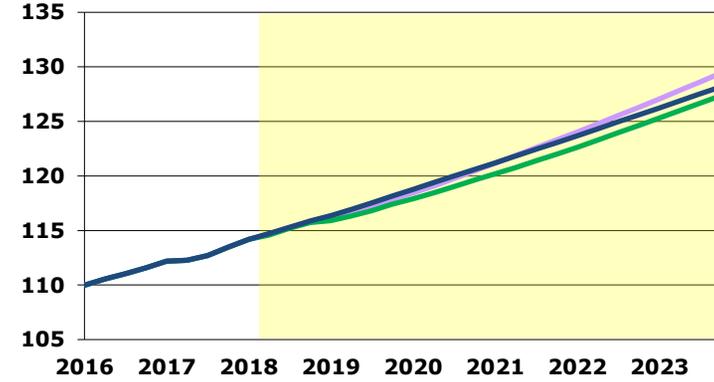
Forecast

Real GDP, Billions of 2009 Dollars



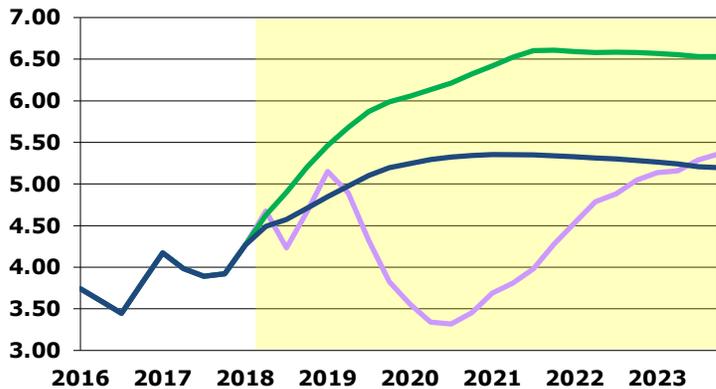
Source: Bureau of Economic Analysis 2018 Q1, ERFC 2023

PCE Price Index, 2009 = 100



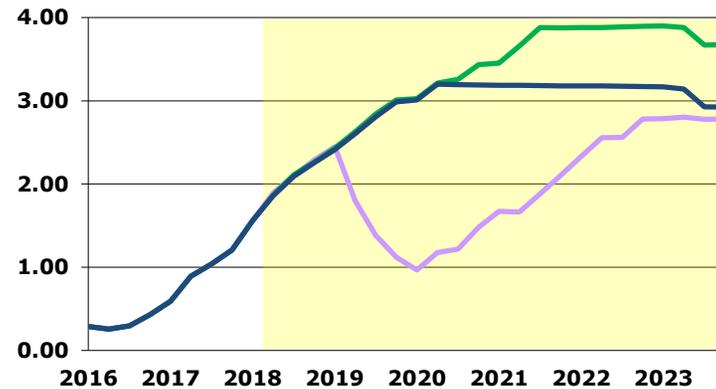
Source: Bureau of Economic Analysis 2018 Q1, ERFC 2023

Mortgage Rate, Percent



Source: Freddie Mac 2018 Q1, ERFC 2023

Three Month T-Bill Rate, Percent



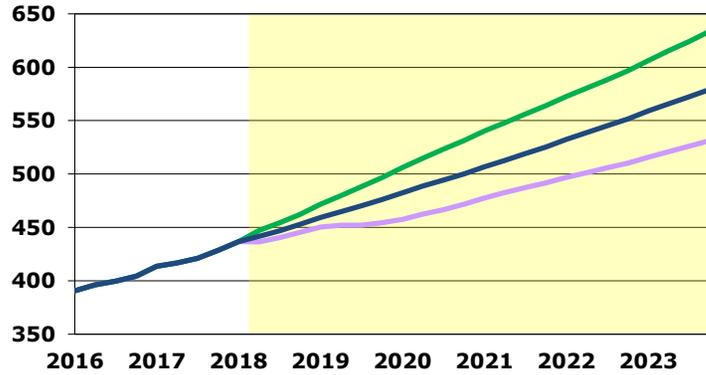
Source: Federal Reserve Board 2018 Q1, ERFC 2023

■ Baseline ■ Optimistic ■ Pessimistic

Figure 2.9: Comparison of Alternative Washington Economic Forecasts

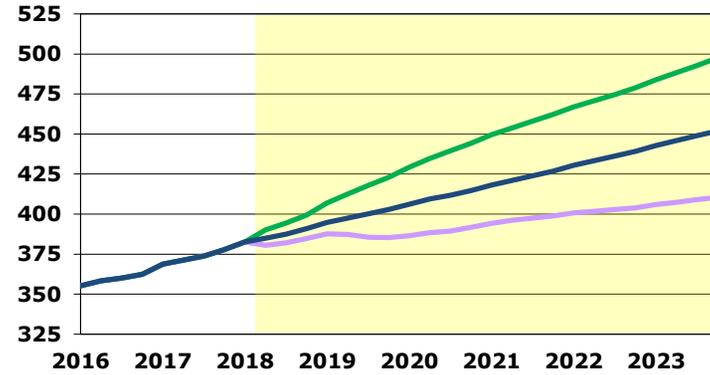
Forecast

Personal Income, Billions of Dollars



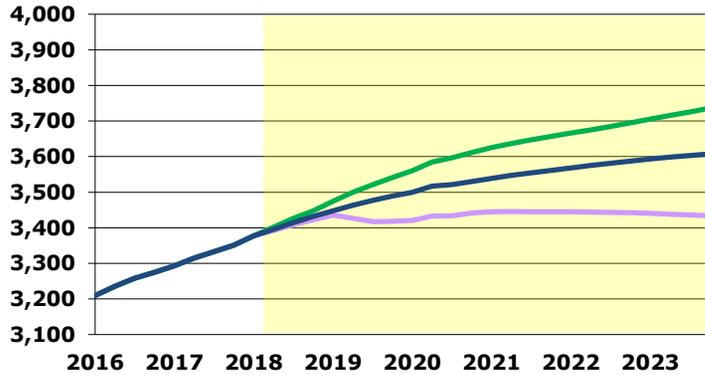
Source: Bureau of Economic Analysis 2016 Q4, ERFC 2023

Real Personal Income, Billions of 2009 Dollars



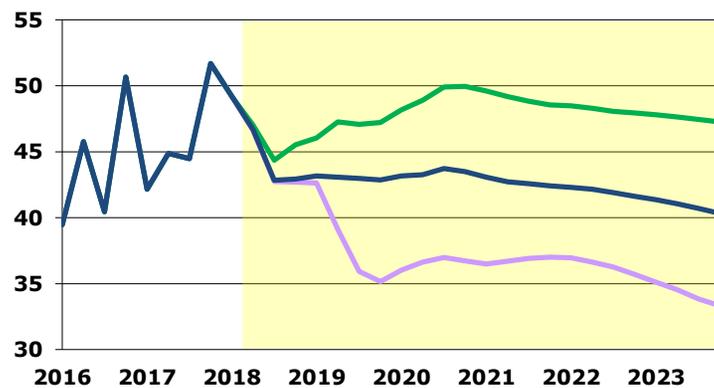
Source: Bureau of Economic Analysis 2016 Q4, ERFC 2023

Total Nonfarm Payroll Employment, Thousands



Source: WA State Employment Security 2018 Q1, ERFC 2023

Housing Permits, Thousands



Source: Census Bureau 2018 Q1, ERFC 2023

■ Baseline ■ Optimistic ■ Pessimistic



Chapter 3: Washington State Revenue Forecast Summary

- **General Fund-State (GF-S) revenue collections since the February 2018 forecast have come in \$189 million over the forecasted amount.**
- **Legislative and budget driven revenue changes since the February forecast have reduced forecasted GF-S revenues by \$1.2 billion in the current biennium and \$180 million in the 2019-21 biennium.**
- **\$935 million of the legislative forecast reduction in the current biennium is a transfer of funds from the GF-S to the near GF-S rather than a reduction in total state revenue.**
- **Due to the legislative changes, forecasted GF-S revenue has decreased by \$680 million in the current biennium, but forecasted GF-S revenue has increased by \$267 million in the 2019-21 biennium and \$350 million in the 2021-23 biennium.**
- **Near GF-S revenue, which includes all state revenue subject to the budget outlook process, is forecasted to increase by \$280 million in the current biennium, \$287 million in the 2019-21 biennium and \$380 million in the 2021-23 biennium.**

Overview

Excluding legislative changes, the revenue forecast has increased due to stronger than expected tax receipts and changes to the economic forecast

Since the February 2018 forecast, General Fund – State (GF-S) revenue collections have come in \$189 million higher than forecasted. Much of the collection surplus came from real estate excise taxes, which have continued to exceed expectations. Most of the rest came from stronger than expected retail sales and business and occupation taxes. The large collection surplus, coupled with increases in personal income and other changes to the economic forecast, has resulted in an increase in forecasted revenue. Legislative and budget driven revenue changes since the February forecast, however, have reduced some expected tax receipts and will transfer some funds out of the GF-S into a related account. Despite these changes, total state revenue as measured by the Near General Fund-State is forecasted to increase in all three forecasted biennia.

GF-S forecast change by biennium (millions):

17-19: -\$680
 19-21: +\$267
 21-23: +350

Table 3.1 summarizes the changes to the forecasts of GF-S revenue for the 2017-19 through 2021-23 biennia. For the current biennium, revenue sources that are tracked monthly came in \$189.4 million higher than forecasted in February. Changes to the economic forecast resulted in a \$303.6 million increase to projected collections for the rest of the biennium. Legislative changes, however, reduced expected revenue by \$1,173.5 million, for a net GF-S forecast reduction of \$680.4 million in the current 2017-19 biennium. Changes to the economic forecast resulted in a \$447.7 million increase to projected collections for the 2019-21 biennium, but the increase was partially offset by a reduction of \$181.2 million from legislative changes, for a net forecast increase of \$266.5 million. Legislative changes reduced expected revenue in the 2021-23 biennium by only \$7.2 million, reducing the \$356.8 million increase from economic changes to a net \$349.8 million increase for the biennium. The June 2018 forecast for GF-S revenue totals \$43,532.4 million in the 2017-19 biennium, \$48,519.9 million in the 2019-21 and \$52,281.8 million in the 2021-23 biennium.

GF-S forecast (\$millions):

2017-19:
 \$43,532

2019-21:
 \$48,520

2021-23:
 \$52,282

Table 3.1: Revisions to the General Fund-State Forecast (cash basis, millions of dollars)

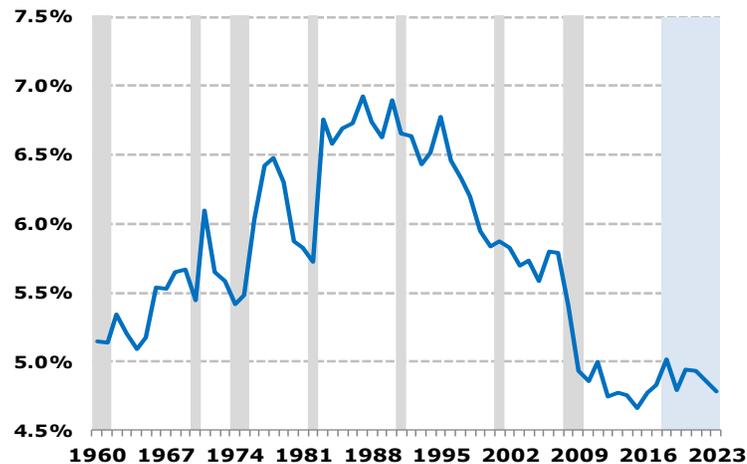
	2017-19 Biennium	2019-21 Biennium	2021-23 Biennium
Collection Experience	\$189.4	NA	NA
Non-Economic Change	(\$1,173.5)	(\$181.2)	(\$7.0)
Forecast Change	\$303.6	\$447.7	\$356.8
Total Change	(\$680.4)	\$266.5	\$349.8

Though the ratio of collections to income has increased from the FY 2015 trough, it is still near historical lows

As can be seen in Figure 3.1, the ratio of GF-S revenue collected relative to state personal income has been increasing after reaching a trough in FY 2015. The ratio of revenue to income has been on a downward trend since 1995, broken only by the housing boom that raised the ratio from 2005 to mid-2008, and by temporary taxes and transfers of funds from non-GF-S sources into the GF-S that again boosted the ratio in fiscal years 2011 and 2013. The ratio increased slightly in FY 2014 due to low personal income growth and then decreased slightly in FY 2015. The ratio then increased in FY 2016 and 2017, largely due to revenue increases stemming from legislative changes. Additional legislative changes enacted in June of 2017 boosted the forecasted FY2018 ratio, but legislative changes from the 2018 session reduced the expected ratio in FY 2019. The ratio rebounds in FY 2020 but then continues its downward trend. Despite the recent increases, the ratio of revenue to income in FY 2020 will still be below that of any fiscal year on record prior to FY 2008.

Figure 3.1: GF-S Revenue as a Percentage of State Personal Income (Fiscal Years)

Near GF-S revenue relative to state personal income has been on a declining trend since 1995



Source: ERFC, data through fiscal year 2017. Gray shaded area indicates recession; blue shaded area indicates forecast.

Forecast details are at the end of the chapter

The history of nominal and real GF-S revenue by biennium can be found in Table 3.3. GF-S forecast changes by agency and major revenue classification for the 2017-19 biennium can be found in Table 3.5 (cash) and Table 3.6 (GAAP). Forecast changes for the 2019-21 biennium can be found in Table 3.7 (cash) and Table 3.8 (GAAP). The GF-S forecast by fiscal year and major source category through FY 2023 can be found in Table 3.9.

Recent Collection Experience

Collections were \$189 million (2.7%) more than the February 2018 forecast

Revenue collections from the Department of Revenue (DOR), Department of Licensing, and Administrative Office of the Courts are tracked monthly. In the period since the February 2018 forecast, total revenue from the above sources came in \$189.4 million (2.7%) higher than expected (see Table 3.2). Revenue Act collections reported by the DOR were \$130.8 million (2.7%) above the forecast. Revenue from other DOR tax sources was \$55.2 million (2.6%) above the forecast.

Much of the non-Revenue Act forecast variance was due to real estate excise taxes

Much of the positive variance in non-Revenue Act collections was due to real estate excise taxes (REET), which came in \$24.6 million (8.0%) higher than forecasted. Transfers of unclaimed property into the GF-S came in \$14.3 million higher than forecasted. Property tax receipts came in \$6.8 million (0.4%) higher than forecasted. Liquor sales and liter tax receipts came in \$3.3 million (4.2%) higher than forecasted. Cigarette tax receipts came in \$4.0 million (3.5%) lower than forecasted. All other DOR revenue sources came in \$10.2 million (13.0%) higher than forecasted. Revenue from the Administrative Office of the Courts was \$3.4 million (15.7%) higher than forecasted.

Table 3.2: Pre-Forecast Collection Variance of Major General Fund-State Taxes by Agency (relative to the February 2018 forecast, cash basis, millions of dollars)

<u>Agency/Source</u>	<u>Collection Variance</u>	<u>Percent of Estimate</u>
Department of Revenue		
Revenue Act	\$130.8	2.7%
Non-Revenue Act	\$55.2	2.6%
Subtotal	\$186.0	2.7%
Administrative Office of the Courts	\$3.4	15.7%
Total*	\$189.4	2.7%

* Detail may not add to total due to rounding.

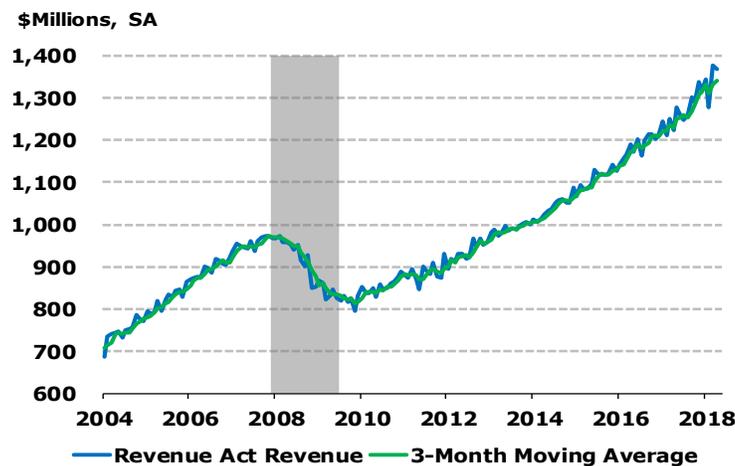
Source: ERFC; Period: February 11, 2018 - June 10, 2018

Adjusted Revenue Act collections were up 10.8% year over year in the most recent collection period and 10.6% in the previous period

Figure 3.2 shows seasonally adjusted Revenue Act receipts excluding payments received under the tax amnesty program in early 2011 and other large payments. It is also adjusted for some changes in payment patterns. As shown in the figure, collections have been on an upward trend since November 2009. Despite large swings in monthly collections, the three-month moving average continues on an upward trend, with growth increasing over the last seven months. Adjusted for large one-time payments and refunds, collections grew 10.8% year over year in the May 11 – June 10 collections period and 10.6% in the previous period. Adjusted year-over-year growth in collections representing first quarter 2018 activity (February 11 – May 10, 2018 collections) was 8.2% after 8.3% growth for third quarter 2017 activity (November 11, 2017 – February 10, 2018 collections). Collections growth for third quarter 2017 activity was 6.4% and second quarter growth was 5.6%.

Figure 3.2: Revenue Act Collections*

Year-over-year growth in adjusted Revenue Act collections began to increase in the fourth quarter of 2017



Source: ERFC; Data through June 10, 2018 preliminary allocation

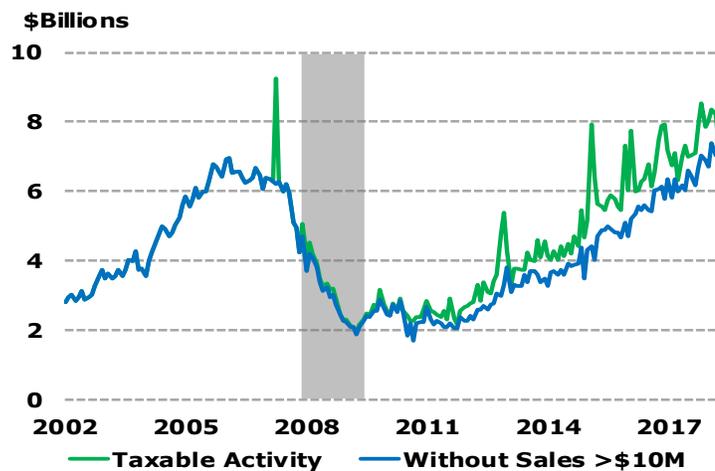
*Adjusted for large payments/refunds and payment pattern change

Sales of large commercial properties have slowed but residential taxable activity is increasing

Much of the large positive variance in REET collections was once again due to stronger-than-expected sales of large commercial property. Sales of property worth \$10 million or more totaled \$2.5 billion in the four months since the last forecast. These sales had totaled \$3.6 billion in the fourth quarter of 2017 but fell to \$2.6 billion in the first quarter of 2018. Large commercial sales have been responsible for much of the increase in taxable activity since November 2012, creating many spikes in activity, many representing transfers of controlling interest during corporate mergers (see Figure 3.3). Residential sales and smaller commercial sales have also been stronger than expected since the February 2018 forecast. Though the number of sales has increased, most of the increases in taxable activity have been the result of increased sale prices.

Figure 3.3: Taxable Real Estate Excise Activity, SA

Large commercial sales have caused spikes in activity since November 2012



Source: ERFC; data through May 2018

Legislative Changes to the Forecast

Legislative changes include a \$935 million transfer of property taxes from the GF-S to ELTA

Legislative and budget driven revenue changes from the 2018 legislative session have reduced forecasted GF-S collections substantially, especially in the current biennium. The largest change was a \$935 million transfer of property tax revenue from the GF-S to the Education Legacy Trust Account (ELTA). ELTA, along with the GF-S and the Washington Opportunities Pathways Account (OPA) are classified as part of the "Near General Fund-State," which are the state revenues subject to the budget outlook process. The transfer therefore does not reduce available funding for the broader state budget.

New legislation also reduces property tax rates for CY 2019

The next largest legislative change was a temporary reduction in the additional property tax levy that was established in June 2017. The reduction is in effect for the calendar year 2019 levy, which will decrease property tax revenue in both FY 2019 and FY

2020 by a total estimated amount of \$390 million. Other legislative and budget driven revenue changes were far less substantial. A summary of the legislative and budget-driven revenue changes to the forecast can be found in Table 3.19.

Revenue Forecasts by Source

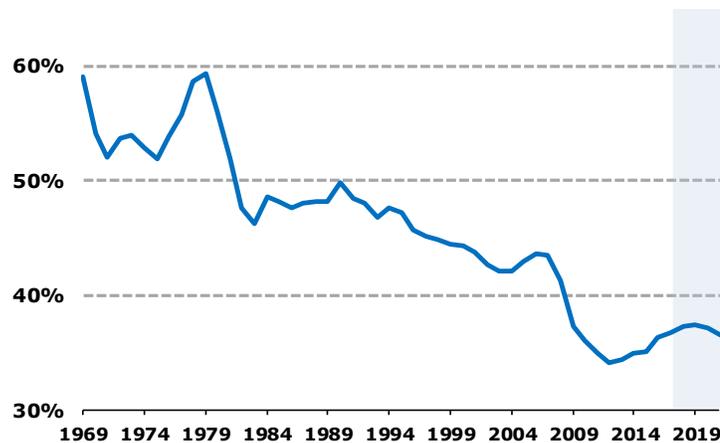
Department of Revenue

Taxes collected by DOR are most of GF-S taxes

The Department of Revenue (DOR) collects and administers the majority of Washington’s GF-S revenue, accounting for 94.8% of total GF-S revenue in FY 2017. The largest tax sources administered by the DOR are the retail sales tax, business and occupation tax, property tax, use tax, cigarette tax and real estate excise tax. The revenue forecasts discussed below can be found in Tables 3.5-3.8.

Figure 3.4: Taxable Sales* as Percentage of State Personal Income

The ratio of taxable sales to state personal income is on a declining trend



*Past tax base adjusted to represent current base. Shaded area indicates forecast

Source: ERFC; Data through FY 2017, forecast through FY 2023

Retail sales taxes are the largest source of GF-S revenue

The retail sales tax is the largest source of GF-S revenue, accounting for 47.9% of GF-S revenue in FY 2017. The state’s share of the tax is 6.5% of the sales price. While construction labor, repair services, and some other services are taxed, the tax does not apply to most services. Taxable sales as a share of personal income have been declining. Their share fell sharply during the recession and continued to fall through FY 2012. In that year, 34.1% of personal income was spent on taxable items and services, the lowest percentage on record. Increased spending on construction and autos, along with legislative changes to services and companies deemed taxable, caused the share to grow through FY 2017, reaching 37.4% of personal income. Legislation passed in June 2017 that extends the tax to bottled water and certain online sales is forecasted to cause the

share to continue to increase through FY 2019. From FY 2019 on, however, the additional revenue will not grow as quickly as personal income, causing the ratio of sales to income to continue its downward trend. The historical and forecasted relationship between taxable sales and income is illustrated in Figure 3.4.

Retail sales tax receipt growth forecast:

FY18: 7.9%
FY19: 6.6%
FY20: 4.3%
FY21: 3.7%

Strong growth in construction and auto sales brought taxable retail sales growth of 8.1% in FY 2015. Legislative changes coupled with continued growth in construction and auto sales boosted growth in FY 2016 taxable activity to 8.4%. Slowing construction growth and flat auto sales lowered growth in FY 2017 activity to 6.3%. Forecasted growth increases to 7.5% in FY 2018. Growth in FY 2019 stays relatively strong at 6.0% despite slowing auto sales and construction because of increases in the number of online sales that are taxed due to legislation passed in 2017. Growth then declines through the end of the forecast period (see Table 3.4) as auto sales, construction and online sales growth settles down to lower levels. Due to the lag between taxable activity and collections and the presence of tax deferrals, credits, refunds, and payments of past due taxes, the growth in actual collections differs from the growth in taxable activity. Growth in collections for FY 2017 was 6.0%. Collections growth is forecasted at 7.9% in FY 2018, 6.6% in FY 2019, 4.3% in FY 2020, 3.7% in FY 2021, 3.4% in FY 2022 and 3.3% in FY 2023.

Business and Occupation taxes are the second largest source of GF-S revenue

The business and occupation (B&O) tax is the second largest source of GF-S revenue, accounting for 19.4% of GF-S revenue in FY 2017. It is a tax on the gross receipts of all businesses operating in Washington. The state portion of the tax applies ten different rates according to various classifications of business activities. In FY 2016, the largest contributor to total state B&O tax was the services sector, which had a gross tax rate of 1.5% and represented an estimated 45% of B&O taxes due. The next largest sector was retailing, which is taxed at 0.471% and represented an estimated 25% of taxes due, followed by the wholesaling sector, which is taxed at 0.484% and represented an estimated 20% of taxes due.

B&O tax growth forecast:

FY18: 8.5%
FY19: 2.8%
FY20: 4.9%
FY21: 4.8%

In FY 2017, B&O tax receipts grew by 5.3%. Growth is forecasted to increase to 8.5% in FY 2018 due to large one-time payments of past due taxes since the last forecast and the continued legislative expansion of the tax base. Forecasted growth then slows to 2.8% in FY 2019 due to the elevated level of FY 2018 collections. Growth is forecasted at 4.9% in FY 2020, 4.8% in FY 2021 and 4.7% in FY 2022 and FY 2023.

State property taxes are the third largest source of GF-S revenue

The state property tax levy is the third largest source of GF-S revenue, accounting for 10.6% of total revenue in FY 2017. Although the tax goes into the GF-S, it is dedicated to the funding of basic education. As discussed in the [September 2017](#) forecast publication, the total amount of the state levy was

increased by new legislation in June 2017, with the increases beginning in FY 2018.

Property tax growth forecast:

FY18: 31.2%
FY19: -15.6%
FY20: 51.0%
FY21: 10.0%

Constrained by prior law to a levy growth rate of one percent on existing property (or the rate of inflation if less than one percent), property tax collections grew by 2.1% in FY 2016 and 1.9% in FY 2017. The first payments of the additional state levy began to arrive in the latter half of FY 2018, bringing projected total GF-S property tax growth of 31.2% for the fiscal year. New legislation from the 2018 session discussed above then decreases collections for FY 2019 by 15.6% via a temporary reduction in the levy rate for calendar year 2019 and a \$935 million transfer of collections from the new levy to ELTA. Growth rebounds to 51.0% in FY 2020 with the absence of a transfer and the end of the temporary levy reduction in the second half of the year. Growth remains high at 10.0% in FY 2021, due to a full year at the unreduced levy rate, before falling to 3.5% in FY 2022 and 2.7% in FY 2023.

REET was the fourth largest GF-S source in FY 2017

The real estate excise tax (REET) was the fourth largest DOR source of GF-S revenue in FY 2017, accounting for 5.1% of total revenue. The state portion of REET is 1.28% of the sales price. The tax is divided between the GF-S (92.3%), a fund for local public works (2.0%), a fund for assistance of cities and counties (1.6%) and, from July 1, 2013 – June 30, 2019, the Education Legacy Trust Account (4.1%). The tax is applied to both residential and commercial real estate, including purchases of vacant land.

REET growth forecast:

FY18: 7.9%
FY19: -10.1%
FY20: -4.1%
FY21: 2.7%

Due to a high number of large sales of commercial property, REET receipts grew by 34.0% in FY 2013 and 15.2% in FY 2014. Even higher commercial sales coupled with strengthening residential sales boosted FY 2015 collections growth to 20.4% and FY 2016 growth to 19.4%. While large commercial sales slowed somewhat in FY 2017, the residential market accelerated, resulting in a further 13.6% increase. The pattern has continued into FY 2018, resulting in forecasted further growth of 7.9%. Large commercial sales are expected to decline further in FY 2019 while residential sales plateau and then slightly decrease, resulting in a 10.1% reduction in collections in FY 2019 and a 4.1% reduction in FY 2020. Growth then resumes slowly at 2.7% in FY 2021, 1.6% in FY 2022 and 2.5% in FY 2023.

Use tax was the fifth largest GF-S source in FY 2017

The state use tax was the fifth largest GF-S revenue source in FY 2017 at 3.4% of total receipts. The state portion of the tax is 6.5% of the purchase price for items used in the state that were not subject to the state retail sales tax. Examples of items subject to the state use tax are goods purchased out-of-state; online and mail-order purchases, where sales tax was not collected; or purchases of used vehicles from private individuals.

Use tax growth forecast:

FY18: 6.7%
FY19: -2.0%
FY20: 3.8%
FY21: 4.4%

The legislated elimination of certain tax exemptions, along with several large one-time remittance payments, boosted use tax growth to 7.1% in FY 2016. Growth decreased to 6.0% in FY 2017. Strong first quarter collections, bolstered by unexpected strength in used car sales, have increased expected growth to 6.7% in FY 2018. Due to FY 2018's elevated level, collections are forecasted to shrink by 2.0% in FY 2019. Growth is then expected to resume at more normal levels of 3.8% in FY 2020, 4.4% in FY 2021, 4.3% in FY 2022 and 4.1% in FY 2023.

Public utility taxes were the sixth largest GF-S source in FY 2017

Public utility taxes were the sixth largest DOR source of GF-S revenue in FY 2017, bringing in 2.1% of total receipts. The tax applies to the gross income of sales to consumers by public and privately owned utilities and is in lieu of the B&O tax. The largest source of public utility taxes is the 3.873% tax on the distribution and generation of electrical power, followed by the 3.852% tax on the distribution of natural gas.

Growth forecast:

FY18: 3.5%
FY19: 6.8%
FY20: 3.1%
FY21: 6.8%

Public utility tax receipts grew by 4.5% in FY 2016. Lower natural gas prices brought growth in receipts to 1.4% in FY 2017. Growth is forecasted at 3.5% in FY 2018. A recovery in projected natural gas prices and increased electricity prices bring expected growth of 6.8% in FY 2019. Growth is forecasted at 3.1% in FY 2020, 6.8% in FY 2021, 4.6% in FY 2022 and 3.4% in FY 2023.

The cigarette tax was the seventh largest GF-S source in FY 2017

The state tax on cigarettes was the seventh largest DOR GF-S revenue source in FY 2017 at 1.9% of total receipts. Prior to FY 2010, the tax made up a much smaller portion of GF-S revenue because much of the tax was dedicated to non-GF-S accounts. In FY 2010, all of the tax except the portion dedicated to the Education Legacy Trust account was redirected to the GF-S, and in FY 2011 all of the cigarette tax was redirected to the GF-S. The current tax rate, which took effect May 1, 2010, is \$3.025 per pack of 20 cigarettes.

Cigarette tax growth forecast:

FY18: -4.0%
FY19: -0.8%
FY20: -2.4%
FY21: -1.5%

The total number of taxed cigarettes has been on a downward trend due to a continuing decline in the number of smokers. Recently, the rate of decline has been increasing further due to increased consumption of e-cigarettes, which are not subject to the cigarette tax but are subject to retail sales taxes. Despite an increase in tax enforcement established in the 2015 legislative session, collections decreased by 1.8% in FY 2016 and 3.5% in FY 2017. Collections are forecasted to decrease by 4.0% in FY 2018, 0.8% in FY 2019, 2.4% in FY 2020, 1.5% in FY 2021, 2.2% in FY 2022 and 2.4% in FY 2023. These reductions are larger than forecasted in February, due to a downward revision to the state's population estimates and lower actual sales in FY 2018.

Forecasted Revenue from Cannabis-Related Sales

Sales of cannabis products in state-licensed stores began in July 2014

Initiative 502, approved by voters in the November 2012 election, legalized the sale and use of recreational cannabis and cannabis products in Washington. The first legal sales of cannabis products in state-licensed stores occurred in July 2014. During the 2015 regular and special sessions, legislation was passed that substantially altered the market rules set up by the initiative. 2SSB 5052, passed during the regular session, brought previously unregulated medical marijuana dispensaries into the same regulatory regime as licensed recreational cannabis outlets. This legislation was outlined in our [June 2015](#) forecast publication. Subsequent to the June 2015 forecast, 2E2SHB 2136, passed in the second special session, changed the cannabis excise tax from a 25 percent tax collected from growers, processors and retailers to a 37 percent tax on retail sales only. The law also made changes to the distribution of tax and fee revenue. Cannabis taxes and license fees are still collected by the Liquor and Cannabis Board and are placed into a dedicated fund with annual appropriations to various other accounts including the GF-S.

Change in GF-S forecast of total cannabis-related revenue by biennium (millions):

17-19: *-\$2.8*
19-21: *-\$9.4*
21-23: *\$23.4*

Distributions of cannabis excise taxes to the GF-S totaled \$15.3 million in the 2013-15 biennium and \$147.6 million in the 2015-17 biennium. GF-S distributions are forecasted at \$247.2 million in the 2017-19 biennium, a decrease of \$2.8 million from the February forecast, and \$268.3 million in the 2019-21 biennium, a decrease of \$9.4 million. The forecast of GF-S distributions for the 2021-23 biennium is \$321.2 million, an increase of \$23.4 million from the previous forecast. Details of the forecasted distributions from the account can be found in Table 3.18.

The Office of Financial Management (Other Agencies)

Forecast change by biennium (millions):

17-19: *-\$21.0*
19-21: *\$5.8*
21-23: *\$3.8*

The Office of Financial Management (OFM) is responsible for preparing General Fund-State revenue and transfer forecasts for all agencies excluding the Department of Revenue, the Liquor and Cannabis Board, the Insurance Commissioner, the Washington State Lottery, and the State Treasurer. Starting with the September 2017 forecast cycle, the office also added the Department of Licensing to its list of covered agencies. The office's forecast for the 2017-19 biennium was decreased \$21.0 million to \$307.0 million, due mainly to budget legislation that increased the transfer of cannabis tax revenue to local governments by \$18 million. The office's forecast for the 2019-21 biennium was increased \$5.8 million to \$168.4 million and the forecast for the 2021-23 biennium was increased \$3.8 million to \$161.4 million.

State Treasurer

*Forecast
change by
biennium
(millions):*

17-19: *-\$9.1*
19-21: *-\$8.5*
21-23: *\$0.4*

The Office of the State Treasurer generates GF-S revenue by investing state short-term cash reserves. The office's forecast for the 2017-19 biennium has been decreased \$9.1 million to \$19.3 million and the forecast for the 2019-21 biennium has been decreased \$8.5 million to \$40.8 million due to the reduction in forecasted balances from the decreased property tax levy and the legislated transfer of \$935 million from the GF-S to ELTA. The office's initial forecast of revenue for the 2021-23 biennium has been increased \$0.4 million to \$54.2 million.

Insurance Commissioner

*Forecast
change by
biennium
(millions):*

17-19: *\$51.3*
19-21: *\$36.1*
21-23: *\$37.4*

The Office of the Insurance Commissioner collects premium taxes on most classes of insurance sold in Washington State. These taxes are distributed to the GF-S and various accounts in support of fire services. The GF-S revenue forecast for the 2017-19 biennium has been increased \$51.3 million to \$1,1218.5 million and the forecast for the 2019-21 biennium has been increased \$36.1 million to \$1,310.3 million. The forecast of revenue for the 2021-23 biennium has been increased \$37.4 million to \$1,421.0 million. Forecasted increases for all of the biennia was due to a larger-than-expected volume of actual taxable activity in FY 2018.

Liquor and Cannabis Board

*Forecast
change by
biennium
(millions):*

17-19: *-\$6.1*
19-21: *-\$6.3*
21-23: *\$21.6*

The Liquor and Cannabis Board (LCB) collects fees from distributors and retailers on sales of spirits and surtaxes on sales of beer and wine (sales and liter taxes on sprits are collected by the DOR). The LCB is also responsible for the collection of excise taxes and fees associated with the legalized sale and use of recreational and medicinal cannabis discussed previously. The forecast of revenue for the 2017-19 biennium has been decreased \$6.1 million to \$496.8 million and the forecast for the 2019-21 biennium has been decreased \$6.3 million to \$544.0 million. The forecast of revenue for the 2021-23 biennium has been increased \$21.6 million to \$612.9 million. The forecast changes were a combination of changes to expected fees and taxes associated with beer, wine, and liquor distribution and the changes in expected distributions of cannabis excise taxes to the GF-S discussed above. Budget driven revenue changes, listed in Table 3.19, also contributed to the forecast change.

Lottery Commission

While most of the proceeds from sales of lottery games go to the Washington Opportunity Pathways Account (OPA), distributions are also made to programs such as Problem Gambling, Economic

GF-S forecast change by biennium (millions):

17-19: \$6.1
19-21: \$3.6
21-23: \$2.5

Development and the Stadium/Exhibition Center. Details of the forecast of the distribution of Lottery earnings can be found in Table 3.15 on a cash basis and Table 3.16 on a GAAP basis. When total profits from all Washington-only games plus the Powerball game exceed \$102 million per year, the amount above \$102 million is transferred to the GF-S. Forecasted transfers of lottery revenue into the GF-S for the 2017-19 biennium have been increased \$6.1 million to \$55.8 million and forecasted transfers for the 2019-21 biennium have been increased \$3.6 million to \$58.3 million. The forecast of GF-S transfers for the 2021-23 biennium has been increased \$2.5 million to \$59.8 million.

OPA forecast change by biennium (millions):

17-19: \$0.8
19-21: \$2.9
21-23: \$3.8

The OPA receives all profits (excluding statutory transfers) from Washington-only lottery games plus all profits from the Mega Millions game. The forecast of OPA revenue for the 2017-19 biennium has been increased \$0.8 million to \$258.0 million and the forecast for the 2019-21 biennium has been increased \$2.9 million to \$260.9 million. The forecast of OPA revenue for the 2021-23 biennium has been increased \$3.8 million to \$269.4 million.

Administrative Office of the Courts

Forecast change by biennium (millions):

17-19: \$7.1
19-21: \$0.8
21-23: \$0.1

The Administrative Office of the Courts collects surcharges on certain filing fees, fines, and infraction penalties and transfers this revenue to the GF-S on a monthly basis. The forecast for the 2017-19 biennium has been increased \$7.1 million to \$144.5 million due to higher-than-expected actual transfers in FY 2018. The forecast of transfers for the 2019-21 biennium has been increased \$0.8 million to \$135.2 million and the forecast of revenue for the 2021-23 biennium has been increased \$0.1 million to \$137.8 million.

Track Record for the 2017-19 Biennium

The June 2018 forecast is \$550 million (1.3%) higher than the forecasted revenue at the time of the initial 2017-19 budget

Table 3.10 summarizes the historical changes to the GF-S revenue forecast for the 2017-19 biennium. The February 2014 forecast was the initial forecast for the biennium. The June 2018 forecast is \$4.8 billion (12.5%) higher than the initial forecast. Non-economic changes have increased the forecast by \$1.3 billion (3.4%). Excluding non-economic changes, the current forecast is \$3.5 billion (9.1%) higher than the initial forecast. The June 2017 forecast, coupled with the \$2,079 million in legislative and budget-driven revenue changes passed in the 2017 special legislative sessions, was the basis for the initial budget for the 2017-19 biennium. The June forecast of biennial revenue is \$550 million (1.3%) higher than that sum.

Track Record for the 2019-21 Biennium

This forecast is \$5.1 billion (11.7%) higher than the initial February 2016 forecast, due mainly to legislative changes

Table 3.11 summarizes the historical changes to the GF-S revenue forecast for the 2019-21 biennium. The February 2016 forecast was the initial forecast for the biennium. The June 2018 forecast is \$5.1 billion (11.7%) higher than the initial forecast. Non-economic changes have increased the forecast by \$3.1 billion (7.1%). Excluding non-economic changes, the current forecast is \$2.0 billion (4.6%) higher than the initial forecast.

The Relationship between the Cash and GAAP General Fund-State Revenue Forecasts

GAAP forecasts are based on the period in which the revenue is earned rather than received

Legislation enacted in 1987 requires that the state's biennial budget be in conformance with Generally Accepted Accounting Principles (GAAP). It also requires a GF-S revenue forecast on both a cash and GAAP basis. The GAAP forecasts of GF-S revenue for the 2017-19 and 2019-21 biennia are presented in Tables 3.6 and 3.8 and the GAAP forecast of Lottery revenue transfers for those biennia is in Table 3.15. The primary difference between the cash and GAAP forecasts is the timing of the receipt of revenue. On a GAAP basis, revenue is credited to the biennium in which it is earned even though it may not have been received. The cash forecast, on the other hand, reflects expected cash receipts during a fiscal period. The forecast on a GAAP, or accrual, basis is primarily used for financial reporting. The cash forecast is used for cash flow management and revenue tracking. The cash forecast is also the forecast used in the state's budgetary balance sheet, which is the principal tool for assessing the General Fund's current surplus or deficit position. References to the GF-S forecast in the text of this chapter refer to the cash forecast unless otherwise noted. Likewise, figures from revenue tables other than Tables 3.6, 3.8 and 3.16 are projected on a cash basis.

Budgetary Balance Sheet for the 2017-19 Biennium

The forecast implies total GF-S reserves of \$3.72 billion at the end of the 2017-19 biennium and \$3.75 billion in reserves for GF-S, ELTA and OPA

Table 3.12 shows the budgetary balance sheets for the 2017-19 biennium as prepared by the Office of Financial Management and the House and Senate fiscal committees. The balance sheet shows not only projected GF-S spending and resources but also total projected spending and resources for the GF-S plus the other main non-transportation state-funded accounts: the Education Legacy Trust Account (ELTA) and the Washington Opportunity Pathways Account (OPA). As shown in the table, the GF-S beginning fund balance for the 2017-19 biennium is \$1,100.6 million and the total beginning balance for GF-S, ELTA and OPA is \$1,148.5 million. Based on the June 2018 revenue forecast and currently enacted budgets, unrestricted GF-S reserves are projected to be \$1,019.1 million at the end of the 2017-19 biennium and GF-S, ELTA and OPA reserves are

projected to be \$1,776.2 million. In addition, the Budget Stabilization Account is projected to have a balance of \$1,139.3 million, bringing total projected GF-S reserves to \$2,158.4 million. Projected combined reserves for the ELTA and OPA are \$757.1 million, for total projected reserves of \$2,915.5 million for GF-S, ELTA and OPA at the end of the 2017-19 biennium.

Alternative Forecasts for the 2017-19 and 2019-21 Biennia

Optimistic scenario (billions):
 17-19: +\$0.9
 19-21: +\$3.0

Pessimistic scenario:
 17-19: -\$0.9
 19-21: -\$3.2

Chapter 2 outlines optimistic and pessimistic economic scenarios relative to the baseline economic forecast. The forecast assigns a probability of 70% to the baseline forecast, 15% to a scenario based on the upside risks and 15% to a scenario based on the downside risks for the 2017-19 biennium. The probabilities for the 2019-21 biennium are 60% to the baseline forecast, 15% to the optimistic scenario and 25% to the pessimistic scenario. The revenue implications of these alternative scenarios for the 2017-19 biennium are shown in Table 3.13 and those of the 2019-21 biennium are shown in Table 3.14. For the 2017-19 biennium, the optimistic forecast generates \$44,383.1 million in GF-S revenue, \$850.7 million (2.0%) more than the baseline scenario, while the pessimistic forecast produces \$42,595.4 million in revenue, \$937.0 million (2.2%) less than the baseline. For the 2019-21 biennium, the optimistic forecast generates \$51,540.0 million in GF-S revenue, \$3,020.1 million (6.2%) more than the baseline scenario, while the pessimistic forecast produces \$45,238.7 million in revenue, \$3,281.2 million (6.8%) less than the baseline.

Near General Fund Forecasts for the 2017-19–2021-23 Biennia

Near General Fund Forecast (millions):

2017-19:
 \$45,288.0

2019-21:
 \$49,363.3

2021-23:
 \$53,170.1

“Near General Fund” accounts are those included in the GF-S plus the Education Legacy Trust Account (ELTA) and the Washington Opportunity Pathways Account (OPA). The ELTA is primarily funded by a tax on estates of over \$2 million. Legislation from the 2013 special session, however, added revenue from public utility and real estate excise taxes, which had previously gone into non-GF-S accounts. Subsequent legislation also added revenue from solid waste taxes beginning in FY 2016 and a transfer of \$935 million from the additional property tax levy to the account in FY 2019. The OPA is funded by lottery revenue as discussed above. The forecast of Near General Fund revenue for the 2017-19 biennium is \$45,288.0 million, \$297.9 million more than the June 2018 forecast, and the forecast for the 2019-21 biennium is \$49,363.3 million, \$286.8 million more than the February forecast. The forecast of Near General Fund revenue for the 2021-23 biennium is \$53,170.1 million, \$379.9 million more than the February forecast. The Near General Fund forecast and recent history by fiscal year are presented in Table 3.17.

Table 3.3
General Fund-State collections*
(millions of dollars, cash basis)

Biennium	Current Dollars	Percent Change	2009 Chained Dollars	Percent Change
1961-63	\$817.1		\$4,300.0	
1963-65	866.2	6.0%	4,439.3	3.2%
1965-67	1,128.6	30.3%	5,565.5	25.4%
1967-69	1,440.5	27.6%	6,658.6	19.6%
1969-71	1,732.7	20.3%	7,767.2	16.6%
1971-73	1,922.1	10.9%	7,971.8	2.6%
1973-75	2,372.4	23.4%	8,500.2	6.6%
1975-77	3,395.0	43.1%	10,580.8	24.5%
1977-79	4,490.0	32.3%	12,284.4	16.1%
1979-81	5,356.4	19.3%	12,197.3	-0.7%
1981-83	6,801.4	27.0%	13,492.7	10.6%
1983-85	8,202.4	20.6%	15,008.3	11.2%
1985-87	9,574.6	16.7%	16,528.2	10.1%
1987-89	10,934.1	14.2%	17,618.6	6.6%
1989-91	13,309.0	21.7%	19,772.8	12.2%
1991-93	14,862.2	11.7%	20,789.0	5.1%
1993-95	16,564.6	11.5%	22,140.3	6.5%
1995-97	17,637.7	6.5%	22,629.9	2.2%
1997-99	19,620.1	11.2%	24,520.4	8.4%
1999-01	21,262.1	8.4%	25,587.4	4.4%
2001-03	21,140.7	-0.6%	24,595.4	-3.9%
2003-05	23,388.5	10.6%	26,077.7	6.0%
2005-07	27,772.0	18.7%	29,316.2	12.4%
2007-09	27,703.0	-0.2%	27,888.3	-4.9%
2009-11	28,218.1	1.9%	27,704.7	-0.7%
2011-13	30,657.0	8.6%	28,906.9	4.3%
2013-15	33,666.0	9.8%	30,933.1	7.0%
2015-17	38,317.4	13.8%	34,552.9	11.7%
2017-19 ^F	43,532.4	13.6%	37,873.0	9.6%
2019-21 ^F	48,519.9	11.5%	40,538.8	7.0%
2021-23 ^F	52,281.8	7.8%	41,943.4	3.5%

^F June 2018 forecast

*Total General Fund-State revenue and transfers. Cash basis; includes rate base and administrative changes. Modified cash basis: 1985-87 and prior; pure cash basis: 1987-89 and after. May not be comparable because the collection totals include the impact of rate, base and administrative changes.

Source: Department of Revenue, the Office of Financial Management and the Economic and Revenue Forecast Council 's June 2018 forecast.

Table 3.4
Taxable retail sales*
(millions of dollars)

Fiscal Year	Amount	Percent Change
1981	25,197	4.7%
1982	26,097	3.6%
1983	29,368	12.5%
1984	29,156	-0.7%
1985	30,687	5.3%
1986	32,158	4.8%
1987	34,647	7.7%
1988	37,452	8.1%
1989	41,429	10.6%
1990	47,183	13.9%
1991	49,812	5.6%
1992	53,189	6.8%
1993	55,319	4.0%
1994	59,009	6.7%
1995	61,927	4.9%
1996	62,817	1.4%
1997	66,748	6.3%
1998	72,059	8.0%
1999	77,197	7.1%
2000	83,335	8.0%
2001	85,633	2.8%
2002	84,418	-1.4%
2003	86,165	2.1%
2004	90,139	4.6%
2005	97,253	7.9%
2006	107,071	10.1%
2007	115,527	7.9%
2008	118,676	2.7%
2009	106,379	-10.4%
2010	99,983	-6.0%
2011	101,825	1.8%
2012	106,036	4.1%
2013	113,173	6.7%
2014	120,453	6.4%
2015	130,168	8.1%
2016	141,103	8.4%
2017	149,992	6.3%
2018 ^F	161,194	7.5%
2019 ^F	170,855	6.0%
2020 ^F	177,882	4.1%
2021 ^F	184,352	3.6%
2022 ^F	190,596	3.4%
2023 ^F	196,855	3.3%

^F June 2018 forecast
Source: ERFC

* Actual Base. Includes statutory and administrative changes to the tax base. Historical fiscal year data are from quarterly taxable sales reported by taxpayers on the state's Combined Excise tax return. Reported totals affected by enacted legislation. Major base changes include: exemption of off-premises food, beginning 1978:3 (fiscal 1979); extension of the sales tax base to off premises food (1982:2 to 1983:2); food again exempt 1983:3 (fiscal 1984); extension of the sales tax base to candy, gum and bottled water (June 1 - December 2, 2010); elimination of sales tax exemption for residential phone service (July 1, 2013); elimination of sales tax exemption for bottled water (July 1, 2017); extension of economic nexus to certain remote sellers (January 1, 2018).

Table 3.5

Comparison of the General Fund-State forecast by agency

2017-19 biennium; cash basis

(millions of dollars)

Forecast by Agency	Feb. 2018 Forecast¹	Non- Economic Changes	Forecast Revision	June 2018 Forecast²	Total Change
Department of Revenue					
Retail Sales	\$20,909.0	(\$0.2)	\$177.8	\$21,086.6	\$177.6
Business & Occupation Use	8,347.3	(9.9)	71.6	8,409.0	61.7
Public Utility	1,363.2	0.0	61.3	1,424.5	61.3
Liquor Sales/Liter	875.8	(0.3)	(5.9)	869.6	(6.2)
Cigarette	546.5	0.0	2.2	548.7	2.2
Property (State Levy)	731.2	0.0	(8.4)	722.8	(8.4)
Real Estate Excise	6,179.7	(1,141.2)	5.4	5,043.9	(1,135.8)
Timber Excise	1,966.3	(1.0)	96.8	2,062.0	95.7
Other	4.5	0.0	0.4	4.9	0.4
Subtotal	1,076.0	0.0	42.7	1,118.6	42.7
Insurance Commissioner	41,999.4	(1,152.7)	443.9	41,290.6	(708.8)
Insurance Premiums	1,167.2	0.0	51.3	1,218.5	51.3
Liquor Control Board					
Fees, Cannabis Excise Tax	445.9	(2.7)	(3.5)	439.7	(6.2)
Beer & Wine Surtax	57.0	0.0	0.1	57.1	0.1
Lottery Commission					
Lottery Revenue	49.7	(0.0)	6.1	55.8	6.1
State Treasurer					
Interest Earnings	28.3	0.0	(9.1)	19.3	(9.1)
Office of Financial Management**					
Other Agencies	327.9	(18.0)	(3.0)	307.0	(21.0)
Administrative Office of the Courts					
Fines and Forfeitures	137.4	(0.0)	7.1	144.5	7.1
Total General Fund-State *	\$44,212.9	(\$1,173.4)	\$493.0	\$43,532.4	(\$680.4)

¹ Forecast for the 2017-19 biennium adopted by the Economic and Revenue Forecast Council February 15, 2018² Forecast for the 2017-19 biennium, adopted June 19, 2018

*Detail may not add to totals because of rounding.

**OFM forecast now includes revenue from the Department of Licensing.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor Control Board, Office of Financial Management

Table 3.6

Comparison of the General Fund-State forecast by agency

2017-19 biennium; GAAP basis

(millions of dollars)

Forecast by Agency	Feb. 2018 Forecast¹	Non- Economic Changes	Forecast Revision	June 2018 Forecast²	Total Change
Department of Revenue					
Retail Sales	\$20,909.0	(\$0.2)	\$177.8	\$21,086.6	\$177.6
Business & Occupation Use	8,347.3	(9.9)	71.6	8,409.0	61.7
Public Utility	1,363.2	0.0	61.3	1,424.5	61.3
Liquor Sales/Liter	875.8	(0.3)	(5.9)	869.6	(6.2)
Cigarette	546.5	0.0	2.2	548.7	2.2
Property (State Levy)	731.2	0.0	(8.4)	722.8	(8.4)
Real Estate Excise	6,179.7	(1,141.2)	5.4	5,043.9	(1,135.8)
Timber Excise	1,966.3	(1.0)	96.8	2,062.0	95.7
Other	4.1	0.0	0.5	4.6	0.5
Subtotal	1,076.2	0.0	42.4	1,118.6	42.4
	41,999.3	(1,152.7)	443.7	41,290.3	(709.0)
Insurance Commissioner					
Insurance Premiums	1,167.2	0.0	51.3	1,218.5	51.3
Liquor Control Board					
Fees, Cannabis Excise Tax	445.9	(2.7)	(3.5)	439.7	(6.2)
Beer & Wine Surtax	57.0	0.0	0.1	57.1	0.1
Lottery Commission					
Lottery Revenue	49.6	(0.0)	6.3	55.9	6.3
State Treasurer					
Interest Earnings	28.2	0.0	(8.1)	20.1	(8.1)
Office of Financial Management**					
Other Agencies	327.9	(18.0)	(3.0)	307.0	(21.0)
Administrative Office of the Courts					
Fines and Forfeitures	137.4	(0.0)	7.1	144.5	7.1
Total General Fund-State *	\$44,212.4	(\$1,173.4)	\$494.0	\$43,533.0	(\$679.4)

¹ Forecast for the 2017-19 biennium adopted by the Economic and Revenue Forecast Council February 15, 2018² Forecast for the 2017-19 biennium, adopted June 19, 2018

*Detail may not add to totals because of rounding.

**OFM forecast now includes revenue from the Department of Licensing.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor Control Board, Office of Financial Management

Table 3.7

Comparison of the General Fund-State forecast by agency

2019-21 biennium; cash basis

(millions of dollars)

Forecast by Agency	Feb. 2018 Forecast¹	Non- Economic Changes	Forecast Revision	June 2018 Forecast²	Total Change
Department of Revenue					
Retail Sales	\$22,912.3	(\$0.4)	\$204.4	\$23,116.2	\$203.9
Business & Occupation Use	9,105.3	(9.8)	63.8	9,159.2	53.9
Public Utility	1,467.4	0.0	27.9	1,495.3	27.9
Liquor Sales/Liter	967.8	(1.4)	(8.7)	957.7	(10.1)
Cigarette	571.7	0.0	1.0	572.7	1.0
Property (State Levy)	704.6	0.0	(7.0)	697.5	(7.0)
Real Estate Excise	7,415.9	(184.1)	91.7	7,323.5	(92.4)
Timber Excise	1,851.9	(2.3)	47.3	1,897.0	45.1
Other	4.4	0.0	0.2	4.6	0.2
Subtotal	1,026.7	0.0	12.5	1,039.3	12.5
	46,027.9	(198.0)	433.0	46,262.9	235.0
Insurance Commissioner					
Insurance Premiums	1,274.1	0.0	36.1	1,310.3	36.1
Liquor Control Board					
Fees, Cannabis Excise Tax	493.3	7.5	(13.9)	486.9	(6.4)
Beer & Wine Surtax	57.1	0.0	0.1	57.1	0.1
Lottery Commission					
Lottery Revenue	54.7	(0.3)	3.9	58.3	3.6
State Treasurer					
Interest Earnings	49.3	0.0	(8.5)	40.8	(8.5)
Office of Financial Management**					
Other Agencies	162.5	9.9	(4.1)	168.4	5.8
Administrative Office of the Courts					
Fines and Forfeitures	134.4	(0.3)	1.0	135.2	0.8
Total General Fund-State *	\$48,253.4	(\$181.2)	\$447.7	\$48,519.9	\$266.5

¹ Forecast for the 2019-21 biennium adopted by the Economic and Revenue Forecast Council February 15, 2018² Forecast for the 2019-21 biennium, adopted June 19, 2018

*Detail may not add to totals because of rounding.

**OFM forecast now includes revenue from the Department of Licensing.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor and Cannabis Board, Office of Financial Management

Table 3.8

Comparison of the General Fund-State forecast by agency

2019-21 biennium; GAAP basis

(millions of dollars)

Forecast by Agency	Feb. 2018 Forecast¹	Non- Economic Changes	Forecast Revision	June 2018 Forecast²	Total Change
Department of Revenue					
Retail Sales	\$22,912.3	(\$0.4)	\$204.4	\$23,116.2	\$203.9
Business & Occupation Use	9,105.3	(9.8)	63.8	9,159.2	53.9
Public Utility	1,467.4	0.0	27.9	1,495.3	27.9
Liquor Sales/Liter	967.8	(1.4)	(8.7)	957.7	(10.1)
Cigarette	571.7	0.0	1.0	572.7	1.0
Property (State Levy)	704.6	0.0	(7.0)	697.5	(7.0)
Real Estate Excise	7,415.9	(184.1)	91.7	7,323.5	(92.4)
Timber Excise	1,851.9	(2.3)	47.3	1,897.0	45.1
Other	4.4	0.0	0.2	4.6	0.2
Subtotal	1,026.7	0.0	12.5	1,039.3	12.5
Insurance Commissioner					
Insurance Premiums	46,027.9	(198.0)	433.0	46,262.9	235.0
Liquor Control Board					
Fees, Cannabis Excise Tax	1,274.1	0.0	36.1	1,310.3	36.1
Beer & Wine Surtax	57.1	0.0	0.1	57.1	0.1
Lottery Commission					
Lottery Revenue	52.2	(0.3)	3.1	54.9	2.8
State Treasurer					
Interest Earnings	50.0	0.0	(7.6)	42.4	(7.6)
Office of Financial Management**					
Other Agencies	162.5	9.9	(4.1)	168.4	5.8
Administrative Office of the Courts					
Fines and Forfeitures	134.4	(0.3)	1.0	135.2	0.8
Total General Fund-State *	\$48,251.6	(\$181.2)	\$447.8	\$48,518.2	\$266.6

¹ Forecast for the 2019-21 biennium adopted by the Economic and Revenue Forecast Council February 15, 2018² Forecast for the 2019-21 biennium, adopted June 19, 2018

*Detail may not add to totals because of rounding.

**OFM forecast now includes revenue from the Department of Licensing.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor and Cannabis Board, Office of Financial Management

Table 3.9

June 2018 General Fund-State forecast detail
2017-19 to 2021-23 biennia; cash basis
(Millions of Dollars)

Forecast by Source	Fiscal 2018	Fiscal 2019	2017-19 Biennium	Fiscal 2020	Fiscal 2021	2019-21 Biennium	Fiscal 2022	Fiscal 2023	2021-23 Biennium
State Taxes									
Retail sales**	\$10,204.8	\$10,881.8	\$21,086.6	\$11,349.2	\$11,767.0	\$23,116.2	\$12,163.9	\$12,568.5	\$24,732.4
Business & occupation	4,146.6	4,262.5	8,409.0	4,472.4	4,686.8	9,159.2	4,905.9	5,137.7	10,043.6
Use**	719.4	705.1	1,424.5	731.6	763.6	1,495.3	796.8	829.4	1,626.2
Public Utility	420.5	449.1	869.6	463.1	494.6	957.7	517.4	534.9	1,052.3
Liquor sales/liter	272.8	275.9	548.7	283.0	289.7	572.7	295.8	301.3	597.2
Beer & wine surtax	28.7	28.3	57.1	28.5	28.6	57.1	28.7	28.8	57.5
Cigarette	372.1	369.3	741.4	360.7	355.6	716.4	347.9	339.7	687.6
Tobacco products	59.5	57.9	117.4	58.6	59.3	117.9	60.0	60.7	120.7
Cannabis Excise Taxes	112.0	125.9	237.8	125.0	134.7	259.7	148.9	163.5	312.4
Property (state school levy)	2,734.5	2,309.4	5,043.9	3,487.0	3,836.5	7,323.5	3,971.0	4,078.1	8,049.2
Leasehold Excise Tax	34.3	34.1	68.5	33.9	34.0	67.9	34.1	34.1	68.2
Public utility district	56.9	57.9	114.9	58.9	59.8	118.7	60.7	61.7	122.4
Brokered Natural Gas	19.5	19.9	39.4	20.4	21.1	41.5	21.6	22.1	43.7
Real estate excise***	1,085.9	976.1	2,062.0	935.9	961.1	1,897.0	976.7	1,001.5	1,978.2
Timber excise	2.7	2.2	4.9	2.3	2.3	4.6	2.4	2.4	4.8
Estate/inheritance	0.5	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Boat excise	15.1	14.5	29.6	14.5	14.5	29.1	14.5	14.8	29.3
Insurance premiums	603.1	615.4	1,218.5	641.7	668.6	1,310.3	696.1	725.0	1,421.0
Penalties and interest on past due taxes	231.5	171.9	403.4	178.0	184.4	362.4	190.3	196.6	386.9
Other	85.6	53.3	139.0	53.4	53.9	107.3	54.5	55.2	109.7
Total Taxes	21,206.0	21,410.6	42,616.6	23,298.2	24,416.2	47,714.4	25,287.2	26,156.1	51,443.3
State Non-Tax Sources									
Licenses, permits, fees	128.4	132.2	260.6	135.0	138.5	273.5	141.5	144.3	285.7
Liquor & Cannabis fees	95.5	106.3	201.8	111.2	116.0	227.2	119.8	123.1	242.9
Earnings on investments	11.4	7.8	19.3	14.7	26.1	40.8	27.0	27.1	54.2
Administrative Office of the Courts	74.6	69.9	144.5	67.5	67.8	135.2	68.5	69.3	137.8
Transfers of unclaimed property	97.6	74.3	171.9	74.5	75.4	149.9	76.2	77.0	153.2
Other revenue & transfers	67.4	50.3	117.7	(9.7)	(11.3)	(21.0)	(15.2)	(20.0)	(35.2)
Total Non-Tax	474.9	440.9	915.8	393.2	412.4	805.5	417.8	420.7	838.5
Total General Fund-State *	\$21,680.9	\$21,851.5	\$43,532.4	\$23,691.4	\$24,828.6	\$48,519.9	\$25,705.0	\$26,576.8	\$52,281.8

* Detail may not add to totals due to rounding

**GFS portion after Initiative 900 transfer

***Includes penalties and interest

Table 3.10

Track Record for the 2017-19 General Fund-State Cash Forecast

February 2014 through June 2018

Cash Basis - Millions of Dollars

<u>Date of Forecast</u>	<u>Department of Revenue*</u>	<u>Other Agencies</u>	<u>Subtotal*</u>	<u>Non-Economic Changes**</u>	<u>Total Change</u>	<u>Total General Fund-State Cash Basis#</u>
February 2014**	\$36,887	\$1,823				\$38,710
Changes to Forecast						
June 2014	265	50	315	(1) #1	313	39,023
September 2014	227	(63)	164	0	164	39,188
November 2014	388	26	415	0	415	39,602
February 2015	126	28	154	0	154	39,757
June 2015	257	64	321	122 #2	443	40,200
September 2015	4	47	52	286 #3	338	40,538
November 2015	35	(5)	30	0	30	40,567
February 2016	(449)	7	(442)	0	(442)	40,125
June 2016	187	(53)	134	(8) #4	126	40,252
September 2016	135	(10)	125	0	125	40,377
November 2016	131	6	137	0	137	40,514
March 2017	281	22	303	0	303	40,817
June 2017	84	3	87	(1) #5	87	40,903
September 2017	269	11	279	2,079 #6	2,359	43,262
November 2017	297	7	304	0	304	43,566
February 2018	631	16	647	0	647	44,213
June 2018	447	46	493	(1,173) #7	(680)	43,532
Total change***:						
From February 2014	3,317	201	3,518	1,304	4,822	
Percent change	9.0	11.0	9.1	3.4	12.5	

* Excludes legislative, judicial, statutorily required or other major non-economic changes.

** Includes legislative, judicial, statutorily required or other major non-economic changes.

*** Detail may not add to total due to rounding.

First official forecast for the 2017-19 biennium.

#1 Sum of legislative and budget-driven revenue changes from the 2014 regular legislative session

#2 Legislative revenue changes from 2015 regular legislative session

#3 Legislative and budget driven revenue changes from 2015 special legislative sessions

#4 Legislative revenue changes from the 2016 regular and first special legislative sessions

#5 Sum of legislative revenue changes from 2017 legislative sessions through June 20, 2017

#6 Sum of legislative and budget driven revenue changes from 2017 special legislative sessions since the June 2017 forecast

#7 Sum of legislative and budget driven revenue changes from the 2018 legislative session

Table 3.11

Track Record for the 2019-21 General Fund-State Cash Forecast

February 2016 through June 2018

Cash Basis - Millions of Dollars

<u>Date of Forecast</u>	<u>Department of Revenue*</u>	<u>Other Agencies</u>	<u>Subtotal*</u>	<u>Non-Economic Changes**</u>	<u>Total Change</u>	<u>Total General Fund-State Cash Basis</u>
February 2016 #	\$36,887	\$1,823				\$43,441
Changes to Forecast						
June 2016	172	(31)	141	(7) #1	134	43,575
September 2016	86	(31)	55	0	55	43,630
November 2016	21	4	26	0	26	43,656
March 2017	241	(55)	186	0	186	43,842
June 2017	47	(13)	34	(1) #2	34	43,875
September 2017	245	(3)	243	3,278 #3	3,521	47,396
November 2017	188	(2)	186	0	186	47,582
February 2018	655	16	671	0	671	48,253
June 2018	426	22	448	(181) #4	267	48,520
Total change***:						
From February 2016	2,083	(94)	1,989	3,090	5,079	
Percent change	5.6	(5.1)	4.6	7.1	11.7	

* Excludes legislative, judicial, statutorily required or other major non-economic changes.

** Includes legislative, judicial, statutorily required or other major non-economic changes.

*** Detail may not add to total due to rounding.

First official forecast for the 2019-21 biennium.

#1 Legislative revenue changes from the 2016 regular and first special legislative sessions

#2 Sum of legislative revenue changes from 2017 legislative sessions through June 20, 2017

#3 Sum of legislative and budget driven revenue changes from 2017 special legislative sessions since the June 2017 forecast

#4 Sum of legislative and budget driven revenue changes from the 2018 legislative session

Table 3.12

2017-19 Enacted Budget Balance Sheet
General Fund-State (GFS), Education Legacy Trust Account (ELTA),
Washington Opportunity Pathways Account (OPA) and Budget Stabilization Account (BSA)
Dollars in Millions

	2017-19		
	GFS	ELTA and OPA	TOTAL
RESOURCES			
Beginning Fund Balance	1,100.6	48.0	1,148.5
February 2018 Revenue Forecast	44,212.9	777.2	44,990.1
June 2018 Revenue Forecast change	493.0	43.4	536.4
Current Revenue Totals	44,705.9	820.6	45,526.4
Transfer to Budget Stabilization Account (1% of GSR)	(429.7)		(429.7)
Transfer to Budget Stabilization Account (EGSR)	(924.3)		(924.3)
Transfer from BSA (EGSR)	924.3		924.3
Enacted Fund Transfers	74.1	254.0	328.1
Assumed Prior Period Adjustments	40.8		40.8
2018 Legislative Session			-
Budget Driven Revenue	(21.0)		(21.0)
McCleary Penalty Account Transfer	(105.2)		(105.2)
Other Fund Transfers	(61.2)		(61.2)
Chapter 295, Laws of 2018 (Property Tax Reduction)	(206.2)		(206.2)
Chapter 295, Laws of 2018 (Property Tax/ELTA)	(935.0)	935.0	-
Other Legislation	(11.3)	-	(11.3)
Total Resources (including beginning fund balance)	44,151.8	2,057.6	46,209.4
EXPENDITURES			
Enacted Budgets			
2017-19 Biennium	42,659.6	1,048.8	43,708.4
2018 Supplemental	689.1	251.7	940.8
Assumed Reversions	(216.0)	-	(216.0)
Total Expenditures	43,132.7	1,300.5	44,433.2
RESERVES			
Projected Ending Balance (GFS + ELTA + OPA)	1,019.1	757.1	1,776.2
Budget Stabilization Account			
Budget Stabilization Account Beginning Balance	1,638.3		1,638.3
Transfers from General Fund (1% of GSR)	429.7		429.7
Assumed Interest Earnings	38.0		38.0
Transfers from GFS (EGSR)	924.3		924.3
Less 17-19 Appropriations from BSA	(41.5)		(41.5)
Less 17-19 Transfers to Pension Stabilization Account	(925.2)		(925.2)
Less Transfers out to GFS (EGSR)	(924.3)		(924.3)
Projected Budget Stabilization Account Ending Balance	1,139.3		1,139.3
Total Reserves (Near General Fund plus Budget Stabilization)	2,158.4	757.1	2,915.5

Acronyms

GSR- General State Revenues

EGSR- Extraordinary General State Revenues

CAFR- Comprehensive Annual Financial Report

Table 3.13

**Alternative forecasts compared to the baseline forecast
2017-19 biennium**

(cash basis, millions of dollars)

Forecast by Source	Optimistic Forecast	Baseline Forecast	Pessimistic Forecast
Department of Revenue			
Retail Sales	\$21,550.9	\$21,086.6	\$20,551.3
Business & Occupation Use	8,584.7	8,409.0	8,201.5
Public Utility	1,460.5	1,424.5	1,388.5
Property (school levy)	884.8	869.6	848.5
Real Estate Excise	5,049.7	5,043.9	5,026.9
Other	2,200.3	2,062.0	2,021.4
Subtotal	2,351.5	2,395.0	2,369.0
	42,082.3	41,290.6	40,407.1
Insurance Commissioner¹	1,233.9	1,218.5	1,203.1
Lottery Commission	58.6	55.8	53.0
State Treasurer - Interest earnings	36.0	19.3	7.1
Liquor and Cannabis Surtaxes & Fees²	512.7	496.8	481.4
Office of Financial Management			
Other agencies	313.1	307.0	300.8
Administrative Office of the Courts			
Fines and Forfeitures	146.4	144.5	142.9
Total General Fund - State*	\$44,383.1	\$43,532.4	\$42,595.4
Difference from June 2018 Baseline	\$850.7		(\$937.0)

1 Insurance premiums, General Fund-State portion.

2 Includes beer and wine surtax, cannabis excise tax, distributor fees, retailer fees, licensing fees.

* Detail may not add to total due to rounding.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor Control Board, Office of Financial Management

Table 3.14

**Alternative forecasts compared to the baseline forecast
2019-21 biennium**

(cash basis, millions of dollars)

Forecast by Source	Optimistic Forecast	Baseline Forecast	Pessimistic Forecast
Department of Revenue			
Retail Sales	\$24,831.9	\$23,116.2	\$21,273.4
Business & Occupation Use	9,774.8	9,159.2	8,506.8
Public Utility	1,581.9	1,495.3	1,389.0
Property (school levy)	990.4	957.7	905.7
Real Estate Excise	7,335.7	7,323.5	7,262.1
Other	2,278.7	1,897.0	1,566.9
Subtotal	2,366.4	2,314.1	2,192.9
	49,159.7	46,262.9	43,096.8
Insurance Commissioner¹	1,343.1	1,310.3	1,277.5
Lottery Commission	61.3	58.3	55.4
State Treasurer - Interest earnings	85.6	40.8	3.0
Liquor and Cannabis Surtaxes & Fees²	572.6	544.0	516.1
Office of Financial Management			
Other agencies	175.1	168.4	161.6
Administrative Office of the Courts			
Fines and Forfeitures	142.6	135.2	128.1
Total General Fund - State*	\$51,540.0	\$48,519.9	\$45,238.7
Difference from June 2018 Baseline	\$3,020.1		(\$3,281.2)

1 Insurance premiums, General Fund-State portion.

2 Includes beer and wine surtax, cannabis excise tax, distributor fees, retailer fees, licensing fees.

* Detail may not add to total due to rounding.

Source: ERFC, Insurance Commissioner, Lottery Commission, Office of the State Treasurer, Liquor Control Board, Office of Financial Management

Table 3.15

Lottery transfers by fund

June 2018 Forecast

(cash basis, millions of dollars)

	Lottery: Total Transfers:*	Mariners General Fund	Mariners Stadium	Exhibition Center & Stadium	Student Achievement Account	School Construction Account	Problem Gambling Account	Economic Development Account	Opportunity Pathways Account	Veteran's VIP Account	Education Legacy Trust Account
2012	135.1	0.0	2.7	10.0	0.0	0.0	0.3	3.3	118.5	0.2	0.0
2013	139.7	0.0	0.0	10.4	0.0	0.0	0.3	3.5	125.5	0.0	0.0
2011-13 Biennium	274.8	0.0	2.7	20.4	0.0	0.0	0.6	6.9	244.0	0.2	0.0
2014	147.9	9.3	0.0	10.8	0.0	0.0	0.3	3.7	113.7	0.0	10.1
2015	143.1	0.6	0.0	11.2	0.0	0.0	0.3	4.7	120.2	0.0	6.1
2013-15 Biennium	291.0	9.9	0.0	22.0	0.0	0.0	0.6	8.4	233.9	0.0	16.1
2016	171.6	17.1	0.0	11.7	0.0	0.0	0.3	3.3	139.1	0.0	0.0
2017	159.7	14.8	0.0	12.2	0.0	0.0	0.3	4.8	126.6	0.0	0.0
2015-17 Biennium	331.2	31.9	0.0	23.8	0.0	0.0	0.7	8.0	265.7	0.0	0.0
2018	178.7	32.4	0.0	12.6	0.0	0.0	0.3	3.8	129.4	0.0	0.0
2019	169.6	23.4	0.0	13.1	0.0	0.0	0.4	4.1	128.6	0.0	0.0
2017-19 Biennium	348.2	55.8	0.0	25.8	0.0	0.0	0.7	7.9	258.0	0.0	0.0
2020	176.7	29.2	0.0	13.7	0.0	0.0	0.4	4.0	129.4	0.0	0.0
2021	179.2	29.1	0.0	14.2	0.0	0.0	0.4	4.0	131.5	0.0	0.0
2019-21 Biennium	355.9	58.3	0.0	27.9	0.0	0.0	0.7	8.0	260.9	0.0	0.0
2022	181.9	30.0	0.0	14.2	0.0	0.0	0.4	4.0	133.3	0.0	0.0
2023	184.5	29.8	0.0	14.2	0.0	0.0	0.4	4.0	136.1	0.0	0.0
2021-23 Biennium	366.4	59.8	0.0	28.4	0.0	0.0	0.8	8.0	269.4	0.0	0.0

Table 3.16

Lottery transfers by fund

June 2018 Forecast

(GAAP basis, millions of dollars)

	Lottery: Total Transfers:*	Mariners General Fund	Mariners Stadium	Exhibition Center & Stadium	Student Achievement Account	School Construction Account	Problem Gambling Account	Economic Development Account	Opportunity Pathways Account	Veteran's VIP Account	Education Legacy Trust Account
2012	138.0	0.0	2.7	10.0	0.0	0.0	0.3	3.0	121.8	0.2	0.0
2013	139.2	9.3	0.0	10.4	0.0	0.0	0.3	3.6	115.5	0.0	0.0
2011-13 Biennium	277.2	9.3	2.7	20.4	0.0	0.0	0.6	6.6	237.4	0.2	0.0
2014	147.7	0.6	0.0	10.8	0.0	0.0	0.3	4.0	121.9	0.0	10.1
2015	141.3	0.0	0.0	11.2	0.0	0.0	0.3	4.7	119.0	0.0	6.1
2013-15 Biennium	288.9	0.6	0.0	22.0	0.0	0.0	0.6	8.7	240.9	0.0	16.1
2016	175.5	31.9	0.0	11.7	0.0	0.0	0.3	2.8	128.7	0.0	0.0
2017	161.9	16.8	0.0	12.2	0.0	0.0	0.3	4.9	126.8	0.0	0.0
2015-17 Biennium	337.4	48.7	0.0	23.8	0.0	0.0	0.7	7.7	255.5	0.0	0.0
2018	173.2	28.9	0.0	12.6	0.0	0.0	0.4	4.0	127.3	0.0	0.0
2019	173.9	27.0	0.0	13.1	0.0	0.0	0.4	4.0	129.4	0.0	0.0
2017-19 Biennium	347.1	55.9	0.0	25.8	0.0	0.0	0.7	8.0	256.7	0.0	0.0
2020	176.9	27.4	0.0	13.7	0.0	0.0	0.4	4.0	131.5	0.0	0.0
2021	179.4	27.6	0.0	14.2	0.0	0.0	0.4	4.0	133.3	0.0	0.0
2019-21 Biennium	356.3	54.9	0.0	27.9	0.0	0.0	0.7	8.0	264.8	0.0	0.0
2022	182.2	27.6	0.0	14.2	0.0	0.0	0.4	4.0	136.0	0.0	0.0
2023	184.7	27.7	0.0	14.2	0.0	0.0	0.4	4.0	138.4	0.0	0.0
2021-23 Biennium	366.8	55.3	0.0	28.4	0.0	0.0	0.8	8.0	274.3	0.0	0.0

* Total Transfers are equal to total sales less total expenses (prizes, cost of sales, administration etc.)

Source: Lottery Commission, ERFC

Table 3.17

General Fund-State, Education Legacy Trust Account and Opportunity Pathways Account (Near General Fund-State)

History and Forecast by Fiscal Year (Cash basis)

June 2018 - Millions of Dollars

	General Fund-State (GF-S) (current definition)		Education Legacy Trust Fund* (ELTA)		Total GF-S plus ELTA		WA Opportunity Pathways Account (OPA)		Total GF-S plus ELTA and OPA	
	Level	% Chg.	Level	% Chg.	Level	% Chg.	Level	% Chg.	Level	% Chg.
History:										
FY 1999	\$10,414	3.6%			\$10,414	3.6%			\$10,414	3.6%
FY 2000	\$11,068	6.3%			\$11,068	6.3%			\$11,068	6.3%
FY 2001	\$11,560	4.4%			\$11,560	4.4%			\$11,560	4.4%
FY 2002	\$11,632	0.6%			\$11,632	0.6%			\$11,632	0.6%
FY 2003	\$11,721	0.8%			\$11,721	0.8%			\$11,721	0.8%
FY 2004	\$12,358	5.4%			\$12,358	5.4%			\$12,358	5.4%
FY 2005	\$13,036	5.5%			\$13,036	5.5%			\$13,036	5.5%
FY 2006	\$14,318	9.8%	\$115		\$14,432	10.7%			\$14,432	10.7%
FY 2007	\$15,467	8.0%	\$266	132.2%	\$15,734	9.0%			\$15,734	9.0%
FY 2008	\$15,659	1.2%	\$213	-20.1%	\$15,872	0.9%			\$15,872	0.9%
FY 2009	\$14,158	-9.6%	\$224	5.4%	\$14,382	-9.4%			\$14,382	-9.4%
FY 2010	\$13,571	-4.1%	\$157	-29.9%	\$13,728	-4.6%			\$13,728	-4.6%
FY 2011	\$14,648	7.9%	\$112	-29.0%	\$14,759	7.5%	\$99		\$14,859	8.2%
FY 2012	\$14,874	1.5%	\$114	2.3%	\$14,988	1.6%	\$118	19.1%	\$15,107	1.7%
FY 2013	\$15,783	6.1%	\$101	-11.5%	\$15,884	6.0%	\$126	5.9%	\$16,009	6.0%
FY 2014	\$16,383	3.8%	\$197	95.3%	\$16,580	4.4%	\$114	-9.4%	\$16,694	4.3%
FY 2015	\$17,283	5.5%	\$207	5.0%	\$17,491	5.5%	\$120	5.7%	\$17,611	5.5%
FY 2016	\$18,579	7.5%	\$215	3.6%	\$18,793	7.4%	\$139	15.7%	\$18,933	7.5%
FY 2017	\$19,739	6.2%	\$252	17.5%	\$19,991	6.4%	\$127	-9.0%	\$20,118	6.3%
Forecast:										
FY 2018	\$21,681	9.8%	\$282	11.9%	\$21,963	9.9%	\$129	2.2%	\$22,093	9.8%
FY 2019	\$21,852	0.8%	\$1,215	330.2%	\$23,067	5.0%	\$129	-0.6%	\$23,195	5.0%
FY 2020	\$23,691	8.4%	\$286	-76.4%	\$23,978	3.9%	\$129	0.6%	\$24,107	3.9%
FY 2021	\$24,829	4.8%	\$296	3.4%	\$25,125	4.8%	\$132	1.6%	\$25,256	4.8%
FY 2022	\$25,705	3.5%	\$305	3.0%	\$26,010	3.5%	\$133	1.4%	\$26,143	3.5%
FY 2023	\$26,577	3.4%	\$314	2.9%	\$26,891	3.4%	\$136	2.1%	\$27,027	3.4%
Biennial Totals										
05-07 Biennium	\$29,785	17.3%	\$381	NA	\$30,166	18.8%	\$0	NA	\$30,166	18.8%
07-09 Biennium	\$29,817	0.1%	\$437	14.8%	\$30,254	0.3%	\$0	NA	\$30,254	0.3%
09-11 Biennium	\$28,218	-5.4%	\$269	-38.5%	\$28,487	-5.8%	\$99	NA	\$28,586	-5.5%
11-13 Biennium	\$30,657	8.6%	\$215	-19.9%	\$30,872	8.4%	\$244	145.2%	\$31,116	8.8%
13-15 Biennium	\$33,666	9.8%	\$405	88.0%	\$34,071	10.4%	\$234	-4.1%	\$34,305	10.2%
15-17 Biennium	\$38,317	13.8%	\$467	15.4%	\$38,785	13.8%	\$266	13.6%	\$39,050	13.8%
17-19 Biennium	\$43,532	13.6%	\$1,498	220.6%	\$45,030	16.1%	\$258	-2.9%	\$45,288	16.0%
19-21 Biennium	\$48,520	11.5%	\$582	-61.1%	\$49,102	9.0%	\$261	1.1%	\$49,363	9.0%
21-23 Biennium	\$52,282	7.8%	\$619	6.3%	\$52,901	7.7%	\$269	3.2%	\$53,170	7.7%

*Education legacy trust fund excluding FY 14 and FY 15 lottery fund transfers. Includes pension stabilization fund interest in FY 08 and FY 09.

Table 3.18
Forecasted distribution of excise tax and license fees from cannabis sales
 June 2018
 Thousands of dollars

Fiscal year	Total of cannabis excise taxes plus license fees	LCB administration and pre-distribution allotments	Total to distribute	Distribution of remaining funds							General Fund-State*
				DSHS substance abuse program	Dept. of Health cannabis education program	UW/WSU research	Basic Health Plan Trust Account	Health Care Authority community health centers	OSPI dropout prevention		
2015	\$67,486	\$22,074	\$45,412	\$5,166	\$0	\$0	\$22,706	\$2,271	\$0	\$15,269	
2016	\$168,051	\$8,551	\$159,500	\$12,814	\$7,500	\$345	\$79,750	\$7,791	\$251	\$51,049	
2017	\$300,635	\$9,201	\$291,434	\$27,786	\$7,500	\$345	\$145,717	\$12,979	\$511	\$96,596	
2018	\$360,608	\$13,772	\$346,836	\$27,786	\$9,761	\$365	\$173,418	\$17,616	\$513	\$117,377	
2019	\$387,900	\$14,558	\$373,342	\$0	\$9,764	\$365	\$186,671	\$46,191	\$515	\$129,836	
2020	\$394,269	\$13,548	\$380,721	\$0	\$9,764	\$365	\$194,000	\$46,891	\$515	\$129,186	
2021	\$404,173	\$13,548	\$390,625	\$0	\$9,764	\$365	\$194,000	\$46,891	\$515	\$139,090	
2022	\$418,346	\$13,548	\$404,798	\$0	\$9,764	\$365	\$194,000	\$46,891	\$515	\$153,263	
2023	\$432,992	\$13,548	\$419,444	\$0	\$9,764	\$365	\$194,000	\$46,891	\$515	\$167,909	
Biennial totals											
2013-15	\$67,486	\$22,074	\$45,412	\$5,166	\$0	\$0	\$22,706	\$2,271	\$0	\$15,269	
2015-17	\$468,686	\$17,752	\$450,934	\$40,600	\$15,000	\$690	\$225,467	\$20,770	\$762	\$147,645	
2017-19	\$748,508	\$28,330	\$720,178	\$27,786	\$19,525	\$730	\$360,089	\$63,807	\$1,028	\$247,213	
2019-21	\$798,442	\$27,096	\$771,346	\$0	\$19,528	\$730	\$388,000	\$93,782	\$1,030	\$268,276	
2021-23	\$851,338	\$27,096	\$824,242	\$0	\$19,528	\$730	\$388,000	\$93,782	\$1,030	\$321,172	

*Before distributions to local governments

Table 3.19
2018 Revenue Legislation and Budget Driven Revenue Changes
(Millions of dollars)

General Fund-State

	FY 18	FY 19	2017-19	FY 20	FY 21	2019-21	FY 22	FY 23	2021-23
Budget Driven Revenue									
Liquor control board-liquor	(0.005)	(0.284)	(0.289)	1.250	1.249	2.499	0.000	0.000	0.000
Liquor control board-marijuana	0.119	(2.789)	(2.670)	2.271	2.271	4.542	0.000	0.000	0.000
Lottery	(0.022)	0.018	(0.004)	(0.159)	(0.158)	(0.317)	0.000	0.000	0.000
Marijuana distribution change	(9.000)	(9.000)	(18.000)	5.000	5.000	10.000	0.000	0.000	0.000
Total budget driven revenue	(8.908)	(12.055)	(20.963)	8.362	8.362	16.724	0.000	0.000	0.000

Legislation

Bill ID	Bill Description	FY 18	FY 19	2017-19	FY 20	FY 21	2019-21	FY 22	FY 23	2021-23
E2SHB 1783	Legal financial obligations	0.000	(0.024)	(0.024)	(0.088)	(0.179)	(0.267)	(0.282)	(0.386)	(0.668)
2SHB 2269	Adaptive automotive equip tx	0.000	(0.115)	(0.115)	(0.125)	(0.123)	(0.248)	(0.123)	(0.123)	(0.246)
E2SHB 2334	Cannaboid Additives	0.000	0.238	0.238	0.238	0.238	0.476	0.238	0.238	0.476
EHB 2444	Low-income housing/REET	0.000	(1.047)	(1.047)	(1.130)	(1.130)	(2.260)	(1.130)	(1.130)	(2.260)
ESHB 2580	Renewable natural gas RST	0.000	(0.092)	(0.092)	(0.100)	(0.100)	(0.200)	(0.100)	(0.100)	(0.200)
ESHB 2580	Renewable natural gas property tax	0.000	(0.009)	(0.009)	(0.017)	(0.026)	(0.043)	(0.035)	(0.036)	(0.071)
SHB 2998	Accountable communities	(5.555)	(4.376)	(9.931)	(5.037)	(4.803)	(9.840)	(2.485)	0.000	(2.485)
ESSB 5143	Nonprofit homeownership Dev.	0.000	(0.005)	(0.005)	(0.009)	(0.011)	(0.020)	(0.011)	(0.011)	(0.022)
SSB 5746	Association of WA Generals	0.000	(0.026)	(0.026)	(0.049)	(0.049)	(0.098)	(0.049)	(0.049)	(0.098)
SB 6007	Electrolytic processing tax	0.000	(0.276)	(0.276)	(0.675)	(0.687)	(1.362)	(0.700)	(0.714)	(1.414)
SB 6058	Write-in voting	0.003	0.000	0.003	0.003	0.000	0.003	0.003	0.000	0.003
ESSB 6614	Property tax reduction	0.000	(206.205)	(206.205)	(184.040)	0.000	(184.040)	0.000	0.000	0.000
ESSB 6614	Property tax transfer to ELTA	0.000	(935.000)	(935.000)	0.000	0.000	0.000	0.000	0.000	0.000
Total Legislation		(5.552)	(1146.937)	(1152.489)	(191.029)	(6.870)	(197.899)	(4.674)	(2.311)	(6.985)
Total of legislation and budget driven revenue		(14.460)	(1158.992)	(1173.452)	(182.667)	1.492	(181.175)	(4.674)	(2.311)	(6.985)

Education Legacy Trust Account

Legislation

Bill ID	Bill Description	FY 18	FY 19	2017-19	FY 20	FY 21	2019-21	FY 22	FY 23	2021-23
ESSB 6614	Property tax transfer to ELTA	0.000	935.000	935.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Legislation		0.000	935.000	935.000	0.000	0.000	0.000	0.000	0.000	0.000



Chapter 4: Factors Impacting Store-Level Retail Cannabis Sales

- **Recreational cannabis has now been legal in Washington State for just over four years. The analysis covers the period from the start of legalization through June 2017**
- **This analysis is a follow-up to research published in our September 2016 forecast publication**
- **After adjusting for number of retail stores, sales in border counties remain higher than in non-border counties**
- **Retail sales are smaller the greater the number of retail stores that exist within a county**
- **Both the length of time a store has been in operation and ownership of multiple stores have a positive impact on sales**

Introduction

Follow-up from prior special report

This analysis is a follow-up to research previously included in the September 2016 forecast publication examining recreational cannabis sales at the county level. Here, the unit of analysis will be individual cannabis retailers with sales in one or more months between July 2014 and June 2017.

Results are preliminary

The legal cannabis market has seen substantial changes over this period, so that it is again worth emphasizing that this market has not settled into typical or equilibrium conditions. For that reason, like the previous analysis, the results here should be considered preliminary in nature. Despite that disclaimer, we believe this analysis to be of interest.

Overview of Washington's Legal Cannabis Market

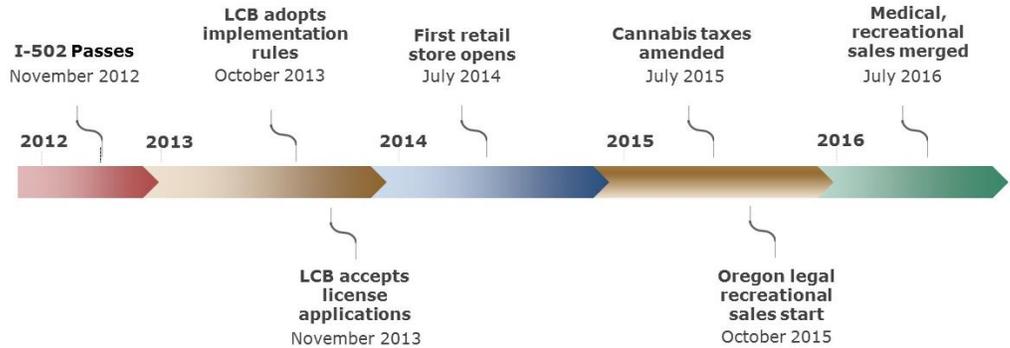
Overview of WA cannabis market

In Figure 4.1, we include a brief timeline of key events as they relate to the Washington cannabis market. Initiative 502, establishing legal recreational marijuana in Washington, was passed by the voters in

November 2012, with recreational sales starting in July 2014. The Washington Legislature amended I-502 in 2015 (to change the structure of taxes on cannabis producers, processors and retailers) and in 2016 (closing medical dispensaries and collective gardens; requiring medical marijuana to be sold through licensed retail businesses; changing the process for obtaining a medical marijuana “green card”).

Figure 4.1: Washington Cannabis Timeline

Cannabis legalization started with passage of I-502

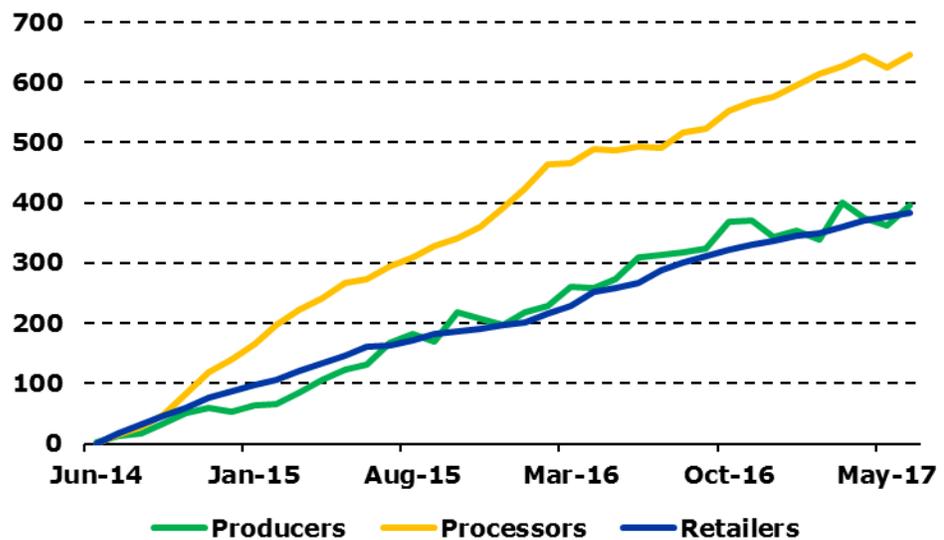


Source: Liquor and Cannabis Board, data through June 2017

As this timeline suggests, the legal cannabis market has seen substantial change during the period covered by this analysis. Other important changes include the increase in the number of producers, processors and retail stores (Figure 4.2), the decline in retail cannabis prices (Figure 4.3) and the change in the mix of cannabis products sold (Figure 4.4).

The number of producers, processors and retailers has grown dramatically

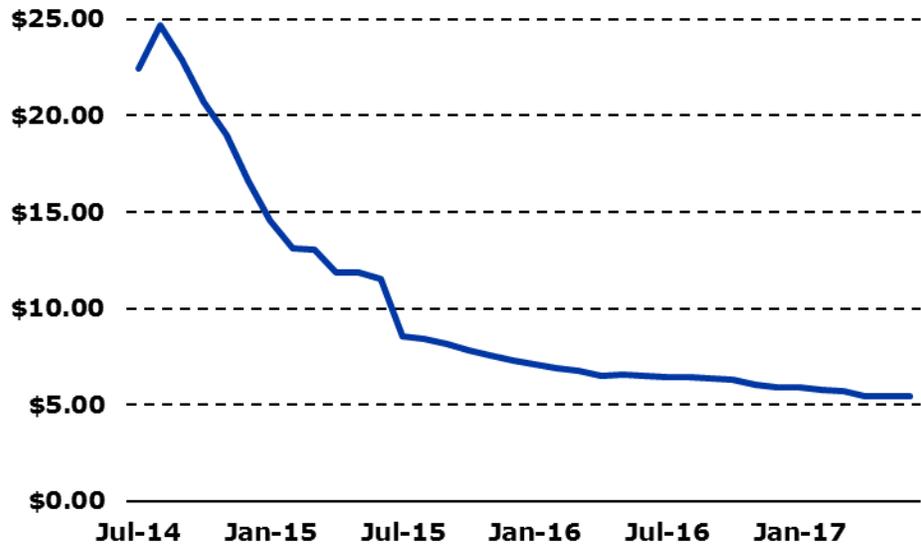
Figure 4.2: Increase in the Cannabis Industry



Source: Liquor and Cannabis Board, data through June 2017

Figure 4.3: Price per gram (pre-tax)

Cannabis prices have declined by nearly 80%



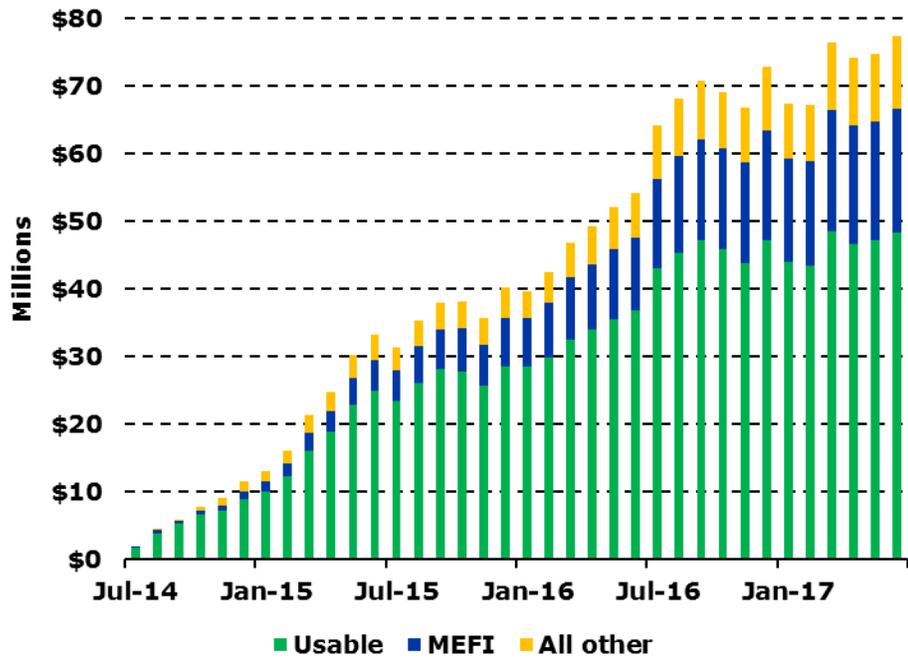
Source: Liquor and Cannabis Board, data through June 2017

Figure 4.4: Monthly Sales

Usable = smokable flowers or leaf

MEFI = extract for inhalation

All other includes infused products such as edibles and lotions



Source: Liquor and Cannabis Board, data through June 2017

Monthly retail sales increased to almost \$77.2 million in June 2017

Total monthly retail sales increased from just over \$1.8 million dollars in July 2014 to almost \$77.2 million in June 2017. At the retail store level, average monthly sales were as low as \$102,598 in July 2014 and as high as \$227,984 in September 2016 but with considerable variation (see Table 4.2). Sales also vary widely by county, as can be seen in Table 4.3.

Table 4.1: Retail Store Sales by Month

Includes all stores with \$1 or more in sales during the month

Date	Average	Highest	Lowest	# Stores
Jul-14	\$ 102,598	\$ 356,786	\$ 6,013	18
Aug-14	\$ 146,946	\$ 718,062	\$ 4,335	31
Sep-14	\$ 126,222	\$ 815,176	\$ 649	46
Oct-14	\$ 129,104	\$ 780,535	\$ 175	60
Nov-14	\$ 119,623	\$ 831,488	\$ 591	76
Dec-14	\$ 134,948	\$ 975,230	\$ 236	86
Jan-15	\$ 133,637	\$ 1,004,356	\$ 685	98
Feb-15	\$ 151,754	\$ 1,056,526	\$ 2,898	106
Mar-15	\$ 178,023	\$ 1,525,035	\$ 297	120
Apr-15	\$ 186,875	\$ 1,513,430	\$ 230	133
May-15	\$ 207,558	\$ 1,752,907	\$ 259	146
Jun-15	\$ 206,688	\$ 1,760,282	\$ 80	161
Jul-15	\$ 192,974	\$ 2,063,670	\$ 38	163
Aug-15	\$ 204,961	\$ 2,006,875	\$ 20	172
Sep-15	\$ 208,370	\$ 2,086,210	\$ 1,871	182
Oct-15	\$ 203,831	\$ 1,390,827	\$ 17	187
Nov-15	\$ 187,644	\$ 1,319,797	\$ 2,661	190
Dec-15	\$ 203,008	\$ 1,406,896	\$ 17	198
Jan-16	\$ 196,995	\$ 1,400,016	\$ 30	201
Feb-16	\$ 196,880	\$ 1,470,722	\$ 15	215
Mar-16	\$ 203,989	\$ 1,605,880	\$ 10	229
Apr-16	\$ 195,366	\$ 1,634,861	\$ 14	251
May-16	\$ 200,080	\$ 1,569,502	\$ 29	259
Jun-16	\$ 201,709	\$ 1,328,486	\$ 5	267
Jul-16	\$ 222,287	\$ 1,404,149	\$ 5	289
Aug-16	\$ 227,228	\$ 1,356,644	\$ 39	300
Sep-16	\$ 227,984	\$ 1,393,531	\$ 27	311
Oct-16	\$ 215,709	\$ 1,347,938	\$ 38	321
Nov-16	\$ 203,619	\$ 1,285,508	\$ 26	330
Dec-16	\$ 217,004	\$ 1,429,248	\$ 27	337
Jan-17	\$ 195,797	\$ 1,321,954	\$ 7	346
Feb-17	\$ 192,906	\$ 1,304,314	\$ 1	350
Mar-17	\$ 211,823	\$ 1,439,669	\$ 1	361
Apr-17	\$ 200,466	\$ 1,333,882	\$ 5	370
May-17	\$ 197,908	\$ 1,357,079	\$ 8	378
Jun-17	\$ 201,473	\$ 1,415,688	\$ 11	383

Source: Liquor and Cannabis Board, data through June 2017

Table 4.2: Retail Store Sales by County, June 2017

Columbia, Franklin, Garfield, Lincoln and Wahkiakum counties did not have retail stores with sales in June 2017

County	Total sales	Per capita sales*	Store average	Highest store	Lowest store	# stores
ADAMS	\$183,065	\$9	\$61,022	\$96,671	\$36,435	3
ASOTIN	\$768,815	\$34	\$256,272	\$446,457	\$122,735	3
BENTON	\$1,584,552	\$8	\$528,184	\$1,114,291	\$216,543	3
CHELAN	\$691,716	\$9	\$98,817	\$174,988	\$31,536	7
CLALLAM	\$994,595	\$13	\$110,511	\$191,584	\$16,442	9
CLARK	\$5,093,032	\$11	\$424,419	\$1,415,688	\$77,807	12
COWLITZ	\$1,340,638	\$13	\$167,580	\$386,438	\$14,530	8
DOUGLAS	\$249,087	\$6	\$124,544	\$229,772	\$19,315	2
FERRY	\$66,440	\$9	\$66,440	\$66,440	\$66,440	1
GRANT	\$815,685	\$9	\$90,632	\$283,909	\$24,720	9
GRAYS HARBOR	\$1,009,075	\$14	\$112,119	\$233,291	\$23,440	9
ISLAND	\$820,218	\$10	\$136,703	\$206,548	\$18,534	6
JEFFERSON	\$469,854	\$15	\$67,122	\$108,332	\$20,658	7
KING	\$21,872,730	\$10	\$270,034	\$942,247	\$20	81
KITSAP	\$2,720,264	\$10	\$151,126	\$335,292	\$25,179	18
KITTITAS	\$586,471	\$13	\$97,745	\$159,724	\$26,100	6
KLICKITAT	\$255,218	\$12	\$85,073	\$105,284	\$72,996	3
LEWIS	\$444,213	\$6	\$222,106	\$275,996	\$168,217	2
MASON	\$555,820	\$9	\$92,637	\$207,165	\$31,039	6
OKANOGAN	\$285,415	\$7	\$57,083	\$175,453	\$16,333	5
PACIFIC	\$303,378	\$14	\$101,126	\$141,238	\$80,292	3
PEND OREILLE	\$31,904	\$2	\$31,904	\$31,904	\$31,904	1
PIERCE	\$8,673,899	\$10	\$321,256	\$1,117,913	\$11	27
SAN JUAN	\$153,131	\$9	\$76,565	\$85,779	\$67,352	2
SKAGIT	\$1,625,315	\$13	\$108,354	\$245,879	\$9,653	15
SKAMANIA	\$89,493	\$8	\$89,493	\$89,493	\$89,493	1
SNOHOMISH	\$7,966,455	\$10	\$215,310	\$713,376	\$3,041	37
SPOKANE	\$8,319,966	\$17	\$268,386	\$586,342	\$57,043	31
STEVENS	\$264,849	\$6	\$66,212	\$124,271	\$10,938	4
THURSTON	\$3,708,976	\$13	\$168,590	\$748,234	\$464	22
WALLA WALLA	\$574,881	\$9	\$287,441	\$411,171	\$163,710	2
WHATCOM	\$2,509,877	\$12	\$104,578	\$336,502	\$4,677	24
WHITMAN	\$620,607	\$13	\$124,121	\$309,903	\$28	5
YAKIMA	\$1,514,635	\$6	\$168,293	\$317,296	\$37,677	9

Source: LCB, ERFC; * per capita sales based on OFM April 2017 county population estimates

Data Analysis

Analysis seeks to identify some factors that contribute to store-level cannabis

The following analysis seeks to identify some of the factors that contribute, positively or negatively, to cannabis sales at the retail store level. As Table 4.3 suggests, county location is likely to be important given the variability in both total and per capita sales. There may be differences across counties in age distribution and other factors that affect cannabis demand. Stores in counties on the Idaho or Oregon borders may experience greater sales due to out of state customers. The number of nearby competitors is likely to have a negative impact on total sales by reducing market share and putting downward pressure on

prices. Some retail licensees own part or all of multiple stores; it is possible that multiple ownership may enable bargaining for better prices with producers and processors as well as reducing per-store marketing costs. The number of months a store has been in operation may also provide benefits in terms of greater customer awareness or optimization of operations. Sales in the month a store opens or closes could be unusual as they ramp up (or down) operations or are open for less than a full month.

The panel data model contains observations over time for each retail store

We will estimate a panel data model with the following general specification:

$$\text{Sales}_{it} = a + bX_{it} + e_{it} ;$$

Where Sales_{it} is the dollar value of sales of all cannabis products (including taxes) at retail store i in month t , a is a constant term, and X_{it} represents explanatory variables for store i in month t such as the county in which it is located, number of nearby retail stores, etc., b represents the coefficient estimates for those explanatory variables and e_{it} is the error term associated with store i and month t . Data are only included for those months in which a store had at least \$1 in sales. Data

Table 4.3: Dependent Variable: Retail Cannabis Sales by Store and Month

Explanatory variables include number of competitors, length of time open and ownership of multiple stores

Model	(1)	(2)	(3)
Constant	-25,257***	110,893	122,855
	6,438	113,114	112,732
Competitors	2,518***	-1,296***	-1,695***
	93.0	250.0	254.9
Mos_open	14,731***	16,711***	16,726***
	999.1	888.0	884.9
Mos_open^2	-196***	-238***	-235***
	33.0	26.8	26.7
Multi_stores	19,797***	24,672***	24,714***
	2,024	1,699	1,693
Opendate	-59,911***	-61,231***	-60,741***
	6,162	9,460	9,428
Closedate	-153,361***	-169,875***	-170,934***
	17,319	27,948	27,851
OR_border	110,503***		
	27,397		
OR_border*OR_legal	-13,813		-105,101***
	29,797		14,300
ID_border	80,164***		
	5,289		
Time dummies	Yes	Yes	Yes
County dummies	No	Yes	Yes
N	7,663	7,663	7,663
adjusted R²	0.239	0.381	0.385

Source: LCB, ERFC; *** statistically significant at .01 level

organized in this fashion (i.e., multiple observations for an entity, in this case a retail store, over time) are referred to as panel data. Table 4.3 presents regression results that attempt to measure the impact of these factors on retail store sales.

Model (1) includes the explanatory variables Competitors¹, (the number of other retail stores with sales in month t in the same county as store i), Mos_open (number of months store i has had sales), Multi_stores (the number of other retail stores with sales in month t owned wholly or partially by one or more of the owners of store i), OR_border and ID_border are dummy variables equal to 1 if store i is in a county bordering Oregon or Idaho ² and OR_legal (dummy variable equal to 1 for the months starting with October 2015 when recreational sales were legal in Oregon). The variables Opendate and Closedate are equal to one in the month a store opened or closed and zero otherwise. These variables are intended to control for the fact that opening and closing months may be atypical in terms of days open, inventory, or other factors associated with opening or closing a business.

Results from model (1) suggest that the longer a store has been open, the stronger are its sales

The results from model (1) suggest that the longer a store has been open, the stronger are its sales. However, the negative sign on the squared term for Mos_open (Mos_open²) indicates that the benefit from longevity does decay over time. The Multi_store coefficient indicates a positive impact of owning multiple stores on sales, while the OR_border and ID_border coefficients indicate a positive impact on sales for stores in border counties. Interacting the OR_border dummy with the OR_legal dummy (in other words, a variable that takes on a value of 1 for Oregon border counties only in months where recreational sales were legal in Oregon) has a negative impact on sales but is statistically insignificant and smaller than the OR_border coefficient. This suggests a positive impact, compared to other retail stores, for those stores in Oregon border counties even after legalization occurred in Oregon. As expected, the Opendate and Closedate variables indicate lower sales in the months a store opens and closes.

One result that seems counterintuitive is the positive coefficient for the Competitors variable, implying that having more competing retail stores in your county is positive for sales. Because model (1) does not control for county size, it is likely that the Competitor variable is acting as a proxy for county size because the larger counties (with more sales) also have more stores.

Time period-specific effects may be due to a variety of factors

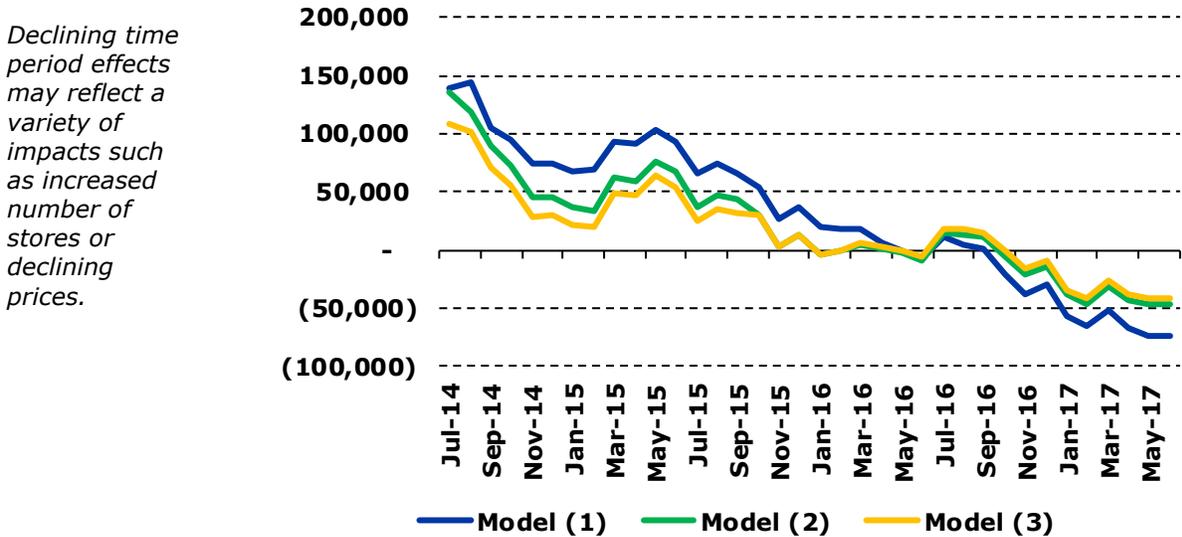
Model (1) also includes time period-specific effects to capture any factors specifically related to a particular month and year and range from a high of nearly +\$131,735 for August 2014 to a low of just under -\$73,792 for May 2017. These effects are difficult to interpret, as they

¹ Ideally, a retail store's competitors would be defined based on distance in terms of miles or driving time. We hope to incorporate that improvement in a future analysis.

² Although Asotin County borders both Oregon and Idaho, the three retail stores in Asotin County are all in Clarkston, which is near the Idaho border. Therefore, Asotin County is considered an Idaho border county for the purpose of this analysis.

may represent the impact of introducing new products or strains, greater accessibility as more retail stores opened or seasonality in the demand for cannabis. However, the general trend has been declining (see Figure 4.5). Especially after October 2015, the smaller time period effects may reflect the impact of legalization in Oregon. It could also reflect declining prices – if the growth in the quantity of cannabis sold is smaller than the decline in prices, this could explain a declining trend in time period effects.

Figure 4.5: Time Period Effects



Source: Liquor and Cannabis Board, data through June 2017

Model (2) adds variables for the county where the retail store is located

Model (2) adds dummy variables for the county in which a retail store is located. The county variables range from a high of +\$281,144 for Clark County to a low of -\$136,963 for Klickitat County; nine of the county dummy variables are statistically insignificant. These county variables capture unobserved attributes that affect cannabis sales, including potential border impacts for counties on the Idaho and Oregon borders. The Competitors variable now has the expected negative sign (i.e., the more retail stores in a county, the lower are expected sales), but the coefficients for other variables are similar in magnitude.

Model (3) adds variable for OR border counties

Model (3) adds a dummy variable for Oregon border counties that is equal to 1 for months in which recreational cannabis sales were legal in Oregon and zero otherwise. This variable has a coefficient that is statistically significant and negative, indicating that retail stores in Oregon border counties had lower sales after Oregon legalized cannabis sales.

Conclusions

The greater the number of stores in a county, the smaller are individual store sales

The results of this brief analysis suggest a few conclusions consistent with expectations while leaving some questions unanswered. Unsurprisingly, retail sales are smaller the greater the number of retail stores that exist within a county. This is a fairly unsophisticated way to measure competition given the size of many counties and the fact that some nearby stores could be in another county. Using the number of other retailers within a specific radius such as 20 miles would likely provide results that are more precise but would presumably confirm the general conclusion that greater nearby competition has a negative impact on sales.

Border counties have higher sales

Consistent with our previous analysis of county-level sales, retailers in counties on the Oregon and Idaho borders appear to have higher sales than would otherwise be the case. Legalization in Oregon appears to have reduced but not eliminated this impact for Oregon border counties.

Length of time a store is open has a positive impact on sales

The length of time a retailer has been open has a positive impact on sales. This could be due to location (if earlier stores were able to obtain the most desirable locations), greater customer awareness, or superior access to products. However, the results indicate that the benefits of longevity decay over time (the significant, negative sign on the Mos_open^2 variable), suggesting that newer retailers may be able to gain market share over time through marketing or gaining access to popular products.

Multiple stores linked to stronger sales

The ownership of multiple stores is clearly related to stronger sales, although there could be a number of possible explanations. Owning multiple stores could give greater power in gaining price concessions from producers and processors and therefore allow lower retail prices. Marketing costs per store may decline as the number of stores increases (e.g., a billboard or print advertisement would cost the same if it displayed information for one store or two), again allowing for lower retail prices. However, ownership of multiple stores could also be evidence of above-average business skills resulting in stronger sales.

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Detail Components of the Washington State Economic and Revenue Forecast

Calendar Years

Note: The economic data discussed in these tables were current at the time the forecast was prepared. Many concepts have changed since then due to new releases and data revisions.

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Table A1.1
U.S. Economic Forecast Summary
Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Real National Income Accounts (Billions of Chained 2009 Dollars)								
Real Gross Domestic Product	16,716.2	17,096.2	17,588.1	18,040.3	18,381.9	18,739.6	19,127.0	19,520.1
% Ch	1.5	2.3	2.9	2.6	1.9	1.9	2.1	2.1
Real Consumption	11,572.1	11,890.7	12,194.7	12,488.1	12,732.1	12,992.2	13,269.6	13,557.1
% Ch	2.7	2.8	2.6	2.4	2.0	2.0	2.1	2.2
Real Nonresidential Fixed Investment	2,210.4	2,314.2	2,445.7	2,583.9	2,727.4	2,878.8	3,010.7	3,120.3
% Ch	-0.6	4.7	5.7	5.7	5.6	5.6	4.6	3.6
Real Residential Fixed Investment	587.4	597.9	605.1	620.4	646.1	670.7	690.9	702.9
% Ch	5.5	1.8	1.2	2.5	4.1	3.8	3.0	1.7
Real Personal Income	14,377.4	14,582.9	14,870.1	15,292.5	15,677.5	16,062.3	16,461.3	16,875.8
% Ch	1.2	1.4	2.0	2.8	2.5	2.5	2.5	2.5
Real Per Capita Income (\$/Person)	44,420	44,744	45,285	46,242	47,072	47,891	48,743	49,633
% Ch	0.5	0.7	1.2	2.1	1.8	1.7	1.8	1.8
Price and Wage Indexes								
PCE Price Index (2009=100)	110.8	112.7	115.0	117.3	119.7	122.1	124.6	127.2
% Ch	1.2	1.7	2.1	1.9	2.1	2.0	2.1	2.1
U.S. Consumer Price Index (1982-84=1.0)	2.400	2.451	2.513	2.562	2.617	2.671	2.729	2.787
% Ch	1.3	2.1	2.5	1.9	2.1	2.1	2.1	2.2
Employment Cost Index (Dec. 2005=1.0)	1.262	1.295	1.339	1.383	1.429	1.482	1.539	1.598
% Ch	2.4	2.6	3.4	3.3	3.3	3.7	3.8	3.9
Current Dollar National Income (Billions of Dollars)								
Gross Domestic Product	18,624.5	19,390.6	20,355.3	21,397.8	22,369.6	23,360.8	24,394.1	25,440.0
% Ch	2.8	4.1	5.0	5.1	4.5	4.4	4.4	4.3
Personal Income	15,928.7	16,429.1	17,104.5	17,932.3	18,765.3	19,617.6	20,518.4	21,468.1
% Ch	2.4	3.1	4.1	4.8	4.6	4.5	4.6	4.6
Employment (Millions)								
U.S. Civilian Labor Force	159.2	160.3	162.0	163.7	165.2	166.4	167.3	168.3
Total U.S. Employment	151.4	153.3	155.8	157.8	159.1	160.0	160.7	161.3
Unemployment Rate (%)	4.87	4.35	3.84	3.57	3.69	3.83	3.99	4.12
Nonfarm Payroll Employment	144.35	146.62	148.91	150.91	152.32	153.28	154.07	154.78
% Ch	1.8	1.6	1.6	1.3	0.9	0.6	0.5	0.5
Manufacturing	12.35	12.44	12.71	12.87	12.93	12.96	12.90	12.84
% Ch	0.1	0.7	2.1	1.3	0.4	0.2	-0.4	-0.5
Durable Manufacturing	7.71	7.74	7.93	8.05	8.12	8.16	8.14	8.11
% Ch	-0.7	0.3	2.5	1.5	0.8	0.5	-0.2	-0.4
Nondurable Manufacturing	4.64	4.71	4.77	4.81	4.81	4.80	4.76	4.73
% Ch	1.5	1.4	1.4	0.9	-0.2	-0.2	-0.7	-0.7
Construction	6.73	6.95	7.22	7.48	7.87	8.27	8.57	8.79
% Ch	4.1	3.4	3.8	3.7	5.1	5.1	3.7	2.5
Service-Providing	124.60	126.55	128.25	129.78	130.74	131.26	131.79	132.34
% Ch	2.0	1.6	1.3	1.2	0.7	0.4	0.4	0.4
Miscellaneous Indicators								
Oil-WTI (\$ per barrel)	43.2	51.0	65.3	63.0	59.8	57.4	55.6	54.5
Personal Saving/Disposable Income (%)	4.9	3.4	2.8	3.3	3.7	3.9	3.9	4.0
Auto Sales (Millions)	6.9	6.1	5.4	5.3	5.3	5.3	5.3	5.5
% Ch	-8.6	-11.3	-10.9	-3.0	-0.3	0.9	0.4	3.4
Housing Starts (Millions)	1.177	1.208	1.322	1.376	1.442	1.463	1.488	1.483
% Ch	6.4	2.6	9.4	4.1	4.8	1.4	1.7	-0.3
Federal Budget Surplus (Billions)	-697.3	-664.4	-964.3	-1,102.7	-1,190.7	-1,226.6	-1,248.3	-1,261.1
Net Exports (Billions)	-521.2	-571.6	-642.5	-620.2	-597.3	-603.3	-622.4	-634.0
3-Month Treasury Bill Rate (%)	0.32	0.93	1.94	2.70	3.15	3.18	3.18	3.04
10-Year Treasury Note Yield (%)	1.84	2.33	2.93	3.43	3.68	3.73	3.65	3.55
Bond Index of 20 G.O. Munis. (%)	3.27	3.67	3.89	4.32	4.54	4.56	4.47	4.36
30-Year Fixed Mortgage Rate (%)	3.65	3.99	4.51	5.03	5.30	5.35	5.31	5.23

Table A1.2
U.S. Economic Forecast Summary
Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Real National Income Accounts (Billions of Chained 2009 Dollars)								
Real Gross Domestic Product	17,379.7	17,530.4	17,660.3	17,782.0	17,886.4	17,995.5	18,096.0	18,183.4
% Ch , Annual Rate	2.2	3.5	3.0	2.8	2.4	2.5	2.3	1.9
Real Consumption	12,065.9	12,157.3	12,239.0	12,316.6	12,390.1	12,459.3	12,524.3	12,578.9
% Ch , Annual Rate	1.0	3.1	2.7	2.6	2.4	2.3	2.1	1.8
Real Nonresidential Fixed Investment	2,418.2	2,420.7	2,456.3	2,487.7	2,520.7	2,564.0	2,605.5	2,645.6
% Ch , Annual Rate	9.2	0.4	6.0	5.2	5.4	7.1	6.6	6.3
Real Residential Fixed Investment	601.9	603.4	606.7	608.5	611.6	616.7	622.9	630.5
% Ch , Annual Rate	-2.0	1.0	2.2	1.2	2.0	3.4	4.0	5.0
Real Personal Income	14,748.8	14,820.5	14,897.5	15,013.5	15,151.0	15,245.8	15,340.5	15,432.8
% Ch , Annual Rate	1.7	2.0	2.1	3.1	3.7	2.5	2.5	2.4
Real Per Capita Income (\$/Person)	45,030	45,177	45,330	45,601	45,937	46,142	46,346	46,542
% Ch , Annual Rate	0.9	1.3	1.4	2.4	3.0	1.8	1.8	1.7
Price and Wage Indexes								
PCE Price Index (2009=100)	114.2	114.7	115.3	115.9	116.4	116.9	117.5	118.2
% Ch , Annual Rate	2.6	2.0	2.0	2.0	1.8	2.0	2.1	2.2
U.S. Consumer Price Index (1982-84=1.0)	2.494	2.506	2.520	2.532	2.542	2.554	2.568	2.583
% Ch , Annual Rate	3.5	1.9	2.3	1.9	1.5	1.9	2.2	2.5
Employment Cost Index (Dec. 2005=1.0)	1.320	1.333	1.345	1.357	1.368	1.378	1.388	1.399
% Ch , Annual Rate	4.0	4.0	3.8	3.5	3.1	3.0	3.1	3.2
Current Dollar National Income (Billions of Dollars)								
Gross Domestic Product	19,956.8	20,229.3	20,484.3	20,750.8	21,014.7	21,276.1	21,529.6	21,770.9
% Ch , Annual Rate	4.2	5.6	5.1	5.3	5.2	5.1	4.9	4.6
Personal Income	16,839.8	17,004.2	17,178.0	17,395.8	17,632.0	17,828.6	18,030.7	18,238.0
% Ch , Annual Rate	4.3	4.0	4.2	5.2	5.5	4.5	4.6	4.7
Employment (Millions)								
U.S. Civilian Labor Force	161.6	161.6	162.2	162.6	163.0	163.5	163.9	164.3
Total U.S. Employment	154.9	155.4	156.0	156.7	157.2	157.7	158.0	158.4
Unemployment Rate (%)	4.10	3.86	3.77	3.64	3.57	3.56	3.56	3.59
Nonfarm Payroll Employment	148.07	148.59	149.20	149.79	150.27	150.73	151.14	151.50
% Ch , Annual Rate	1.7	1.4	1.7	1.6	1.3	1.2	1.1	0.9
Manufacturing	12.61	12.68	12.74	12.80	12.85	12.85	12.87	12.90
% Ch , Annual Rate	2.7	2.3	1.9	2.2	1.3	0.2	0.6	0.8
Durable Manufacturing	7.86	7.92	7.95	8.00	8.03	8.04	8.06	8.08
% Ch , Annual Rate	3.6	2.9	1.8	2.4	1.6	0.3	0.9	1.3
Nondurable Manufacturing	4.74	4.76	4.78	4.80	4.81	4.81	4.82	4.82
% Ch , Annual Rate	1.2	1.2	2.0	1.8	0.8	0.0	0.2	0.1
Construction	7.14	7.20	7.24	7.29	7.36	7.44	7.52	7.61
% Ch , Annual Rate	6.6	3.1	2.4	2.7	4.0	4.3	4.5	5.1
Service-Providing	127.61	127.98	128.47	128.93	129.29	129.67	129.97	130.20
% Ch , Annual Rate	1.3	1.2	1.6	1.4	1.1	1.2	0.9	0.7
Miscellaneous Indicators								
Oil-WTI (\$ per barrel)	62.9	67.4	65.8	65.1	64.4	63.5	62.5	61.7
Personal Saving/Disposable Income (%)	3.1	2.9	2.6	2.8	3.1	3.2	3.3	3.5
Auto Sales (Millions)	5.5	5.2	5.7	5.4	5.3	5.3	5.3	5.3
% Ch , Annual Rate	-33.3	-18.6	41.6	-19.6	-5.8	-2.3	-0.5	0.2
Housing Starts (Millions)	1.320	1.302	1.318	1.348	1.366	1.370	1.380	1.389
% Ch , Annual Rate	20.7	-5.4	4.9	9.7	5.4	1.1	3.0	2.6
Federal Budget Surplus (Billions)	-910.0	-966.9	-975.3	-1,005.1	-1,071.0	-1,093.8	-1,113.0	-1,132.8
Net Exports (Billions)	-640.7	-621.4	-655.3	-652.8	-639.5	-625.3	-612.4	-603.4
3-Month Treasury Bill Rate (%)	1.56	1.86	2.09	2.25	2.42	2.60	2.81	2.99
10-Year Treasury Note Yield (%)	2.76	2.89	2.96	3.11	3.25	3.38	3.50	3.58
Bond Index of 20 G.O. Munis. (%)	3.73	3.86	3.88	4.07	4.19	4.28	4.38	4.44
30-Year Fixed Mortgage Rate (%)	4.27	4.49	4.57	4.71	4.85	4.98	5.10	5.20

Table A1.2 (continued)
U.S. Economic Forecast Summary
 Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Real National Income Accounts (Billions of Chained 2009 Dollars)								
Real Gross Domestic Product	18,256.0	18,343.3	18,419.9	18,508.6	18,601.9	18,692.0	18,784.0	18,880.7
% Ch , Annual Rate	1.6	1.9	1.7	1.9	2.0	2.0	2.0	2.1
Real Consumption	12,637.1	12,699.7	12,762.9	12,828.8	12,892.5	12,957.9	13,024.5	13,094.1
% Ch , Annual Rate	1.9	2.0	2.0	2.1	2.0	2.0	2.1	2.2
Real Nonresidential Fixed Investment	2,674.8	2,707.2	2,744.2	2,783.4	2,824.1	2,861.9	2,897.5	2,931.8
% Ch , Annual Rate	4.5	4.9	5.6	5.8	6.0	5.5	5.1	4.8
Real Residential Fixed Investment	635.8	641.6	648.8	658.4	664.6	668.0	672.1	678.2
% Ch , Annual Rate	3.4	3.7	4.6	6.1	3.8	2.0	2.5	3.7
Real Personal Income	15,541.8	15,640.9	15,719.1	15,808.1	15,919.9	16,014.4	16,109.2	16,205.5
% Ch , Annual Rate	2.9	2.6	2.0	2.3	2.9	2.4	2.4	2.4
Real Per Capita Income (\$/Person)	46,788	47,003	47,156	47,340	47,591	47,790	47,990	48,193
% Ch , Annual Rate	2.1	1.9	1.3	1.6	2.1	1.7	1.7	1.7
Price and Wage Indexes								
PCE Price Index (2009=100)	118.8	119.4	120.0	120.6	121.2	121.8	122.4	123.1
% Ch , Annual Rate	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.0
U.S. Consumer Price Index (1982-84=1.0)	2.596	2.610	2.624	2.637	2.650	2.664	2.678	2.692
% Ch , Annual Rate	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.1
Employment Cost Index (Dec. 2005=1.0)	1.411	1.423	1.435	1.448	1.461	1.475	1.488	1.502
% Ch , Annual Rate	3.3	3.5	3.6	3.6	3.7	3.7	3.7	3.8
Current Dollar National Income (Billions of Dollars)								
Gross Domestic Product	22,009.5	22,256.8	22,484.3	22,727.9	22,988.2	23,234.9	23,483.6	23,736.6
% Ch , Annual Rate	4.5	4.6	4.2	4.4	4.7	4.4	4.4	4.4
Personal Income	18,459.4	18,673.7	18,862.5	19,065.5	19,295.0	19,508.8	19,724.4	19,942.1
% Ch , Annual Rate	4.9	4.7	4.1	4.4	4.9	4.5	4.5	4.5
Employment (Millions)								
U.S. Civilian Labor Force	164.7	165.1	165.4	165.6	165.9	166.2	166.5	166.8
Total U.S. Employment	158.7	159.0	159.3	159.5	159.7	159.9	160.1	160.3
Unemployment Rate (%)	3.65	3.68	3.71	3.73	3.76	3.81	3.85	3.90
Nonfarm Payroll Employment	151.80	152.36	152.46	152.66	152.94	153.19	153.41	153.60
% Ch , Annual Rate	0.8	1.5	0.3	0.5	0.7	0.7	0.6	0.5
Manufacturing	12.92	12.92	12.93	12.94	12.95	12.96	12.96	12.95
% Ch , Annual Rate	0.6	0.1	0.3	0.3	0.4	0.5	0.0	-0.5
Durable Manufacturing	8.11	8.11	8.12	8.13	8.15	8.17	8.17	8.16
% Ch , Annual Rate	1.1	0.4	0.4	0.5	0.7	0.9	0.2	-0.3
Nondurable Manufacturing	4.81	4.80	4.80	4.80	4.80	4.80	4.79	4.78
% Ch , Annual Rate	-0.4	-0.6	0.0	0.0	-0.1	-0.2	-0.4	-0.8
Construction	7.71	7.81	7.92	8.03	8.13	8.22	8.31	8.40
% Ch , Annual Rate	5.1	5.4	5.4	5.7	5.3	4.7	4.3	4.1
Service-Providing	130.39	130.84	130.83	130.90	131.07	131.21	131.33	131.45
% Ch , Annual Rate	0.6	1.4	0.0	0.2	0.5	0.4	0.4	0.4
Miscellaneous Indicators								
Oil-WTI (\$ per barrel)	60.9	60.1	59.4	58.8	58.2	57.6	57.1	56.7
Personal Saving/Disposable Income (%)	3.7	3.8	3.7	3.8	3.9	3.9	3.9	3.8
Auto Sales (Millions)	5.3	5.3	5.2	5.3	5.3	5.3	5.3	5.3
% Ch , Annual Rate	0.5	-0.9	-1.0	1.4	2.2	0.8	1.4	0.0
Housing Starts (Millions)	1.414	1.426	1.466	1.465	1.454	1.457	1.466	1.475
% Ch , Annual Rate	7.3	3.3	11.7	-0.3	-2.8	0.8	2.5	2.3
Federal Budget Surplus (Billions)	-1,171.1	-1,191.4	-1,197.2	-1,203.2	-1,221.6	-1,225.5	-1,227.9	-1,231.3
Net Exports (Billions)	-598.6	-593.5	-597.0	-600.3	-600.0	-601.4	-603.6	-608.2
3-Month Treasury Bill Rate (%)	3.01	3.20	3.19	3.19	3.19	3.18	3.18	3.18
10-Year Treasury Note Yield (%)	3.63	3.67	3.71	3.73	3.73	3.73	3.73	3.71
Bond Index of 20 G.O. Munis. (%)	4.49	4.53	4.56	4.57	4.58	4.57	4.56	4.54
30-Year Fixed Mortgage Rate (%)	5.24	5.29	5.32	5.34	5.35	5.35	5.35	5.34

Table A1.2 (continued)
U.S. Economic Forecast Summary
Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Real National Income Accounts (Billions of Chained 2009 Dollars)								
Real Gross Domestic Product	18,977.1	19,077.6	19,178.4	19,274.8	19,373.2	19,470.9	19,568.0	19,668.5
% Ch , Annual Rate	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.1
Real Consumption	13,163.5	13,234.1	13,304.8	13,376.2	13,446.4	13,518.9	13,593.6	13,669.6
% Ch , Annual Rate	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.3
Real Nonresidential Fixed Investment	2,963.7	2,995.7	3,027.2	3,056.4	3,084.1	3,109.4	3,132.8	3,155.1
% Ch , Annual Rate	4.4	4.4	4.3	3.9	3.7	3.3	3.0	2.9
Real Residential Fixed Investment	683.6	689.1	693.8	696.8	700.2	703.0	703.7	704.9
% Ch , Annual Rate	3.2	3.3	2.7	1.8	1.9	1.6	0.4	0.7
Real Personal Income	16,319.8	16,413.7	16,508.7	16,602.8	16,723.9	16,825.2	16,925.9	17,028.4
% Ch , Annual Rate	2.9	2.3	2.3	2.3	2.9	2.4	2.4	2.4
Real Per Capita Income (\$/Person)	48,449	48,644	48,842	49,037	49,311	49,526	49,738	49,955
% Ch , Annual Rate	2.1	1.6	1.6	1.6	2.3	1.8	1.7	1.8
Price and Wage Indexes								
PCE Price Index (2009=100)	123.7	124.3	125.0	125.6	126.2	126.9	127.5	128.2
% Ch , Annual Rate	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.0
U.S. Consumer Price Index (1982-84=1.0)	2.706	2.721	2.736	2.751	2.765	2.780	2.795	2.810
% Ch , Annual Rate	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.1
Employment Cost Index (Dec. 2005=1.0)	1.516	1.531	1.546	1.561	1.576	1.591	1.606	1.621
% Ch , Annual Rate	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8
Current Dollar National Income (Billions of Dollars)								
Gross Domestic Product	24,003.8	24,264.8	24,526.4	24,781.5	25,052.5	25,310.7	25,567.8	25,828.9
% Ch , Annual Rate	4.6	4.4	4.4	4.2	4.4	4.2	4.1	4.1
Personal Income	20,184.9	20,406.0	20,629.7	20,853.1	21,111.5	21,348.8	21,586.1	21,825.9
% Ch , Annual Rate	5.0	4.5	4.5	4.4	5.0	4.6	4.5	4.5
Employment (Millions)								
U.S. Civilian Labor Force	167.0	167.2	167.5	167.7	167.9	168.2	168.4	168.6
Total U.S. Employment	160.4	160.6	160.8	160.9	161.1	161.2	161.4	161.6
Unemployment Rate (%)	3.94	3.97	4.00	4.03	4.07	4.11	4.14	4.17
Nonfarm Payroll Employment	153.78	153.97	154.17	154.36	154.54	154.71	154.86	155.01
% Ch, Annual Rate	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Manufacturing	12.93	12.91	12.89	12.88	12.87	12.85	12.83	12.80
% Ch, Annual Rate	-0.6	-0.6	-0.4	-0.3	-0.5	-0.5	-0.6	-0.8
Durable Manufacturing	8.15	8.14	8.14	8.13	8.12	8.11	8.10	8.09
% Ch, Annual Rate	-0.5	-0.5	-0.3	-0.2	-0.5	-0.5	-0.5	-0.7
Nondurable Manufacturing	4.78	4.77	4.76	4.75	4.74	4.74	4.73	4.72
% Ch, Annual Rate	-0.8	-0.8	-0.7	-0.6	-0.6	-0.6	-0.7	-0.8
Construction	8.47	8.55	8.61	8.67	8.72	8.77	8.81	8.85
% Ch, Annual Rate	3.7	3.5	3.1	2.7	2.5	2.3	1.8	1.6
Service-Providing	131.57	131.71	131.86	132.00	132.14	132.27	132.40	132.55
% Ch, Annual Rate	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Miscellaneous Indicators								
Oil-WTI (\$ per barrel)	56.2	55.8	55.4	55.1	54.9	54.6	54.3	54.2
Personal Saving/Disposable Income (%)	3.9	3.9	3.9	3.8	4.0	4.0	4.0	4.0
Auto Sales (Millions)	5.3	5.3	5.3	5.4	5.4	5.5	5.5	5.6
% Ch, Annual Rate	-1.4	0.2	1.2	5.3	3.4	3.6	4.5	2.6
Housing Starts (Millions)	1.482	1.489	1.490	1.490	1.489	1.486	1.482	1.477
% Ch, Annual Rate	2.1	1.9	0.2	-0.1	-0.3	-0.6	-1.1	-1.5
Federal Budget Surplus (Billions)	-1,253.2	-1,250.8	-1,247.1	-1,242.0	-1,262.3	-1,259.7	-1,258.2	-1,264.1
Net Exports (Billions)	-615.2	-620.6	-625.6	-628.3	-629.4	-631.4	-635.0	-640.1
3-Month Treasury Bill Rate (%)	3.18	3.18	3.17	3.17	3.17	3.14	2.93	2.92
10-Year Treasury Note Yield (%)	3.68	3.66	3.64	3.61	3.58	3.56	3.53	3.51
Bond Index of 20 G.O. Munis. (%)	4.51	4.48	4.46	4.43	4.40	4.37	4.35	4.33
30-Year Fixed Mortgage Rate (%)	5.33	5.31	5.30	5.28	5.26	5.24	5.21	5.19

Table A1.3
Washington Economic Forecast Summary
Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Real Income (Billions of Chained 2009 Dollars)								
Real Personal Income	359.037	372.924	386.483	398.843	410.518	422.498	434.802	447.398
% Ch	3.5	3.9	3.6	3.2	2.9	2.9	2.9	2.9
Real Wage and Salary Disb.	183.785	194.214	203.540	210.000	216.543	222.932	229.401	235.997
% Ch	4.9	5.7	4.8	3.2	3.1	3.0	2.9	2.9
Real Nonwage Income	175.252	178.710	182.944	188.843	193.975	199.565	205.401	211.401
% Ch	2.0	2.0	2.4	3.2	2.7	2.9	2.9	2.9
Real Per Capita Income (\$/Person)	49,309	50,349	51,342	52,202	52,995	53,860	54,796	55,793
% Ch	1.7	2.1	2.0	1.7	1.5	1.6	1.7	1.8
Price and Wage Indexes								
U.S. Implicit Price Deflator, PCE (2009=1.0)	1.108	1.127	1.150	1.173	1.197	1.221	1.246	1.272
% Ch	1.2	1.7	2.1	1.9	2.1	2.0	2.1	2.1
Seattle Cons. Price Index (1982-84=1.0)	2.550	2.627	2.714	2.775	2.839	2.904	2.971	3.040
% Ch	2.3	3.0	3.3	2.2	2.3	2.3	2.3	2.3
Average Nonfarm Annual Wage	60,556	63,631	66,507	68,678	71,327	74,251	77,402	80,781
% Ch	3.0	5.1	4.5	3.3	3.9	4.1	4.2	4.4
Avg. Hourly Earnings-Mfg. (\$/Hour)	26.42	27.38	28.48	29.41	30.30	31.33	32.46	33.64
% Ch	3.5	3.6	4.0	3.3	3.0	3.4	3.6	3.6
Current Dollar Income (Billions of Dollars)								
Personal Income	397.772	420.120	444.554	467.693	491.377	516.019	541.969	569.146
% Ch	4.7	5.6	5.8	5.2	5.1	5.0	5.0	5.0
Disposable Personal Income	348.823	367.731	389.991	410.756	431.545	452.176	473.520	496.181
% Ch	4.9	5.4	6.1	5.3	5.1	4.8	4.7	4.8
Per Capita Income (\$/Person)	54,627	56,719	59,055	61,212	63,432	65,781	68,301	70,975
% Ch	2.9	3.8	4.1	3.7	3.6	3.7	3.8	3.9
Employment (Thousands)								
Washington Civilian Labor Force	3,635.7	3,723.3	3,776.3	3,846.6	3,912.6	3,967.3	4,014.7	4,056.9
Total Washington Employment	3,444.0	3,546.3	3,602.0	3,681.3	3,742.9	3,792.0	3,832.8	3,868.7
Unemployment Rate (%)	5.28	4.76	4.62	4.30	4.34	4.42	4.53	4.64
Nonfarm Payroll Employment	3,244.5	3,322.9	3,404.6	3,469.3	3,516.8	3,550.4	3,578.0	3,600.7
% Ch	3.1	2.4	2.5	1.9	1.4	1.0	0.8	0.6
Manufacturing	290.0	283.8	286.6	290.8	293.2	295.3	296.7	297.9
% Ch	-0.7	-2.1	1.0	1.5	0.8	0.7	0.5	0.4
Durable Manufacturing	207.6	200.1	200.6	203.5	205.5	207.1	208.3	209.2
% Ch	-1.7	-3.6	0.2	1.5	1.0	0.8	0.6	0.4
Aerospace	91.0	84.1	81.9	82.0	82.0	82.0	82.0	82.0
% Ch	-3.2	-7.6	-2.6	0.1	0.0	0.0	0.0	0.0
Nondurable Manufacturing	82.4	83.7	86.1	87.3	87.7	88.2	88.4	88.7
% Ch	2.1	1.5	2.9	1.4	0.4	0.6	0.2	0.3
Construction	186.6	199.7	210.8	213.9	215.0	214.8	214.1	212.2
% Ch	7.7	7.0	5.6	1.4	0.5	-0.1	-0.3	-0.9
Service-Providing	2,761.6	2,833.2	2,900.7	2,957.9	3,001.7	3,033.3	3,060.2	3,083.6
% Ch	3.2	2.6	2.4	2.0	1.5	1.1	0.9	0.8
Software Publishers	58.9	61.3	64.3	65.4	66.4	67.5	68.7	70.0
% Ch	5.3	4.1	4.9	1.6	1.5	1.7	1.8	1.9
Electronic Shopping and Mail-Order	38.2	49.7	57.8	62.4	65.7	68.2	70.2	72.0
% Ch	26.6	30.0	16.3	8.0	5.2	3.8	3.0	2.5
Housing Indicators (Thousands)								
Housing Units Authorized by Bldg. Permit	44.077	45.794	45.409	43.019	43.408	42.697	41.989	40.862
% Ch	9.2	3.9	-0.8	-5.3	0.9	-1.6	-1.7	-2.7
Single-Family	22.463	23.115	24.232	24.721	25.804	26.051	26.356	26.211
% Ch	13.5	2.9	4.8	2.0	4.4	1.0	1.2	-0.6
Multi-Family	21.614	22.679	21.176	18.298	17.604	16.647	15.633	14.651
% Ch	5.0	4.9	-6.6	-13.6	-3.8	-5.4	-6.1	-6.3
30-Year Fixed Mortgage Rate (%)	3.65	3.99	4.51	5.03	5.30	5.35	5.31	5.23

Table A1.4
Washington Economic Forecast Summary
Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Real Income (Billions of Chained 2009 Dollars)								
Real Personal Income	382.639	384.898	387.519	390.878	394.727	397.522	400.206	402.916
% Ch, Annual Rate	5.2	2.4	2.8	3.5	4.0	2.9	2.7	2.7
Real Wage and Salary Disb.	201.487	202.571	204.225	205.876	207.776	209.302	210.733	212.190
% Ch, Annual Rate	9.3	2.2	3.3	3.3	3.7	3.0	2.8	2.8
Real Nonwage Income	181.152	182.327	183.294	185.002	186.951	188.220	189.473	190.726
% Ch, Annual Rate	0.8	2.6	2.1	3.8	4.3	2.7	2.7	2.7
Real Per Capita Income (\$/Person)	51,119	51,232	51,384	51,632	51,946	52,122	52,286	52,455
% Ch, Annual Rate	3.5	0.9	1.2	2.0	2.5	1.4	1.3	1.3
Price and Wage Indexes								
U.S. Implicit Price Deflator, PCE (2009=1.0)	1.142	1.147	1.153	1.159	1.164	1.169	1.175	1.182
% Ch, Annual Rate	2.6	2.0	2.0	2.0	1.8	2.0	2.1	2.2
Seattle Cons. Price Index (1982-84=1.0)	2.689	2.706	2.723	2.739	2.752	2.766	2.782	2.800
% Ch, Annual Rate	4.2	2.5	2.6	2.3	1.9	2.2	2.3	2.5
Average Nonfarm Annual Wage	65,862	66,193	66,718	67,256	67,834	68,369	68,941	69,570
% Ch, Annual Rate	8.9	2.0	3.2	3.3	3.5	3.2	3.4	3.7
Avg. Hourly Earnings-Mfg. (\$/Hour)	27.90	28.43	28.68	28.91	29.11	29.31	29.51	29.72
% Ch, Annual Rate	0.5	7.8	3.5	3.3	2.8	2.7	2.7	2.9
Current Dollar Income (Billions of Dollars)								
Personal Income	436.867	441.608	446.840	452.902	459.365	464.865	470.389	476.154
% Ch, Annual Rate	7.9	4.4	4.8	5.5	5.8	4.9	4.8	5.0
Disposable Personal Income	382.997	387.531	392.005	397.432	403.304	408.238	413.197	418.287
% Ch, Annual Rate	9.5	4.8	4.7	5.7	6.0	5.0	4.9	5.0
Per Capita Income (\$/Person)	58,364	58,781	59,249	59,825	60,452	60,952	61,455	61,989
% Ch, Annual Rate	6.1	2.9	3.2	3.9	4.3	3.3	3.3	3.5
Employment (Thousands)								
Washington Civilian Labor Force	3,759.5	3,762.4	3,782.4	3,801.0	3,820.0	3,838.2	3,855.6	3,872.8
Total Washington Employment	3,581.6	3,585.0	3,608.8	3,632.5	3,654.2	3,673.4	3,690.7	3,706.9
Unemployment Rate (%)	4.73	4.72	4.59	4.43	4.34	4.29	4.28	4.28
Nonfarm Payroll Employment	3,376.8	3,395.5	3,414.2	3,432.0	3,447.9	3,463.5	3,476.7	3,489.0
% Ch, Annual Rate	3.1	2.2	2.2	2.1	1.9	1.8	1.5	1.4
Manufacturing	284.9	285.9	287.1	288.7	289.8	290.4	291.2	292.0
% Ch, Annual Rate	3.6	1.4	1.7	2.2	1.5	0.9	1.1	1.1
Durable Manufacturing	199.4	200.1	200.8	201.9	202.7	203.1	203.8	204.4
% Ch, Annual Rate	2.7	1.4	1.4	2.2	1.5	1.0	1.3	1.3
Aerospace	81.6	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0
Nondurable Manufacturing	85.5	85.8	86.3	86.8	87.1	87.2	87.4	87.5
% Ch, Annual Rate	5.9	1.5	2.5	2.2	1.5	0.6	0.7	0.7
Construction	208.2	210.7	211.9	212.4	213.1	213.7	214.0	214.7
% Ch, Annual Rate	7.8	4.8	2.3	1.0	1.1	1.3	0.5	1.3
Service-Providing	2,877.4	2,892.4	2,908.6	2,924.2	2,938.4	2,952.8	2,964.8	2,975.5
% Ch, Annual Rate	2.7	2.1	2.3	2.2	2.0	2.0	1.6	1.5
Software Publishers	63.2	64.3	64.8	65.0	65.1	65.3	65.5	65.7
% Ch, Annual Rate	6.2	7.5	2.8	1.3	0.4	1.2	1.2	1.5
Electronic Shopping and Mail-Order	55.5	57.3	58.6	59.9	61.0	62.0	62.9	63.8
% Ch, Annual Rate	15.8	13.5	9.7	8.6	7.7	6.9	6.2	5.6
Housing Indicators (Thousands)								
Housing Units Authorized by Bldg. Permit	49.173	46.706	42.836	42.920	43.165	43.066	42.973	42.870
% Ch, Annual Rate	-18.1	-18.6	-29.2	0.8	2.3	-0.9	-0.9	-1.0
Single-Family	24.952	24.362	23.584	24.030	24.440	24.654	24.799	24.991
% Ch, Annual Rate	4.2	-9.1	-12.2	7.8	7.0	3.5	2.4	3.1
Multi-Family	24.221	22.343	19.252	18.889	18.725	18.413	18.175	17.879
% Ch, Annual Rate	-35.2	-27.6	-44.9	-7.3	-3.4	-6.5	-5.1	-6.4
30-Year Fixed Mortgage Rate (%)	4.27	4.49	4.57	4.71	4.85	4.98	5.10	5.20

Table A1.4 (continued)
Washington Economic Forecast Summary
Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Real Income (Billions of Chained 2009 Dollars)								
Real Personal Income	406.236	409.359	411.816	414.660	418.106	421.033	423.953	426.898
% Ch, Annual Rate	3.3	3.1	2.4	2.8	3.4	2.8	2.8	2.8
Real Wage and Salary Disb.	214.079	216.053	217.266	218.772	220.698	222.195	223.672	225.164
% Ch, Annual Rate	3.6	3.7	2.3	2.8	3.6	2.7	2.7	2.7
Real Nonwage Income	192.157	193.306	194.549	195.887	197.408	198.839	200.281	201.734
% Ch, Annual Rate	3.0	2.4	2.6	2.8	3.1	2.9	2.9	2.9
Real Per Capita Income (\$/Person)	52,705	52,931	53,074	53,269	53,543	53,753	53,964	54,180
% Ch, Annual Rate	1.9	1.7	1.1	1.5	2.1	1.6	1.6	1.6
Price and Wage Indexes								
U.S. Implicit Price Deflator, PCE (2009=1.0)	1.188	1.194	1.200	1.206	1.212	1.218	1.224	1.231
% Ch, Annual Rate	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.0
Seattle Cons. Price Index (1982-84=1.0)	2.815	2.831	2.847	2.864	2.879	2.896	2.912	2.929
% Ch, Annual Rate	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.3
Average Nonfarm Annual Wage	70,300	70,970	71,656	72,381	73,161	73,877	74,609	75,358
% Ch, Annual Rate	4.3	3.9	3.9	4.1	4.4	4.0	4.0	4.1
Avg. Hourly Earnings-Mfg. (\$/Hour)	29.94	30.18	30.42	30.67	30.93	31.19	31.46	31.74
% Ch, Annual Rate	3.0	3.2	3.3	3.3	3.4	3.4	3.5	3.5
Current Dollar Income (Billions of Dollars)								
Personal Income	482.498	488.737	494.168	500.104	506.745	512.903	519.096	525.331
% Ch, Annual Rate	5.4	5.3	4.5	4.9	5.4	5.0	4.9	4.9
Disposable Personal Income	423.918	429.285	433.951	439.026	444.532	449.629	454.724	459.820
% Ch, Annual Rate	5.5	5.2	4.4	4.8	5.1	4.7	4.6	4.6
Per Capita Income (\$/Person)	62,599	63,195	63,688	64,246	64,895	65,482	66,075	66,673
% Ch, Annual Rate	4.0	3.9	3.2	3.6	4.1	3.7	3.7	3.7
Employment (Thousands)								
Washington Civilian Labor Force	3,889.7	3,906.2	3,920.6	3,933.9	3,947.9	3,961.2	3,973.8	3,986.0
Total Washington Employment	3,721.4	3,737.0	3,750.3	3,762.8	3,775.5	3,786.9	3,797.5	3,807.9
Unemployment Rate (%)	4.33	4.33	4.34	4.35	4.37	4.40	4.44	4.47
Nonfarm Payroll Employment	3,499.3	3,516.6	3,521.7	3,529.7	3,538.8	3,547.1	3,554.4	3,561.4
% Ch, Annual Rate	1.2	2.0	0.6	0.9	1.0	0.9	0.8	0.8
Manufacturing	292.6	292.9	293.4	294.0	294.6	295.2	295.6	295.9
% Ch, Annual Rate	0.8	0.5	0.7	0.8	0.8	0.8	0.6	0.4
Durable Manufacturing	205.0	205.3	205.7	206.1	206.5	207.0	207.4	207.6
% Ch, Annual Rate	1.1	0.7	0.7	0.7	0.9	0.9	0.7	0.5
Aerospace	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nondurable Manufacturing	87.6	87.6	87.7	87.9	88.1	88.2	88.3	88.3
% Ch, Annual Rate	0.2	0.1	0.7	0.8	0.7	0.6	0.4	0.1
Construction	214.7	215.1	215.1	215.2	215.0	214.8	214.7	214.6
% Ch, Annual Rate	0.0	0.8	0.1	0.2	-0.3	-0.3	-0.3	-0.1
Service-Providing	2,985.3	3,001.7	3,006.3	3,013.6	3,022.2	3,030.1	3,037.2	3,043.9
% Ch, Annual Rate	1.3	2.2	0.6	1.0	1.1	1.0	0.9	0.9
Software Publishers	66.0	66.2	66.5	66.8	67.1	67.3	67.6	67.9
% Ch, Annual Rate	1.6	1.5	1.7	1.6	1.8	1.7	1.8	1.8
Electronic Shopping and Mail-Order	64.6	65.4	66.1	66.7	67.3	67.9	68.5	69.0
% Ch, Annual Rate	5.1	4.7	4.3	4.0	3.7	3.5	3.3	3.1
Housing Indicators (Thousands)								
Housing Units Authorized by Bldg. Permit	43.174	43.252	43.718	43.488	43.059	42.730	42.577	42.424
% Ch, Annual Rate	2.9	0.7	4.4	-2.1	-3.9	-3.0	-1.4	-1.4
Single-Family	25.309	25.595	26.153	26.159	25.994	25.964	26.065	26.180
% Ch, Annual Rate	5.2	4.6	9.0	0.1	-2.5	-0.5	1.6	1.8
Multi-Family	17.866	17.657	17.565	17.329	17.065	16.765	16.512	16.245
% Ch, Annual Rate	-0.3	-4.6	-2.1	-5.3	-6.0	-6.8	-5.9	-6.3
30-Year Fixed Mortgage Rate (%)	5.24	5.29	5.32	5.34	5.35	5.35	5.35	5.34

Table A1.4 (continued)
Washington Economic Forecast Summary
Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Real Income (Billions of Chained 2009 Dollars)								
Real Personal Income	430.418	433.335	436.279	439.176	442.833	445.905	448.927	451.927
% Ch, Annual Rate	3.3	2.7	2.7	2.7	3.4	2.8	2.7	2.7
Real Wage and Salary Disb.	227.057	228.604	230.189	231.754	233.708	235.247	236.771	238.263
% Ch, Annual Rate	3.4	2.8	2.8	2.7	3.4	2.7	2.6	2.5
Real Nonwage Income	203.361	204.732	206.090	207.422	209.125	210.659	212.157	213.664
% Ch, Annual Rate	3.3	2.7	2.7	2.6	3.3	3.0	2.9	2.9
Real Per Capita Income (\$/Person)	54,470	54,686	54,906	55,122	55,435	55,676	55,913	56,149
% Ch, Annual Rate	2.2	1.6	1.6	1.6	2.3	1.8	1.7	1.7
Price and Wage Indexes								
U.S. Implicit Price Deflator, PCE (2009=1.0)	1.237	1.243	1.250	1.256	1.262	1.269	1.275	1.282
% Ch, Annual Rate	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.0
Seattle Cons. Price Index (1982-84=1.0)	2.946	2.963	2.980	2.997	3.014	3.032	3.049	3.066
% Ch, Annual Rate	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3
Average Nonfarm Annual Wage	76,202	76,993	77,800	78,612	79,518	80,356	81,202	82,047
% Ch, Annual Rate	4.6	4.2	4.3	4.2	4.7	4.3	4.3	4.2
Avg. Hourly Earnings-Mfg. (\$/Hour)	32.02	32.31	32.60	32.90	33.20	33.49	33.79	34.08
% Ch, Annual Rate	3.6	3.7	3.7	3.7	3.7	3.6	3.6	3.5
Current Dollar Income (Billions of Dollars)								
Personal Income	532.354	538.735	545.184	551.603	559.011	565.790	572.529	579.253
% Ch, Annual Rate	5.5	4.9	4.9	4.8	5.5	4.9	4.8	4.8
Disposable Personal Income	465.635	470.859	476.150	481.434	487.639	493.317	499.007	504.760
% Ch, Annual Rate	5.2	4.6	4.6	4.5	5.3	4.7	4.7	4.7
Per Capita Income (\$/Person)	67,371	67,987	68,612	69,233	69,979	70,645	71,307	71,968
% Ch, Annual Rate	4.3	3.7	3.7	3.7	4.4	3.9	3.8	3.8
Employment (Thousands)								
Washington Civilian Labor Force	3,997.8	4,009.2	4,020.4	4,031.4	4,041.9	4,052.2	4,062.1	4,071.6
Total Washington Employment	3,818.1	3,828.1	3,837.9	3,847.3	3,856.3	3,864.8	3,872.8	3,880.8
Unemployment Rate (%)	4.49	4.52	4.54	4.57	4.59	4.63	4.66	4.68
Nonfarm Payroll Employment	3,568.2	3,574.8	3,581.3	3,587.6	3,593.4	3,598.6	3,603.2	3,607.5
% Ch, Annual Rate	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5
Manufacturing	296.2	296.5	296.9	297.3	297.6	297.9	298.0	298.1
% Ch, Annual Rate	0.4	0.4	0.5	0.6	0.4	0.4	0.2	0.1
Durable Manufacturing	207.9	208.2	208.5	208.8	209.1	209.3	209.3	209.3
% Ch, Annual Rate	0.5	0.5	0.7	0.7	0.4	0.3	0.1	0.1
Aerospace	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nondurable Manufacturing	88.3	88.3	88.4	88.5	88.6	88.6	88.7	88.8
% Ch, Annual Rate	0.1	0.1	0.2	0.4	0.4	0.4	0.3	0.2
Construction	214.5	214.3	214.0	213.6	213.2	212.6	211.9	211.1
% Ch, Annual Rate	-0.3	-0.4	-0.5	-0.7	-0.9	-1.1	-1.3	-1.5
Service-Providing	3,050.5	3,057.0	3,063.4	3,069.7	3,075.6	3,081.1	3,086.2	3,091.4
% Ch, Annual Rate	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7
Software Publishers	68.3	68.6	68.9	69.2	69.5	69.9	70.2	70.5
% Ch, Annual Rate	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.8
Electronic Shopping and Mail-Order	69.5	70.0	70.4	70.9	71.3	71.8	72.2	72.6
% Ch, Annual Rate	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3
Housing Indicators (Thousands)								
Housing Units Authorized by Bldg. Permit	42.287	42.150	41.893	41.627	41.353	41.050	40.710	40.336
% Ch, Annual Rate	-1.3	-1.3	-2.4	-2.5	-2.6	-2.9	-3.3	-3.6
Single-Family	26.295	26.389	26.383	26.358	26.320	26.264	26.183	26.078
% Ch, Annual Rate	1.8	1.4	-0.1	-0.4	-0.6	-0.8	-1.2	-1.6
Multi-Family	15.992	15.761	15.511	15.269	15.034	14.786	14.527	14.259
% Ch, Annual Rate	-6.1	-5.7	-6.2	-6.1	-6.0	-6.4	-6.8	-7.2
30-Year Fixed Mortgage Rate (%)	5.33	5.31	5.30	5.28	5.26	5.24	5.21	5.19

Table A2.1

U.S. Nonagricultural Employment by Industry (Millions)

Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Nonfarm Payroll Employment	144.35	146.62	148.91	150.91	152.32	153.28	154.07	154.78
% Ch	1.8	1.6	1.6	1.3	0.9	0.6	0.5	0.5
Manufacturing	12.35	12.44	12.71	12.87	12.93	12.96	12.90	12.84
% Ch	0.1	0.7	2.1	1.3	0.4	0.2	-0.4	-0.5
Durable Manufacturing	7.71	7.74	7.93	8.05	8.12	8.16	8.14	8.11
% Ch	-0.7	0.3	2.5	1.5	0.8	0.5	-0.2	-0.4
Wood Products	0.39	0.40	0.40	0.41	0.43	0.45	0.47	0.48
% Ch	2.7	1.1	1.4	1.9	4.6	4.7	3.6	2.7
Primary and Fabricated Metals	1.80	1.80	1.86	1.90	1.93	1.95	1.96	1.98
% Ch	-3.0	0.4	3.3	2.2	1.5	0.9	0.8	0.8
Computer and Electronic Products	1.05	1.04	1.07	1.09	1.10	1.10	1.10	1.09
% Ch	-0.5	-0.5	2.4	2.1	0.5	0.2	-0.1	-0.9
Machinery and Electrical Equipment	1.46	1.47	1.53	1.57	1.60	1.61	1.62	1.62
% Ch	-3.0	0.6	4.1	2.8	1.7	0.9	0.3	0.2
Transportation Equipment	1.63	1.63	1.65	1.65	1.63	1.61	1.55	1.50
% Ch	1.6	0.1	1.4	-0.6	-1.1	-1.2	-3.6	-3.4
Other Durables	1.39	1.40	1.42	1.43	1.44	1.45	1.45	1.44
% Ch	1.3	0.7	1.5	1.1	0.3	0.6	0.2	-0.2
Nondurable Manufacturing	4.64	4.71	4.77	4.81	4.81	4.80	4.76	4.73
% Ch	1.5	1.4	1.4	0.9	-0.2	-0.2	-0.7	-0.7
Food Manufacturing	1.56	1.60	1.65	1.69	1.71	1.72	1.73	1.74
% Ch	3.0	3.0	2.8	2.8	0.8	0.8	0.4	0.7
Paper and Paper Products	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36
% Ch	-0.6	-0.5	1.3	-0.8	-1.0	-0.3	-0.7	-0.6
Other Nondurables	2.71	2.73	2.75	2.75	2.73	2.71	2.67	2.63
% Ch	1.0	0.8	0.6	0.0	-0.7	-0.8	-1.4	-1.5
Natural Resources and Mining	0.67	0.68	0.74	0.78	0.79	0.80	0.81	0.81
% Ch	-17.8	1.5	9.4	4.6	1.6	1.4	1.0	0.4
Construction	6.73	6.95	7.22	7.48	7.87	8.27	8.57	8.79
% Ch	4.1	3.4	3.8	3.7	5.1	5.1	3.7	2.5
Trade, Transportation, and Utilities	27.26	27.49	27.81	27.94	27.85	27.66	27.44	27.27
% Ch	1.4	0.8	1.2	0.5	-0.3	-0.7	-0.8	-0.6
Wholesale Trade	5.86	5.90	5.96	6.02	6.05	6.08	6.10	6.11
% Ch	0.1	0.7	0.9	1.0	0.6	0.4	0.3	0.3
Retail Trade	15.83	15.86	15.98	16.00	15.88	15.69	15.46	15.29
% Ch	1.4	0.2	0.7	0.1	-0.8	-1.2	-1.4	-1.1
Trans., Warehousing, and Utilities	5.57	5.72	5.88	5.93	5.92	5.90	5.88	5.86
% Ch	2.7	2.8	2.7	0.9	-0.1	-0.4	-0.4	-0.4
Information	2.79	2.79	2.77	2.78	2.82	2.88	2.89	2.88
% Ch	1.6	0.0	-0.8	0.3	1.5	2.0	0.5	-0.4
Publishing Industries	0.73	0.72	0.71	0.69	0.67	0.66	0.65	0.64
% Ch	0.5	-1.0	-1.2	-3.5	-2.7	-1.9	-1.3	-1.1
Other Information	2.06	2.07	2.06	2.09	2.15	2.22	2.24	2.24
% Ch	1.9	0.3	-0.7	1.6	2.8	3.2	1.0	-0.2
Financial Activities	8.29	8.45	8.58	8.69	8.74	8.75	8.74	8.73
% Ch	2.0	2.0	1.5	1.3	0.5	0.1	-0.1	-0.1
Professional and Business Services	20.05	20.47	20.94	21.92	22.75	23.30	23.76	24.23
% Ch	2.1	2.1	2.3	4.7	3.8	2.4	2.0	2.0
Education and Health Services	22.64	23.19	23.61	23.75	23.71	23.74	23.82	23.92
% Ch	2.8	2.4	1.8	0.6	-0.2	0.2	0.3	0.4
Leisure and Hospitality	15.66	16.06	16.33	16.42	16.40	16.47	16.55	16.59
% Ch	3.3	2.6	1.7	0.5	-0.1	0.5	0.5	0.2
Other Services	5.69	5.78	5.87	5.82	5.72	5.66	5.62	5.60
% Ch	1.2	1.5	1.6	-0.9	-1.6	-1.1	-0.6	-0.4
Federal Government	2.79	2.81	2.79	2.79	2.91	2.79	2.79	2.79
% Ch	1.4	0.4	-0.6	-0.1	4.5	-4.3	0.0	0.0
State and Local Government	19.44	19.52	19.54	19.67	19.84	20.01	20.17	20.34
% Ch	0.9	0.4	0.1	0.7	0.8	0.8	0.8	0.8

Table A2.2

U.S. Nonagricultural Employment by Industry (Millions)

Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Nonfarm Payroll Employment	148.07	148.59	149.20	149.79	150.27	150.73	151.14	151.50
% Ch, Annual Rate	1.7	1.4	1.7	1.6	1.3	1.2	1.1	0.9
Manufacturing	12.61	12.68	12.74	12.80	12.85	12.85	12.87	12.90
% Ch, Annual Rate	2.7	2.3	1.9	2.2	1.3	0.2	0.6	0.8
Durable Manufacturing	7.86	7.92	7.95	8.00	8.03	8.04	8.06	8.08
% Ch, Annual Rate	3.6	2.9	1.8	2.4	1.6	0.3	0.9	1.3
Wood Products	0.40	0.41	0.40	0.40	0.41	0.41	0.41	0.42
% Ch, Annual Rate	5.3	3.4	-7.5	5.6	3.6	0.2	3.0	4.8
Primary and Fabricated Metals	1.85	1.86	1.87	1.88	1.89	1.90	1.91	1.91
% Ch, Annual Rate	4.7	2.7	1.5	2.6	2.7	1.8	1.6	1.8
Computer and Electronic Products	1.06	1.06	1.07	1.08	1.09	1.09	1.09	1.10
% Ch, Annual Rate	2.3	1.9	2.4	4.7	1.6	1.3	0.9	1.1
Machinery and Electrical Equipment	1.50	1.52	1.54	1.55	1.56	1.56	1.58	1.59
% Ch, Annual Rate	4.7	5.3	5.0	1.9	2.1	2.2	3.2	2.9
Transportation Equipment	1.65	1.66	1.66	1.66	1.66	1.65	1.64	1.64
% Ch, Annual Rate	2.8	2.8	-0.4	0.7	-0.2	-2.9	-1.6	-0.5
Other Durables	1.41	1.41	1.42	1.43	1.43	1.43	1.43	1.43
% Ch, Annual Rate	2.4	1.5	3.8	1.8	1.2	-0.4	-0.2	-0.1
Nondurable Manufacturing	4.74	4.76	4.78	4.80	4.81	4.81	4.82	4.82
% Ch, Annual Rate	1.2	1.2	2.0	1.8	0.8	0.0	0.2	0.1
Food Manufacturing	1.63	1.64	1.66	1.67	1.69	1.69	1.70	1.70
% Ch, Annual Rate	2.4	2.3	4.5	4.0	3.2	1.6	1.5	0.9
Paper and Paper Products	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
% Ch, Annual Rate	2.5	1.8	0.9	-0.3	-1.9	-1.7	-1.4	-0.7
Other Nondurables	2.74	2.75	2.75	2.76	2.76	2.75	2.75	2.74
% Ch, Annual Rate	0.5	0.5	0.6	0.8	-0.2	-0.8	-0.5	-0.3
Natural Resources and Mining	0.71	0.73	0.75	0.77	0.77	0.77	0.78	0.78
% Ch, Annual Rate	11.0	12.0	11.5	5.9	2.3	2.1	2.1	2.9
Construction	7.14	7.20	7.24	7.29	7.36	7.44	7.52	7.61
% Ch, Annual Rate	6.6	3.1	2.4	2.7	4.0	4.3	4.5	5.1
Trade, Transportation, and Utilities	27.69	27.77	27.86	27.92	27.95	27.93	27.95	27.93
% Ch, Annual Rate	1.5	1.3	1.3	0.9	0.4	-0.2	0.2	-0.2
Wholesale Trade	5.95	5.95	5.95	5.98	5.99	6.01	6.03	6.04
% Ch, Annual Rate	1.5	-0.5	0.4	1.6	0.7	1.2	1.5	1.1
Retail Trade	15.91	15.97	16.01	16.03	16.04	16.01	15.99	15.95
% Ch, Annual Rate	1.0	1.5	1.0	0.6	0.3	-0.9	-0.4	-1.0
Trans., Warehousing, and Utilities	5.82	5.86	5.90	5.92	5.92	5.92	5.93	5.94
% Ch, Annual Rate	3.0	2.5	2.9	1.0	0.1	0.2	0.6	0.5
Information	2.76	2.77	2.78	2.77	2.77	2.79	2.78	2.78
% Ch, Annual Rate	-2.7	1.8	0.9	-1.0	-0.1	3.0	-1.7	-0.7
Publishing Industries	0.72	0.71	0.72	0.71	0.70	0.69	0.69	0.68
% Ch, Annual Rate	-1.7	-0.3	1.8	-3.4	-6.8	-3.7	-3.8	-2.6
Other Information	2.05	2.06	2.06	2.06	2.07	2.10	2.09	2.09
% Ch, Annual Rate	-3.0	2.5	0.6	-0.2	2.3	5.4	-1.0	-0.1
Financial Activities	8.54	8.56	8.60	8.64	8.68	8.69	8.70	8.71
% Ch, Annual Rate	1.5	1.2	1.9	2.1	1.5	0.6	0.7	0.4
Professional and Business Services	20.77	20.84	20.93	21.20	21.49	21.79	22.08	22.34
% Ch, Annual Rate	2.3	1.4	1.8	5.2	5.5	5.8	5.4	4.7
Education and Health Services	23.46	23.55	23.69	23.73	23.71	23.77	23.76	23.75
% Ch, Annual Rate	2.0	1.5	2.5	0.7	-0.3	1.0	-0.1	-0.3
Leisure and Hospitality	16.24	16.29	16.38	16.42	16.45	16.43	16.41	16.40
% Ch, Annual Rate	1.5	1.3	2.1	1.1	0.7	-0.5	-0.4	-0.3
Other Services	5.83	5.86	5.89	5.88	5.86	5.83	5.80	5.78
% Ch, Annual Rate	1.1	2.1	2.3	-0.7	-1.9	-1.9	-1.6	-2.0
Federal Government	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79
% Ch, Annual Rate	-1.2	-0.9	0.0	0.0	0.0	0.0	0.0	0.0
State and Local Government	19.53	19.54	19.54	19.57	19.61	19.65	19.69	19.74
% Ch, Annual Rate	0.0	0.2	0.1	0.5	0.9	0.9	0.9	0.9

Table A2.2 (continued)

U.S. Nonagricultural Employment by Industry (Millions)

Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Nonfarm Payroll Employment	151.80	152.36	152.46	152.66	152.94	153.19	153.41	153.60
% Ch, Annual Rate	0.8	1.5	0.3	0.5	0.7	0.7	0.6	0.5
Manufacturing	12.92	12.92	12.93	12.94	12.95	12.96	12.96	12.95
% Ch, Annual Rate	0.6	0.1	0.3	0.3	0.4	0.5	0.0	-0.5
Durable Manufacturing	8.11	8.11	8.12	8.13	8.15	8.17	8.17	8.16
% Ch, Annual Rate	1.1	0.4	0.4	0.5	0.7	0.9	0.2	-0.3
Wood Products	0.42	0.43	0.43	0.44	0.44	0.45	0.45	0.45
% Ch, Annual Rate	5.5	5.2	5.1	5.3	5.0	4.9	3.7	2.6
Primary and Fabricated Metals	1.92	1.93	1.94	1.94	1.94	1.95	1.95	1.95
% Ch, Annual Rate	1.9	1.3	1.1	0.7	0.8	1.1	0.5	0.6
Computer and Electronic Products	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
% Ch, Annual Rate	0.7	0.0	-0.5	-0.1	0.6	0.7	0.3	-0.2
Machinery and Electrical Equipment	1.59	1.60	1.60	1.60	1.61	1.61	1.61	1.61
% Ch, Annual Rate	1.5	0.4	1.0	1.0	1.2	0.8	0.5	0.1
Transportation Equipment	1.64	1.63	1.62	1.62	1.61	1.61	1.61	1.59
% Ch, Annual Rate	-0.3	-1.4	-1.8	-1.4	-1.0	0.1	-1.4	-3.2
Other Durables	1.43	1.43	1.44	1.44	1.44	1.45	1.45	1.45
% Ch, Annual Rate	0.5	0.3	0.8	0.8	0.6	0.7	0.3	0.1
Nondurable Manufacturing	4.81	4.80	4.80	4.80	4.80	4.80	4.79	4.78
% Ch, Annual Rate	-0.4	-0.6	0.0	0.0	-0.1	-0.2	-0.4	-0.8
Food Manufacturing	1.70	1.70	1.71	1.71	1.72	1.72	1.72	1.72
% Ch, Annual Rate	0.6	0.1	1.0	1.0	0.8	0.8	0.7	0.2
Paper and Paper Products	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
% Ch, Annual Rate	-1.2	-0.9	-0.5	-0.2	-0.1	-0.2	-0.4	-0.8
Other Nondurables	2.74	2.73	2.73	2.72	2.72	2.71	2.71	2.70
% Ch, Annual Rate	-0.9	-0.9	-0.6	-0.6	-0.8	-0.9	-1.2	-1.4
Natural Resources and Mining	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.81
% Ch, Annual Rate	1.4	0.7	1.1	-0.2	1.2	3.3	2.0	1.9
Construction	7.71	7.81	7.92	8.03	8.13	8.22	8.31	8.40
% Ch, Annual Rate	5.1	5.4	5.4	5.7	5.3	4.7	4.3	4.1
Trade, Transportation, and Utilities	27.90	27.86	27.86	27.78	27.73	27.69	27.64	27.58
% Ch, Annual Rate	-0.5	-0.5	-0.1	-1.0	-0.7	-0.6	-0.8	-0.8
Wholesale Trade	6.05	6.05	6.06	6.06	6.07	6.08	6.08	6.08
% Ch, Annual Rate	0.1	0.1	0.7	0.3	0.5	0.3	0.2	0.3
Retail Trade	15.92	15.89	15.88	15.81	15.76	15.71	15.66	15.61
% Ch, Annual Rate	-0.8	-0.7	-0.3	-1.7	-1.4	-1.0	-1.3	-1.4
Trans., Warehousing, and Utilities	5.93	5.92	5.92	5.91	5.91	5.90	5.90	5.89
% Ch, Annual Rate	-0.4	-0.7	-0.2	-0.5	-0.1	-0.4	-0.4	-0.5
Information	2.80	2.81	2.83	2.84	2.86	2.88	2.88	2.89
% Ch, Annual Rate	3.5	1.7	2.4	2.1	2.7	1.9	1.0	0.5
Publishing Industries	0.68	0.67	0.67	0.67	0.66	0.66	0.66	0.65
% Ch, Annual Rate	-2.5	-2.6	-2.0	-2.2	-1.7	-1.8	-1.6	-1.5
Other Information	2.12	2.14	2.16	2.18	2.20	2.22	2.23	2.23
% Ch, Annual Rate	5.5	3.1	3.9	3.4	4.1	3.1	1.8	1.0
Financial Activities	8.72	8.73	8.75	8.76	8.76	8.75	8.75	8.75
% Ch, Annual Rate	0.5	0.2	1.0	0.7	0.0	-0.6	-0.2	0.0
Professional and Business Services	22.51	22.68	22.83	22.98	23.14	23.26	23.36	23.46
% Ch, Annual Rate	3.2	2.9	2.7	2.7	2.8	2.1	1.8	1.7
Education and Health Services	23.70	23.69	23.72	23.72	23.74	23.74	23.75	23.76
% Ch, Annual Rate	-0.8	-0.1	0.4	0.1	0.3	0.1	0.1	0.2
Leisure and Hospitality	16.39	16.38	16.40	16.43	16.43	16.46	16.49	16.52
% Ch, Annual Rate	-0.3	-0.2	0.6	0.7	-0.2	0.8	0.9	0.8
Other Services	5.75	5.73	5.71	5.69	5.68	5.66	5.65	5.64
% Ch, Annual Rate	-1.6	-1.6	-1.2	-1.3	-0.9	-1.2	-1.0	-0.8
Federal Government	2.84	3.14	2.88	2.79	2.79	2.79	2.79	2.79
% Ch, Annual Rate	7.8	49.4	-29.2	-12.3	0.0	0.0	0.0	0.0
State and Local Government	19.78	19.82	19.86	19.90	19.94	19.98	20.03	20.07
% Ch, Annual Rate	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Table A2.2 (continued)

U.S. Nonagricultural Employment by Industry (Millions)

Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Nonfarm Payroll Employment	153.78	153.97	154.17	154.36	154.54	154.71	154.86	155.01
% Ch, Annual Rate	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Manufacturing	12.93	12.91	12.89	12.88	12.87	12.85	12.83	12.80
% Ch, Annual Rate	-0.6	-0.6	-0.4	-0.3	-0.5	-0.5	-0.6	-0.8
Durable Manufacturing	8.15	8.14	8.14	8.13	8.12	8.11	8.10	8.09
% Ch, Annual Rate	-0.5	-0.5	-0.3	-0.2	-0.5	-0.5	-0.5	-0.7
Wood Products	0.46	0.46	0.47	0.47	0.48	0.48	0.48	0.48
% Ch, Annual Rate	3.9	3.5	3.7	3.9	3.0	2.3	0.8	0.7
Primary and Fabricated Metals	1.96	1.96	1.97	1.97	1.98	1.98	1.98	1.98
% Ch, Annual Rate	0.7	0.9	1.1	1.2	0.8	0.7	0.3	0.1
Computer and Electronic Products	1.10	1.10	1.10	1.10	1.09	1.09	1.09	1.08
% Ch, Annual Rate	-0.1	-0.3	-0.2	-0.6	-1.1	-1.2	-1.1	-1.1
Machinery and Electrical Equipment	1.61	1.61	1.62	1.62	1.62	1.62	1.62	1.62
% Ch, Annual Rate	-0.1	0.3	0.5	0.6	0.2	0.0	-0.4	-0.5
Transportation Equipment	1.58	1.56	1.54	1.52	1.51	1.50	1.49	1.48
% Ch, Annual Rate	-4.3	-4.7	-4.5	-4.0	-3.5	-3.2	-1.7	-2.3
Other Durables	1.45	1.45	1.45	1.45	1.45	1.45	1.44	1.44
% Ch, Annual Rate	0.0	0.1	0.3	0.1	-0.4	-0.4	-0.5	-0.6
Nondurable Manufacturing	4.78	4.77	4.76	4.75	4.74	4.74	4.73	4.72
% Ch, Annual Rate	-0.8	-0.8	-0.7	-0.6	-0.6	-0.6	-0.7	-0.8
Food Manufacturing	1.72	1.73	1.73	1.73	1.73	1.74	1.74	1.74
% Ch, Annual Rate	0.2	0.2	0.4	0.7	0.7	0.9	0.8	0.7
Paper and Paper Products	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
% Ch, Annual Rate	-0.8	-0.8	-0.7	-0.5	-0.5	-0.6	-0.8	-1.0
Other Nondurables	2.69	2.68	2.67	2.66	2.65	2.64	2.62	2.61
% Ch, Annual Rate	-1.5	-1.5	-1.5	-1.4	-1.5	-1.5	-1.7	-1.8
Natural Resources and Mining	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
% Ch, Annual Rate	1.1	-0.9	0.7	0.8	0.5	0.0	0.3	0.6
Construction	8.47	8.55	8.61	8.67	8.72	8.77	8.81	8.85
% Ch, Annual Rate	3.7	3.5	3.1	2.7	2.5	2.3	1.8	1.6
Trade, Transportation, and Utilities	27.51	27.46	27.41	27.37	27.32	27.28	27.25	27.21
% Ch, Annual Rate	-1.0	-0.8	-0.7	-0.5	-0.7	-0.6	-0.5	-0.5
Wholesale Trade	6.09	6.09	6.10	6.10	6.11	6.11	6.12	6.12
% Ch, Annual Rate	0.5	0.3	0.3	0.3	0.5	0.2	0.2	0.2
Retail Trade	15.54	15.48	15.43	15.40	15.34	15.31	15.28	15.25
% Ch, Annual Rate	-1.8	-1.4	-1.3	-0.9	-1.4	-0.9	-0.8	-0.8
Trans., Warehousing, and Utilities	5.89	5.88	5.87	5.87	5.87	5.86	5.85	5.85
% Ch, Annual Rate	-0.2	-0.4	-0.3	-0.3	-0.2	-0.5	-0.5	-0.5
Information	2.89	2.89	2.89	2.89	2.89	2.88	2.88	2.87
% Ch, Annual Rate	0.7	0.0	0.0	-0.1	-0.2	-0.7	-1.0	-1.3
Publishing Industries	0.65	0.65	0.65	0.65	0.65	0.64	0.64	0.64
% Ch, Annual Rate	-1.1	-1.3	-1.2	-1.1	-0.9	-1.2	-1.2	-1.2
Other Information	2.24	2.24	2.24	2.24	2.24	2.24	2.23	2.23
% Ch, Annual Rate	1.2	0.4	0.3	0.2	0.0	-0.6	-1.0	-1.3
Financial Activities	8.75	8.75	8.74	8.74	8.74	8.73	8.73	8.72
% Ch, Annual Rate	0.2	-0.1	-0.2	-0.2	0.1	-0.3	-0.2	-0.2
Professional and Business Services	23.58	23.70	23.83	23.94	24.08	24.19	24.29	24.39
% Ch, Annual Rate	2.2	2.1	2.1	2.0	2.2	1.9	1.6	1.7
Education and Health Services	23.79	23.81	23.83	23.85	23.88	23.91	23.93	23.97
% Ch, Annual Rate	0.5	0.3	0.4	0.3	0.6	0.4	0.5	0.5
Leisure and Hospitality	16.52	16.54	16.56	16.58	16.56	16.58	16.59	16.61
% Ch, Annual Rate	-0.2	0.6	0.5	0.5	-0.4	0.3	0.4	0.5
Other Services	5.63	5.63	5.62	5.61	5.61	5.60	5.60	5.59
% Ch, Annual Rate	-0.3	-0.5	-0.5	-0.5	-0.3	-0.5	-0.4	-0.4
Federal Government	2.79	2.79	2.79	2.79	2.79	2.79	2.79	2.79
% Ch, Annual Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State and Local Government	20.11	20.15	20.19	20.23	20.28	20.32	20.36	20.40
% Ch, Annual Rate	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Table A2.3

Washington Nonagricultural Employment by Industry (Thousands)

Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Nonfarm Payroll Employment	3,244.5	3,322.9	3,404.6	3,469.3	3,516.8	3,550.4	3,578.0	3,600.7
% Ch	3.1	2.4	2.5	1.9	1.4	1.0	0.8	0.6
Manufacturing	290.0	283.8	286.6	290.8	293.2	295.3	296.7	297.9
% Ch	-0.7	-2.1	1.0	1.5	0.8	0.7	0.5	0.4
Durable Manufacturing	207.6	200.1	200.6	203.5	205.5	207.1	208.3	209.2
% Ch	-1.7	-3.6	0.2	1.5	1.0	0.8	0.6	0.4
Wood Products	13.1	12.9	13.4	13.4	13.6	13.9	14.0	14.0
% Ch	-1.6	-1.1	3.5	-0.2	1.8	1.9	1.0	0.3
Primary and Fabricated Metals	25.2	25.0	25.1	25.5	25.9	26.1	26.3	26.5
% Ch	-2.0	-0.7	0.2	1.8	1.5	0.7	0.7	0.8
Computer and Electronic Products	20.1	19.6	20.3	21.1	21.5	21.8	22.0	21.9
% Ch	0.7	-2.5	3.6	4.0	1.9	1.5	1.0	-0.2
Machinery and Electrical Equipment	20.5	20.6	21.4	22.7	23.8	24.7	25.4	26.2
% Ch	-1.2	0.7	3.7	5.9	4.9	3.8	3.0	2.9
Aerospace	91.0	84.1	81.9	82.0	82.0	82.0	82.0	82.0
% Ch	-3.2	-7.6	-2.6	0.1	0.0	0.0	0.0	0.0
Other Transportation Equip.	10.1	10.2	9.7	9.4	9.0	8.7	8.4	8.2
% Ch	-0.9	0.2	-4.5	-3.2	-3.9	-3.5	-3.4	-2.5
Other Durables	27.6	27.7	28.8	29.5	29.8	30.0	30.3	30.4
% Ch	1.2	0.6	3.9	2.4	0.9	0.9	0.8	0.6
Nondurable Manufacturing	82.4	83.7	86.1	87.3	87.7	88.2	88.4	88.7
% Ch	2.1	1.5	2.9	1.4	0.4	0.6	0.2	0.3
Food Manufacturing	37.5	38.0	39.8	40.5	40.5	40.5	40.3	40.3
% Ch	1.9	1.3	4.5	1.9	0.0	0.0	-0.4	-0.1
Paper and Paper Products	7.8	7.7	7.7	7.6	7.4	7.4	7.2	7.1
% Ch	-3.4	-0.3	-0.5	-1.4	-1.9	-1.2	-1.6	-1.6
Other Nondurables	37.1	37.9	38.6	39.2	39.8	40.4	40.8	41.3
% Ch	3.4	2.1	1.9	1.5	1.4	1.5	1.1	1.1
Natural Resources and Mining	6.3	6.2	6.5	6.7	6.8	6.9	7.0	7.0
% Ch	-0.8	-1.5	5.6	2.6	2.3	1.4	0.8	0.3
Construction	186.6	199.7	210.8	213.9	215.0	214.8	214.1	212.2
% Ch	7.7	7.0	5.6	1.4	0.5	-0.1	-0.3	-0.9
Trade, Transportation, and Utilities	606.3	626.1	641.7	651.8	655.7	655.9	654.5	653.5
% Ch	3.1	3.3	2.5	1.6	0.6	0.0	-0.2	-0.2
Wholesale Trade	132.8	134.4	137.3	139.4	140.4	140.9	141.3	141.6
% Ch	0.6	1.2	2.1	1.5	0.7	0.3	0.3	0.2
Retail Trade	369.1	384.7	397.1	404.5	407.3	407.4	405.8	404.8
% Ch	4.0	4.2	3.2	1.8	0.7	0.0	-0.4	-0.2
Electronic Shopping and Mail-Order	38.2	49.7	57.8	62.4	65.7	68.2	70.2	72.0
% Ch	26.6	30.0	16.3	8.0	5.2	3.8	3.0	2.5
Other Retail Trade	330.9	335.0	339.3	342.0	341.6	339.2	335.6	332.9
% Ch	1.9	1.2	1.3	0.8	-0.1	-0.7	-1.0	-0.8
Trans., Warehousing, and Utilities	104.4	106.9	107.3	107.9	107.9	107.7	107.4	107.1
% Ch	3.4	2.4	0.4	0.5	0.1	-0.2	-0.3	-0.3
Information	121.6	126.3	130.0	132.2	135.5	139.5	141.8	143.2
% Ch	6.2	3.9	2.9	1.6	2.5	3.0	1.6	1.0
Software Publishers	58.9	61.3	64.3	65.4	66.4	67.5	68.7	70.0
% Ch	5.3	4.1	4.9	1.6	1.5	1.7	1.8	1.9
Other Publishing Industries	5.9	5.5	4.5	3.9	3.4	3.0	2.7	2.3
% Ch	-4.0	-7.1	-18.4	-13.8	-12.1	-11.6	-11.4	-12.1
Other Information	56.7	59.5	61.2	62.9	65.7	69.0	70.4	70.9
% Ch	8.4	4.9	2.9	2.8	4.4	5.0	2.0	0.7
Financial Activities	150.3	153.1	156.1	157.6	157.3	156.0	154.4	152.8
% Ch	1.8	1.9	2.0	0.9	-0.2	-0.8	-1.0	-1.0
Professional and Business Services	403.5	414.1	425.7	447.1	465.3	478.5	489.5	500.2
% Ch	3.5	2.6	2.8	5.0	4.1	2.8	2.3	2.2
Education and Health Services	463.5	476.1	491.5	499.1	503.3	508.0	512.7	517.3
% Ch	3.4	2.7	3.2	1.6	0.8	0.9	0.9	0.9
Leisure and Hospitality	323.3	331.6	340.9	345.5	347.7	350.7	353.1	354.2
% Ch	4.3	2.6	2.8	1.3	0.6	0.9	0.7	0.3
Other Services	117.6	119.9	122.8	124.8	126.4	127.8	129.0	130.1
% Ch	2.3	2.0	2.4	1.6	1.3	1.1	1.0	0.8
Federal Government	74.5	74.9	75.3	75.9	78.7	76.6	76.8	77.1
% Ch	1.9	0.4	0.6	0.8	3.7	-2.7	0.3	0.3
State and Local Government	501.0	511.1	516.6	523.9	532.0	540.4	548.2	555.1
% Ch	2.5	2.0	1.1	1.4	1.5	1.6	1.5	1.3

Table A2.4

Washington Nonagricultural Employment by Industry (Thousands)

Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Nonfarm Payroll Employment	3,376.8	3,395.5	3,414.2	3,432.0	3,447.9	3,463.5	3,476.7	3,489.0
% Ch, Annual Rate	3.1	2.2	2.2	2.1	1.9	1.8	1.5	1.4
Manufacturing	284.9	285.9	287.1	288.7	289.8	290.4	291.2	292.0
% Ch, Annual Rate	3.6	1.4	1.7	2.2	1.5	0.9	1.1	1.1
Durable Manufacturing	199.4	200.1	200.8	201.9	202.7	203.1	203.8	204.4
% Ch, Annual Rate	2.7	1.4	1.4	2.2	1.5	1.0	1.3	1.3
Wood Products	13.4	13.6	13.3	13.4	13.4	13.3	13.3	13.4
% Ch, Annual Rate	11.1	5.4	-8.5	2.7	0.9	-1.9	0.4	1.9
Primary and Fabricated Metals	25.2	24.9	25.0	25.2	25.4	25.5	25.6	25.7
% Ch, Annual Rate	2.3	-4.9	1.8	2.8	2.9	1.8	1.5	1.8
Computer and Electronic Products	20.1	20.0	20.3	20.7	20.8	21.0	21.1	21.3
% Ch, Annual Rate	9.7	-1.6	4.7	8.2	3.5	3.1	2.5	2.8
Machinery and Electrical Equipment	21.0	21.1	21.6	21.9	22.2	22.5	22.8	23.2
% Ch, Annual Rate	3.0	2.4	8.6	5.3	5.4	5.6	7.1	6.7
Aerospace	81.6	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Transportation Equip.	9.9	9.7	9.6	9.6	9.5	9.4	9.3	9.3
% Ch, Annual Rate	-3.6	-6.1	-3.0	-0.6	-3.7	-4.8	-2.3	-3.6
Other Durables	28.2	28.8	29.1	29.2	29.4	29.5	29.5	29.6
% Ch, Annual Rate	3.6	7.6	4.1	2.4	2.2	1.2	0.9	0.7
Nondurable Manufacturing	85.5	85.8	86.3	86.8	87.1	87.2	87.4	87.5
% Ch, Annual Rate	5.9	1.5	2.5	2.2	1.5	0.6	0.7	0.7
Food Manufacturing	39.4	39.5	39.9	40.2	40.4	40.5	40.6	40.6
% Ch, Annual Rate	12.6	1.0	3.5	3.1	2.3	0.8	0.7	0.1
Paper and Paper Products	7.6	7.7	7.7	7.7	7.7	7.6	7.6	7.5
% Ch, Annual Rate	-1.9	7.6	0.3	-1.2	-3.0	-2.7	-2.4	-1.6
Other Nondurables	38.4	38.5	38.7	38.9	39.0	39.2	39.3	39.4
% Ch, Annual Rate	1.1	0.9	1.9	2.1	1.5	1.1	1.2	1.7
Natural Resources and Mining	6.4	6.5	6.6	6.6	6.6	6.7	6.7	6.8
% Ch, Annual Rate	12.2	8.4	2.5	1.8	2.5	1.8	2.3	2.9
Construction	208.2	210.7	211.9	212.4	213.1	213.7	214.0	214.7
% Ch, Annual Rate	7.8	4.8	2.3	1.0	1.1	1.3	0.5	1.3
Trade, Transportation, and Utilities	637.3	639.4	643.4	646.8	649.3	650.9	652.8	654.0
% Ch, Annual Rate	3.6	1.3	2.5	2.1	1.6	1.0	1.2	0.8
Wholesale Trade	136.5	137.0	137.5	138.2	138.6	139.2	139.7	140.2
% Ch, Annual Rate	4.1	1.4	1.4	2.2	1.2	1.6	1.6	1.3
Retail Trade	393.0	395.8	398.7	401.0	403.0	403.9	405.2	405.8
% Ch, Annual Rate	4.0	2.9	2.9	2.4	2.0	0.9	1.2	0.6
Electronic Shopping and Mail-Order	55.5	57.3	58.6	59.9	61.0	62.0	62.9	63.8
% Ch	15.8	13.5	9.7	8.6	7.7	6.9	6.2	5.6
Other Retail Trade	337.5	338.6	340.0	341.2	342.1	341.9	342.2	342.0
% Ch	2.2	1.2	1.8	1.3	1.1	-0.1	0.3	-0.3
Trans., Warehousing, and Utilities	107.7	106.6	107.3	107.6	107.7	107.8	107.9	108.1
% Ch, Annual Rate	1.3	-4.1	2.7	1.0	0.3	0.4	0.6	0.6
Information	128.4	130.1	130.7	130.9	131.3	132.4	132.4	132.7
% Ch, Annual Rate	1.0	5.3	1.9	0.5	1.1	3.5	0.1	0.8
Software Publishers	63.2	64.3	64.8	65.0	65.1	65.3	65.5	65.7
% Ch, Annual Rate	6.2	7.5	2.8	1.3	0.4	1.2	1.2	1.5
Other Publishing Industries	4.8	4.4	4.4	4.3	4.1	3.9	3.8	3.7
% Ch, Annual Rate	-31.8	-25.7	-1.6	-11.8	-18.6	-13.1	-13.8	-11.6
Other Information	60.5	61.3	61.5	61.6	62.1	63.2	63.2	63.3
% Ch, Annual Rate	-1.0	5.9	1.3	0.5	3.4	7.1	-0.2	0.9
Financial Activities	155.0	156.0	156.5	157.1	157.5	157.6	157.7	157.6
% Ch, Annual Rate	1.7	2.7	1.4	1.3	1.2	0.2	0.1	-0.2
Professional and Business Services	420.2	423.8	426.6	432.3	438.2	444.4	450.3	455.7
% Ch, Annual Rate	3.1	3.4	2.7	5.4	5.6	5.8	5.4	4.9
Education and Health Services	487.2	489.7	493.5	495.5	496.6	498.9	500.0	501.0
% Ch, Annual Rate	3.1	2.0	3.1	1.7	0.8	1.9	0.9	0.8
Leisure and Hospitality	338.1	339.8	342.0	343.5	344.8	345.2	345.7	346.2
% Ch, Annual Rate	3.4	2.1	2.6	1.8	1.4	0.5	0.5	0.6
Other Services	122.0	122.4	123.2	123.7	124.2	124.6	125.0	125.4
% Ch, Annual Rate	1.7	1.4	2.5	1.8	1.5	1.4	1.4	1.3
Federal Government	74.7	75.4	75.5	75.6	75.7	75.8	75.9	76.0
% Ch, Annual Rate	-0.8	3.8	0.6	0.6	0.6	0.6	0.5	0.5
State and Local Government	514.5	515.9	517.2	518.9	520.9	523.0	525.0	526.9
% Ch, Annual Rate	1.7	1.0	1.0	1.3	1.6	1.6	1.5	1.5

Table A2.4 (continued)

Washington Nonagricultural Employment by Industry (Thousands)

Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Nonfarm Payroll Employment	3,499.3	3,516.6	3,521.7	3,529.7	3,538.8	3,547.1	3,554.4	3,561.4
% Ch, Annual Rate	1.2	2.0	0.6	0.9	1.0	0.9	0.8	0.8
Manufacturing	292.6	292.9	293.4	294.0	294.6	295.2	295.6	295.9
% Ch, Annual Rate	0.8	0.5	0.7	0.8	0.8	0.8	0.6	0.4
Durable Manufacturing	205.0	205.3	205.7	206.1	206.5	207.0	207.4	207.6
% Ch, Annual Rate	1.1	0.7	0.7	0.7	0.9	0.9	0.7	0.5
Wood Products	13.5	13.6	13.6	13.7	13.8	13.9	13.9	13.9
% Ch, Annual Rate	2.6	2.3	2.2	2.4	2.2	2.1	1.0	0.1
Primary and Fabricated Metals	25.8	25.9	26.0	26.0	26.0	26.1	26.1	26.1
% Ch, Annual Rate	1.8	1.1	0.9	0.5	0.5	0.9	0.4	0.5
Computer and Electronic Products	21.4	21.5	21.5	21.5	21.6	21.8	21.8	21.9
% Ch, Annual Rate	2.1	1.2	0.3	0.9	2.1	2.2	1.6	0.9
Machinery and Electrical Equipment	23.5	23.7	23.9	24.1	24.4	24.6	24.8	25.0
% Ch, Annual Rate	4.5	3.1	3.9	4.0	4.3	3.7	3.3	2.8
Aerospace	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Transportation Equip.	9.2	9.1	9.0	8.9	8.8	8.7	8.7	8.6
% Ch, Annual Rate	-3.3	-5.1	-4.9	-3.7	-3.2	-2.9	-2.5	-2.9
Other Durables	29.6	29.7	29.8	29.9	29.9	30.0	30.1	30.1
% Ch, Annual Rate	0.7	0.9	1.0	1.0	0.9	0.9	0.8	0.8
Nondurable Manufacturing	87.6	87.6	87.7	87.9	88.1	88.2	88.3	88.3
% Ch, Annual Rate	0.2	0.1	0.7	0.8	0.7	0.6	0.4	0.1
Food Manufacturing	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.4
% Ch, Annual Rate	-0.2	-0.7	0.2	0.2	0.0	0.0	-0.1	-0.6
Paper and Paper Products	7.5	7.5	7.4	7.4	7.4	7.4	7.3	7.3
% Ch, Annual Rate	-2.3	-1.9	-1.4	-1.1	-1.0	-1.0	-1.3	-1.8
Other Nondurables	39.5	39.7	39.8	40.0	40.2	40.3	40.4	40.5
% Ch, Annual Rate	1.1	1.3	1.5	1.7	1.6	1.5	1.3	1.1
Natural Resources and Mining	6.8	6.8	6.9	6.9	6.9	6.9	7.0	7.0
% Ch, Annual Rate	2.5	2.6	1.5	1.5	1.5	1.2	0.9	0.8
Construction	214.7	215.1	215.1	215.2	215.0	214.8	214.7	214.6
% Ch, Annual Rate	0.0	0.8	0.1	0.2	-0.3	-0.3	-0.3	-0.1
Trade, Transportation, and Utilities	654.7	655.4	656.4	656.1	656.0	656.1	655.9	655.6
% Ch, Annual Rate	0.4	0.4	0.6	-0.2	0.0	0.0	-0.1	-0.2
Wholesale Trade	140.3	140.4	140.5	140.6	140.8	140.8	140.9	141.0
% Ch, Annual Rate	0.2	0.3	0.5	0.2	0.4	0.2	0.2	0.2
Retail Trade	406.4	407.1	408.0	407.6	407.5	407.5	407.4	407.1
% Ch, Annual Rate	0.7	0.7	0.9	-0.4	-0.2	0.1	-0.2	-0.3
Electronic Shopping and Mail-Order	64.6	65.4	66.1	66.7	67.3	67.9	68.5	69.0
% Ch	5.1	4.7	4.3	4.0	3.7	3.5	3.3	3.1
Other Retail Trade	341.8	341.8	341.9	340.9	340.1	339.6	338.9	338.1
% Ch	-0.2	-0.1	0.2	-1.2	-0.9	-0.6	-0.8	-1.0
Trans., Warehousing, and Utilities	108.0	108.0	107.9	107.8	107.8	107.8	107.7	107.6
% Ch, Annual Rate	-0.2	-0.3	-0.1	-0.3	0.0	-0.3	-0.3	-0.3
Information	134.0	134.9	136.0	137.1	138.3	139.3	140.0	140.5
% Ch, Annual Rate	4.0	2.7	3.3	3.1	3.6	3.1	1.9	1.5
Software Publishers	66.0	66.2	66.5	66.8	67.1	67.3	67.6	67.9
% Ch, Annual Rate	1.6	1.5	1.7	1.6	1.8	1.7	1.8	1.8
Other Publishing Industries	3.6	3.5	3.3	3.2	3.1	3.1	3.0	2.9
% Ch, Annual Rate	-11.6	-12.2	-11.3	-12.0	-11.2	-11.7	-11.5	-11.6
Other Information	64.5	65.2	66.2	67.0	68.1	68.9	69.4	69.7
% Ch, Annual Rate	7.6	4.8	5.9	5.4	6.3	5.2	2.6	1.8
Financial Activities	157.4	157.2	157.3	157.2	156.8	156.1	155.6	155.3
% Ch, Annual Rate	-0.4	-0.5	0.2	-0.2	-1.1	-1.7	-1.2	-0.9
Professional and Business Services	459.8	463.6	467.1	470.7	474.3	477.2	479.9	482.4
% Ch, Annual Rate	3.6	3.3	3.1	3.1	3.1	2.5	2.3	2.1
Education and Health Services	501.4	502.5	504.0	505.2	506.5	507.5	508.5	509.6
% Ch, Annual Rate	0.3	0.9	1.2	0.9	1.0	0.8	0.8	0.9
Leisure and Hospitality	346.6	347.1	348.0	349.0	349.3	350.3	351.2	352.0
% Ch, Annual Rate	0.5	0.5	1.1	1.2	0.4	1.0	1.1	0.9
Other Services	125.8	126.2	126.6	126.9	127.3	127.6	128.0	128.3
% Ch, Annual Rate	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.0
Federal Government	76.6	83.9	77.8	76.4	76.5	76.5	76.6	76.7
% Ch, Annual Rate	3.2	43.5	-26.1	-6.9	0.4	0.4	0.4	0.4
State and Local Government	528.9	530.9	533.1	535.2	537.3	539.3	541.4	543.4
% Ch, Annual Rate	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5

Table A2.4 (continued)

Washington Nonagricultural Employment by Industry (Thousands)

Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Nonfarm Payroll Employment	3,568.2	3,574.8	3,581.3	3,587.6	3,593.4	3,598.6	3,603.2	3,607.5
% Ch, Annual Rate	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5
Manufacturing	296.2	296.5	296.9	297.3	297.6	297.9	298.0	298.1
% Ch, Annual Rate	0.4	0.4	0.5	0.6	0.4	0.4	0.2	0.1
Durable Manufacturing	207.9	208.2	208.5	208.8	209.1	209.3	209.3	209.3
% Ch, Annual Rate	0.5	0.5	0.7	0.7	0.4	0.3	0.1	0.1
Wood Products	14.0	14.0	14.0	14.1	14.1	14.1	14.0	14.0
% Ch, Annual Rate	1.2	0.9	1.0	1.3	0.5	-0.1	-1.4	-1.5
Primary and Fabricated Metals	26.2	26.2	26.3	26.4	26.4	26.5	26.5	26.5
% Ch, Annual Rate	0.6	0.8	1.1	1.2	0.8	0.7	0.3	0.1
Computer and Electronic Products	21.9	22.0	22.0	22.0	22.0	22.0	21.9	21.9
% Ch, Annual Rate	1.0	0.6	0.8	0.2	-0.5	-0.8	-0.6	-0.6
Machinery and Electrical Equipment	25.1	25.3	25.5	25.7	25.9	26.1	26.2	26.4
% Ch, Annual Rate	2.4	3.1	3.4	3.5	3.0	2.8	2.1	2.1
Aerospace	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
% Ch, Annual Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Transportation Equip.	8.5	8.4	8.4	8.3	8.3	8.2	8.2	8.1
% Ch, Annual Rate	-3.8	-4.4	-3.6	-2.7	-2.0	-1.7	-2.6	-2.5
Other Durables	30.2	30.2	30.3	30.4	30.4	30.4	30.5	30.5
% Ch, Annual Rate	0.8	0.8	0.8	0.7	0.5	0.5	0.4	0.4
Nondurable Manufacturing	88.3	88.3	88.4	88.5	88.6	88.6	88.7	88.8
% Ch, Annual Rate	0.1	0.1	0.2	0.4	0.4	0.4	0.3	0.2
Food Manufacturing	40.4	40.3	40.3	40.3	40.3	40.3	40.3	40.3
% Ch, Annual Rate	-0.6	-0.6	-0.4	-0.1	0.0	0.1	0.0	-0.1
Paper and Paper Products	7.3	7.3	7.2	7.2	7.2	7.1	7.1	7.1
% Ch, Annual Rate	-1.8	-1.8	-1.7	-1.5	-1.5	-1.6	-1.9	-2.1
Other Nondurables	40.7	40.8	40.9	41.0	41.1	41.2	41.3	41.4
% Ch, Annual Rate	1.1	1.1	1.1	1.2	1.1	1.1	1.0	0.9
Natural Resources and Mining	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
% Ch, Annual Rate	0.9	0.6	0.7	0.7	0.4	0.0	-0.3	-0.1
Construction	214.5	214.3	214.0	213.6	213.2	212.6	211.9	211.1
% Ch, Annual Rate	-0.3	-0.4	-0.5	-0.7	-0.9	-1.1	-1.3	-1.5
Trade, Transportation, and Utilities	655.0	654.6	654.3	654.2	653.8	653.6	653.4	653.2
% Ch, Annual Rate	-0.4	-0.3	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1
Wholesale Trade	141.1	141.2	141.3	141.4	141.5	141.6	141.6	141.7
% Ch, Annual Rate	0.4	0.2	0.3	0.2	0.4	0.1	0.1	0.1
Retail Trade	406.3	405.9	405.6	405.5	405.0	404.9	404.8	404.7
% Ch, Annual Rate	-0.7	-0.4	-0.3	-0.1	-0.5	-0.1	-0.1	-0.1
Electronic Shopping and Mail-Order	69.5	70.0	70.4	70.9	71.3	71.8	72.2	72.6
% Ch	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3
Other Retail Trade	336.9	336.0	335.2	334.6	333.7	333.1	332.6	332.1
% Ch	-1.5	-1.1	-0.9	-0.7	-1.1	-0.7	-0.6	-0.6
Trans., Warehousing, and Utilities	107.5	107.5	107.4	107.3	107.3	107.2	107.0	106.9
% Ch, Annual Rate	-0.1	-0.3	-0.3	-0.3	-0.2	-0.4	-0.5	-0.5
Information	141.1	141.6	142.0	142.4	142.9	143.1	143.4	143.5
% Ch, Annual Rate	1.7	1.2	1.3	1.2	1.2	0.8	0.6	0.4
Software Publishers	68.3	68.6	68.9	69.2	69.5	69.9	70.2	70.5
% Ch, Annual Rate	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.8
Other Publishing Industries	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.2
% Ch, Annual Rate	-10.7	-11.6	-11.6	-11.7	-11.5	-12.6	-13.1	-13.5
Other Information	70.1	70.3	70.5	70.7	70.8	70.9	70.9	70.8
% Ch, Annual Rate	2.1	1.2	1.2	1.1	0.9	0.3	-0.1	-0.4
Financial Activities	155.0	154.6	154.2	153.7	153.5	153.0	152.6	152.2
% Ch, Annual Rate	-0.7	-1.0	-1.1	-1.1	-0.7	-1.3	-1.1	-1.1
Professional and Business Services	485.3	488.2	491.0	493.6	496.6	499.1	501.4	503.7
% Ch, Annual Rate	2.5	2.3	2.3	2.2	2.4	2.0	1.8	1.8
Education and Health Services	511.0	512.2	513.3	514.4	515.7	516.8	517.9	519.0
% Ch, Annual Rate	1.1	0.9	0.9	0.8	1.0	0.8	0.9	0.9
Leisure and Hospitality	352.2	352.8	353.4	353.9	353.8	354.1	354.4	354.7
% Ch, Annual Rate	0.2	0.7	0.6	0.6	-0.1	0.3	0.4	0.4
Other Services	128.6	128.9	129.2	129.5	129.7	130.0	130.2	130.4
% Ch, Annual Rate	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.7
Federal Government	76.8	76.8	76.9	76.9	77.0	77.0	77.1	77.1
% Ch, Annual Rate	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
State and Local Government	545.4	547.4	549.2	551.0	552.7	554.4	556.0	557.5
% Ch, Annual Rate	1.5	1.4	1.3	1.3	1.3	1.2	1.1	1.1

Table A3.1

U.S. Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Personal Income	15,928.7	16,429.1	17,104.5	17,932.3	18,765.3	19,617.6	20,518.4	21,468.1
% Ch	2.4	3.1	4.1	4.8	4.6	4.5	4.6	4.6
Total Wage and Salary Disbursements	8,085.2	8,353.2	8,752.4	9,160.4	9,596.1	10,046.3	10,523.2	11,020.6
% Ch	2.9	3.3	4.8	4.7	4.8	4.7	4.7	4.7
Nonwage Personal Income	7,843.5	8,075.9	8,352.0	8,771.9	9,169.2	9,571.3	9,995.2	10,447.5
% Ch	1.9	3.0	3.4	5.0	4.5	4.4	4.4	4.5
Supplements to Wages and Salaries	1,893.4	1,956.1	2,016.0	2,104.5	2,204.3	2,296.6	2,388.2	2,488.3
% Ch	2.4	3.3	3.1	4.4	4.7	4.2	4.0	4.2
Proprietor's Income	1,341.9	1,386.0	1,445.8	1,568.8	1,647.1	1,686.2	1,720.5	1,752.7
% Ch	1.8	3.3	4.3	8.5	5.0	2.4	2.0	1.9
Farm	43.2	35.1	34.1	53.5	72.1	71.0	68.3	70.7
% Ch	...	...	...	...	...	...	...	...
Nonfarm	1,298.7	1,350.9	1,411.7	1,515.4	1,575.0	1,615.2	1,652.2	1,682.0
% Ch	2.7	4.0	4.5	7.3	3.9	2.6	2.3	1.8
Less: Contribution For Govt. Soc. Ins.	1,245.3	1,302.6	1,357.9	1,407.8	1,469.7	1,535.4	1,606.0	1,680.4
% Ch	3.1	4.6	4.2	3.7	4.4	4.5	4.6	4.6
Dividends/Int./Rent	3,085.1	3,186.3	3,310.6	3,408.8	3,537.4	3,721.4	3,933.4	4,151.4
% Ch	1.2	3.3	3.9	3.0	3.8	5.2	5.7	5.5
Transfer Payments	2,768.4	2,850.1	2,937.5	3,097.6	3,250.0	3,402.5	3,559.1	3,735.5
% Ch	3.1	3.0	3.1	5.4	4.9	4.7	4.6	5.0

Table A3.2

U.S. Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Personal Income	16,839.8	17,004.2	17,178.0	17,395.8	17,632.0	17,828.6	18,030.7	18,238.0
% Ch, Annual Rate	4.3	4.0	4.2	5.2	5.5	4.5	4.6	4.7
Total Wage and Salary Disbursements	8,612.4	8,697.9	8,797.7	8,901.6	9,009.9	9,107.6	9,209.5	9,314.7
% Ch, Annual Rate	5.7	4.0	4.7	4.8	5.0	4.4	4.5	4.6
Nonwage Personal Income	8,227.4	8,306.3	8,380.3	8,494.2	8,622.1	8,720.9	8,821.2	8,923.2
% Ch, Annual Rate	2.9	3.9	3.6	5.5	6.2	4.7	4.7	4.7
Supplements to Wages and Salaries	1,995.5	2,006.4	2,019.4	2,042.5	2,070.3	2,092.6	2,115.6	2,139.4
% Ch, Annual Rate	3.4	2.2	2.6	4.7	5.5	4.4	4.5	4.6
Proprietor's Income	1,420.0	1,433.1	1,448.7	1,481.4	1,519.0	1,555.4	1,587.2	1,613.5
% Ch, Annual Rate	4.9	3.7	4.4	9.3	10.6	9.9	8.4	6.8
Farm	29.8	32.9	35.4	38.4	43.1	49.8	57.0	64.0
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	1,390.2	1,400.2	1,413.3	1,443.0	1,476.0	1,505.7	1,530.3	1,549.6
% Ch, Annual Rate	4.9	2.9	3.8	8.7	9.4	8.3	6.7	5.1
Less: Contribution For Govt. Soc. Ins.	1,355.9	1,347.1	1,358.2	1,370.3	1,389.2	1,401.1	1,413.9	1,427.2
% Ch, Annual Rate	10.0	-2.6	3.3	3.6	5.7	3.5	3.7	3.8
Dividends/Int./Rent	3,259.1	3,289.3	3,329.9	3,364.2	3,374.5	3,393.8	3,418.0	3,449.1
% Ch, Annual Rate	2.6	3.8	5.0	4.2	1.2	2.3	2.9	3.7
Transfer Payments	2,908.7	2,924.5	2,940.5	2,976.3	3,047.6	3,080.3	3,114.2	3,148.4
% Ch, Annual Rate	5.0	2.2	2.2	5.0	9.9	4.4	4.5	4.5

Table A3.2 (continued)

U.S. Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Personal Income	18,459.4	18,673.7	18,862.5	19,065.5	19,295.0	19,508.8	19,724.4	19,942.1
% Ch, Annual Rate	4.9	4.7	4.1	4.4	4.9	4.5	4.5	4.5
Total Wage and Salary Disbursements	9,430.2	9,553.7	9,647.4	9,753.2	9,877.0	9,989.3	10,102.3	10,216.5
% Ch, Annual Rate	5.1	5.3	4.0	4.5	5.2	4.6	4.6	4.6
Nonwage Personal Income	9,029.2	9,120.0	9,215.1	9,312.3	9,418.0	9,519.4	9,622.1	9,725.6
% Ch, Annual Rate	4.8	4.1	4.2	4.3	4.6	4.4	4.4	4.4
Supplements to Wages and Salaries	2,168.3	2,195.7	2,215.8	2,237.5	2,265.0	2,286.2	2,307.2	2,328.0
% Ch, Annual Rate	5.5	5.1	3.7	4.0	5.0	3.8	3.7	3.7
Proprietor's Income	1,629.3	1,639.5	1,654.1	1,665.4	1,672.6	1,681.6	1,690.5	1,699.9
% Ch, Annual Rate	4.0	2.5	3.6	2.8	1.8	2.2	2.1	2.3
Farm	68.9	72.1	73.6	73.7	72.9	71.6	70.3	69.2
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	1,560.4	1,567.5	1,580.4	1,591.6	1,599.7	1,610.0	1,620.2	1,630.7
% Ch, Annual Rate	2.8	1.8	3.3	2.9	2.0	2.6	2.6	2.6
Less: Contribution For Govt. Soc. Ins.	1,448.1	1,464.1	1,476.3	1,490.1	1,512.9	1,527.8	1,542.8	1,558.0
% Ch, Annual Rate	6.0	4.5	3.4	3.8	6.3	4.0	4.0	4.0
Dividends/Int./Rent	3,482.9	3,517.0	3,553.6	3,596.3	3,644.1	3,694.8	3,747.0	3,799.8
% Ch, Annual Rate	4.0	4.0	4.2	4.9	5.4	5.7	5.8	5.8
Transfer Payments	3,196.8	3,231.9	3,267.9	3,303.3	3,349.3	3,384.6	3,420.3	3,455.9
% Ch, Annual Rate	6.3	4.5	4.5	4.4	5.7	4.3	4.3	4.2

Table A3.2 (continued)

U.S. Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Personal Income	20,184.9	20,406.0	20,629.7	20,853.1	21,111.5	21,348.8	21,586.1	21,825.9
% Ch, Annual Rate	5.0	4.5	4.5	4.4	5.0	4.6	4.5	4.5
Total Wage and Salary Disbursements	10,344.3	10,462.3	10,582.7	10,703.5	10,837.4	10,959.0	11,081.3	11,204.5
% Ch, Annual Rate	5.1	4.6	4.7	4.6	5.1	4.6	4.5	4.5
Nonwage Personal Income	9,840.5	9,943.7	10,047.0	10,149.6	10,274.0	10,389.7	10,504.8	10,621.4
% Ch, Annual Rate	4.8	4.3	4.2	4.1	5.0	4.6	4.5	4.5
Supplements to Wages and Salaries	2,355.0	2,376.8	2,399.2	2,422.0	2,451.5	2,475.4	2,500.2	2,525.9
% Ch, Annual Rate	4.7	3.7	3.8	3.9	5.0	4.0	4.1	4.2
Proprietor's Income	1,706.7	1,716.4	1,725.6	1,733.5	1,739.2	1,747.8	1,756.7	1,767.1
% Ch, Annual Rate	1.6	2.3	2.2	1.8	1.3	2.0	2.1	2.4
Farm	68.4	68.1	68.1	68.6	69.3	70.2	71.2	72.2
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	1,638.3	1,648.4	1,657.5	1,664.9	1,669.9	1,677.6	1,685.5	1,694.9
% Ch, Annual Rate	1.9	2.5	2.2	1.8	1.2	1.9	1.9	2.2
Less: Contribution For Govt. Soc. Ins.	1,581.9	1,597.8	1,614.0	1,630.3	1,655.6	1,672.1	1,688.7	1,705.4
% Ch, Annual Rate	6.3	4.1	4.1	4.1	6.4	4.0	4.0	4.0
Dividends/Int./Rent	3,852.3	3,906.1	3,960.4	4,014.8	4,064.5	4,123.4	4,180.8	4,237.1
% Ch, Annual Rate	5.6	5.7	5.7	5.6	5.0	5.9	5.7	5.5
Transfer Payments	3,508.5	3,542.2	3,575.9	3,609.7	3,674.5	3,715.2	3,755.7	3,796.7
% Ch, Annual Rate	6.2	3.9	3.9	3.8	7.4	4.5	4.4	4.4

Table A3.3

Washington Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2016	2017	2018	2019	2020	2021	2022	2023
Personal Income	397.772	420.120	444.554	467.693	491.377	516.019	541.969	569.146
% Ch	4.7	5.6	5.8	5.2	5.1	5.0	5.0	5.0
Total Wage and Salary Disbursements	203.613	218.795	234.123	246.252	259.196	272.278	285.942	300.217
% Ch	6.1	7.5	7.0	5.2	5.3	5.0	5.0	5.0
Manufacturing	21.735	21.719	23.063	23.873	24.929	26.057	27.248	28.491
% Ch	-0.3	-0.1	6.2	3.5	4.4	4.5	4.6	4.6
Durable Manufacturing	17.318	17.097	18.182	18.762	19.605	20.492	21.440	22.418
% Ch	-1.6	-1.3	6.3	3.2	4.5	4.5	4.6	4.6
Nondurable Manufacturing	4.417	4.622	4.882	5.111	5.325	5.565	5.808	6.073
% Ch	4.9	4.6	5.6	4.7	4.2	4.5	4.4	4.6
Nonmanufacturing	174.750	189.729	203.381	214.401	225.924	237.571	249.700	262.379
% Ch	7.1	8.6	7.2	5.4	5.4	5.2	5.1	5.1
Other Private Wages	1.197	1.289	1.409	1.462	1.516	1.570	1.624	1.678
% Ch	4.0	7.7	9.3	3.7	3.7	3.5	3.4	3.3
Farm Wages	1.813	1.880	1.976	2.082	2.195	2.308	2.425	2.545
% Ch	13.2	3.6	5.1	5.4	5.4	5.2	5.1	4.9
Military Wages	4.118	4.179	4.294	4.435	4.630	4.772	4.946	5.124
% Ch	0.2	1.5	2.8	3.3	4.4	3.1	3.6	3.6
Nonwage Personal Income	194.159	201.325	210.432	221.441	232.181	243.740	256.027	268.929
% Ch	3.2	3.7	4.5	5.2	4.9	5.0	5.0	5.0
Supplements to Wages and Salaries	46.494	49.182	51.162	53.699	56.488	59.043	61.551	64.231
% Ch	6.0	5.8	4.0	5.0	5.2	4.5	4.2	4.4
Proprietor's Income	29.803	30.441	31.494	33.541	34.763	35.509	36.212	36.806
% Ch	0.9	2.1	3.5	6.5	3.6	2.1	2.0	1.6
Farm	2.496	1.784	1.383	1.281	1.288	1.225	1.181	1.182
% Ch	...	...	...	...	...	...	...	...
Nonfarm	27.307	28.657	30.111	32.259	33.475	34.284	35.031	35.624
% Ch	1.9	4.9	5.1	7.1	3.8	2.4	2.2	1.7
Less: Contribution For Govt. Soc. Ins.	33.536	35.761	37.569	39.123	40.982	42.911	44.952	47.098
% Ch	4.2	6.6	5.1	4.1	4.8	4.7	4.8	4.8
Plus: Residence Adjustment	3.717	3.795	3.946	4.136	4.340	4.554	4.785	5.028
% Ch	5.1	2.1	4.0	4.8	4.9	4.9	5.1	5.1
Dividends/Int./Rent	88.021	91.879	96.047	99.666	104.123	110.151	116.961	123.908
% Ch	1.4	4.4	4.5	3.8	4.5	5.8	6.2	5.9
Transfer Payments	59.662	61.789	65.351	69.523	73.450	77.393	81.470	86.055
% Ch	5.6	3.6	5.8	6.4	5.6	5.4	5.3	5.6
State U.I. Benefits	0.982	0.964	0.866	0.585	0.648	0.762	0.921	1.093
% Ch	1.2	-1.8	-10.2	-32.4	10.8	17.6	20.8	18.7
Other Transfers	58.679	60.825	64.485	68.938	72.801	76.631	80.548	84.962
% Ch	5.7	3.7	6.0	6.9	5.6	5.3	5.1	5.5

Table A3.4

Washington Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2018:1	2018:2	2018:3	2018:4	2019:1	2019:2	2019:3	2019:4
Personal Income	436.867	441.608	446.840	452.902	459.365	464.865	470.389	476.154
% Ch, Annual Rate	7.9	4.4	4.8	5.5	5.8	4.9	4.8	5.0
Total Wage and Salary Disbursements	230.042	232.418	235.487	238.544	241.801	244.759	247.689	250.759
% Ch, Annual Rate	12.1	4.2	5.4	5.3	5.6	5.0	4.9	5.1
Manufacturing	23.314	22.719	22.967	23.253	23.510	23.734	23.987	24.259
% Ch, Annual Rate	23.8	-9.8	4.4	5.1	4.5	3.9	4.3	4.6
Durable Manufacturing	18.522	17.874	18.056	18.275	18.474	18.651	18.853	19.070
% Ch, Annual Rate	27.8	-13.3	4.1	4.9	4.4	3.9	4.4	4.7
Nondurable Manufacturing	4.793	4.844	4.911	4.978	5.036	5.083	5.135	5.190
% Ch, Annual Rate	9.9	4.4	5.6	5.6	4.8	3.8	4.1	4.4
Nonmanufacturing	199.091	202.041	204.825	207.568	210.374	213.065	215.696	218.467
% Ch, Annual Rate	10.9	6.1	5.6	5.5	5.5	5.2	5.0	5.2
Other Private Wages	1.394	1.402	1.414	1.427	1.442	1.456	1.468	1.481
% Ch, Annual Rate	7.5	2.2	3.6	3.8	4.2	3.7	3.5	3.6
Farm Wages	1.943	1.961	1.986	2.013	2.042	2.069	2.095	2.122
% Ch, Annual Rate	9.6	3.7	5.3	5.5	6.0	5.4	5.2	5.2
Military Wages	4.300	4.295	4.296	4.284	4.432	4.436	4.441	4.429
% Ch, Annual Rate	9.5	-0.5	0.0	-1.1	14.6	0.4	0.5	-1.1
Nonwage Personal Income	206.825	209.191	211.353	214.358	217.565	220.106	222.700	225.395
% Ch, Annual Rate	3.4	4.7	4.2	5.8	6.1	4.8	4.8	4.9
Supplements to Wages and Salaries	50.529	50.895	51.295	51.930	52.734	53.382	54.015	54.666
% Ch, Annual Rate	5.0	2.9	3.2	5.0	6.3	5.0	4.8	4.9
Proprietor's Income	31.097	31.300	31.507	32.071	32.726	33.336	33.847	34.254
% Ch, Annual Rate	4.1	2.6	2.7	7.4	8.4	7.7	6.3	4.9
Farm	1.478	1.407	1.346	1.300	1.277	1.274	1.281	1.294
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	29.619	29.893	30.161	30.771	31.449	32.062	32.566	32.960
% Ch, Annual Rate	5.8	3.8	3.6	8.3	9.1	8.0	6.4	4.9
Less: Contribution For Govt. Soc. Ins.	37.404	37.266	37.619	37.985	38.557	38.929	39.304	39.701
% Ch, Annual Rate	11.1	-1.5	3.8	4.0	6.2	3.9	3.9	4.1
Plus: Residence Adjustment	3.877	3.922	3.969	4.017	4.066	4.110	4.158	4.208
% Ch, Annual Rate	4.2	4.7	4.9	5.0	5.0	4.4	4.7	4.9
Dividends/Int./Rent	94.257	95.330	96.704	97.898	98.388	99.137	100.027	101.114
% Ch, Annual Rate	3.4	4.6	5.9	5.0	2.0	3.1	3.6	4.4
Transfer Payments	64.470	65.010	65.497	66.426	68.208	69.070	69.958	70.855
% Ch, Annual Rate	6.1	3.4	3.0	5.8	11.2	5.2	5.2	5.2
State U.I. Benefits	0.956	0.956	0.847	0.704	0.617	0.577	0.568	0.578
% Ch, Annual Rate	-5.2	0.0	-38.5	-52.3	-40.8	-23.7	-6.1	7.8
Other Transfers	63.514	64.054	64.651	65.723	67.591	68.493	69.390	70.276
% Ch, Annual Rate	6.3	3.4	3.8	6.8	11.9	5.4	5.3	5.2

Table A3.4 (continued)

Washington Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2020:1	2020:2	2020:3	2020:4	2021:1	2021:2	2021:3	2021:4
Personal Income	482.498	488.737	494.168	500.104	506.745	512.903	519.096	525.331
% Ch, Annual Rate	5.4	5.3	4.5	4.9	5.4	5.0	4.9	4.9
Total Wage and Salary Disbursements	254.268	257.948	260.714	263.852	267.486	270.678	273.868	277.082
% Ch, Annual Rate	5.7	5.9	4.4	4.9	5.6	4.9	4.8	4.8
Manufacturing	24.529	24.814	25.049	25.326	25.618	25.913	26.205	26.493
% Ch, Annual Rate	4.5	4.7	3.8	4.5	4.7	4.7	4.6	4.5
Durable Manufacturing	19.287	19.516	19.700	19.915	20.145	20.378	20.608	20.838
% Ch, Annual Rate	4.6	4.8	3.8	4.4	4.7	4.7	4.6	4.5
Nondurable Manufacturing	5.241	5.298	5.350	5.411	5.473	5.535	5.597	5.655
% Ch, Annual Rate	4.0	4.4	4.0	4.7	4.7	4.6	4.5	4.2
Nonmanufacturing	221.475	224.760	227.303	230.160	233.281	236.134	238.986	241.884
% Ch, Annual Rate	5.6	6.1	4.6	5.1	5.5	5.0	4.9	4.9
Other Private Wages	1.496	1.512	1.522	1.535	1.551	1.563	1.576	1.589
% Ch, Annual Rate	4.1	4.3	2.8	3.4	4.1	3.3	3.3	3.2
Farm Wages	2.153	2.184	2.208	2.235	2.266	2.294	2.322	2.349
% Ch, Annual Rate	5.8	6.0	4.4	5.0	5.8	5.0	4.9	4.9
Military Wages	4.615	4.678	4.632	4.597	4.770	4.774	4.779	4.767
% Ch, Annual Rate	17.9	5.5	-3.9	-3.0	15.9	0.3	0.4	-1.0
Nonwage Personal Income	228.230	230.789	233.454	236.251	239.259	242.226	245.228	248.249
% Ch, Annual Rate	5.1	4.6	4.7	4.9	5.2	5.1	5.1	5.0
Supplements to Wages and Salaries	55.492	56.253	56.800	57.407	58.189	58.765	59.330	59.889
% Ch, Annual Rate	6.2	5.6	3.9	4.3	5.6	4.0	3.9	3.8
Proprietor's Income	34.476	34.620	34.871	35.085	35.226	35.413	35.600	35.799
% Ch, Annual Rate	2.6	1.7	2.9	2.5	1.6	2.1	2.1	2.3
Farm	1.298	1.296	1.287	1.272	1.253	1.233	1.215	1.200
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	33.178	33.324	33.584	33.813	33.974	34.179	34.384	34.598
% Ch, Annual Rate	2.7	1.8	3.2	2.8	1.9	2.4	2.4	2.5
Less: Contribution For Govt. Soc. Ins.	40.331	40.817	41.181	41.598	42.268	42.696	43.124	43.556
% Ch, Annual Rate	6.5	4.9	3.6	4.1	6.6	4.1	4.1	4.1
Plus: Residence Adjustment	4.261	4.319	4.364	4.414	4.472	4.527	4.581	4.637
% Ch, Annual Rate	5.2	5.6	4.2	4.7	5.4	4.9	4.9	4.9
Dividends/Int./Rent	102.276	103.443	104.681	106.092	107.652	109.296	110.978	112.678
% Ch, Annual Rate	4.7	4.6	4.9	5.5	6.0	6.3	6.3	6.3
Transfer Payments	72.057	72.970	73.920	74.853	75.987	76.921	77.863	78.802
% Ch, Annual Rate	7.0	5.2	5.3	5.1	6.2	5.0	5.0	4.9
State U.I. Benefits	0.629	0.639	0.657	0.669	0.696	0.739	0.785	0.829
% Ch, Annual Rate	39.7	6.7	11.3	7.7	17.2	26.8	27.8	24.2
Other Transfers	71.428	72.331	73.263	74.184	75.290	76.182	77.078	77.973
% Ch, Annual Rate	6.7	5.2	5.3	5.1	6.1	4.8	4.8	4.7

Table A3.4 (continued)

Washington Personal Income by Component (Billions of Dollars)

Forecast 2018 to 2023

	2022:1	2022:2	2022:3	2022:4	2023:1	2023:2	2023:3	2023:4
Personal Income	532.354	538.735	545.184	551.603	559.011	565.790	572.529	579.253
% Ch, Annual Rate	5.5	4.9	4.9	4.8	5.5	4.9	4.8	4.8
Total Wage and Salary Disbursements	280.832	284.207	287.650	291.082	295.021	298.495	301.960	305.391
% Ch, Annual Rate	5.5	4.9	4.9	4.9	5.5	4.8	4.7	4.6
Manufacturing	26.789	27.088	27.400	27.716	28.031	28.342	28.645	28.946
% Ch, Annual Rate	4.5	4.5	4.7	4.7	4.6	4.5	4.4	4.3
Durable Manufacturing	21.074	21.313	21.561	21.812	22.059	22.302	22.537	22.773
% Ch, Annual Rate	4.6	4.6	4.7	4.7	4.6	4.5	4.3	4.2
Nondurable Manufacturing	5.715	5.775	5.838	5.904	5.972	6.040	6.108	6.174
% Ch, Annual Rate	4.3	4.3	4.5	4.6	4.7	4.6	4.6	4.4
Nonmanufacturing	245.114	248.144	251.228	254.313	257.708	260.825	263.940	267.041
% Ch, Annual Rate	5.4	5.0	5.1	5.0	5.4	4.9	4.9	4.8
Other Private Wages	1.604	1.617	1.630	1.643	1.659	1.671	1.684	1.696
% Ch, Annual Rate	3.9	3.3	3.3	3.2	3.8	3.1	3.0	2.9
Farm Wages	2.382	2.410	2.440	2.469	2.502	2.531	2.560	2.588
% Ch, Annual Rate	5.6	4.9	4.9	4.8	5.5	4.7	4.6	4.5
Military Wages	4.944	4.948	4.953	4.941	5.121	5.126	5.131	5.119
% Ch, Annual Rate	15.7	0.3	0.4	-1.0	15.4	0.3	0.4	-0.9
Nonwage Personal Income	251.523	254.528	257.535	260.521	263.990	267.296	270.569	273.862
% Ch, Annual Rate	5.4	4.9	4.8	4.7	5.4	5.1	5.0	5.0
Supplements to Wages and Salaries	60.659	61.247	61.849	62.451	63.274	63.904	64.547	65.198
% Ch, Annual Rate	5.2	3.9	4.0	4.0	5.4	4.0	4.1	4.1
Proprietor's Income	35.939	36.135	36.313	36.461	36.561	36.717	36.878	37.067
% Ch, Annual Rate	1.6	2.2	2.0	1.6	1.1	1.7	1.8	2.1
Farm	1.189	1.181	1.177	1.176	1.177	1.180	1.184	1.188
% Ch, Annual Rate	...	...	...	...	...	...	...	...
Nonfarm	34.750	34.954	35.136	35.286	35.384	35.538	35.694	35.879
% Ch, Annual Rate	1.8	2.4	2.1	1.7	1.1	1.7	1.8	2.1
Less: Contribution For Govt. Soc. Ins.	44.257	44.716	45.184	45.650	46.390	46.864	47.336	47.801
% Ch, Annual Rate	6.6	4.2	4.3	4.2	6.6	4.1	4.1	4.0
Plus: Residence Adjustment	4.698	4.755	4.814	4.873	4.937	4.997	5.057	5.119
% Ch, Annual Rate	5.3	5.0	5.0	5.0	5.4	4.9	4.9	5.0
Dividends/Int./Rent	114.366	116.090	117.825	119.563	121.155	123.022	124.837	126.617
% Ch, Annual Rate	6.1	6.2	6.1	6.0	5.4	6.3	6.0	5.8
Transfer Payments	80.120	81.018	81.918	82.823	84.453	85.520	86.586	87.662
% Ch, Annual Rate	6.9	4.6	4.5	4.5	8.1	5.2	5.1	5.1
State U.I. Benefits	0.867	0.903	0.938	0.977	1.021	1.070	1.120	1.163
% Ch, Annual Rate	19.5	17.8	16.4	17.9	18.9	20.6	20.4	16.2
Other Transfers	79.253	80.115	80.980	81.846	83.432	84.450	85.465	86.499
% Ch, Annual Rate	6.7	4.4	4.4	4.3	8.0	5.0	4.9	4.9

Table A4.1
Selected Inflation Indicators
(PCE Price Index 2009=100; CPI 1982-84=1)

	PCE Price Index*		U.S. CPI#		Seattle CPI+	
	Index	Percent Change	Index	Percent Change	Index	Percent Change
1971	23.3	4.3	0.405	4.2	0.382	2.1
1972	24.1	3.4	0.418	3.3	0.393	2.9
1973	25.4	5.4	0.444	6.3	0.418	6.4
1974	28.0	10.4	0.493	11.0	0.464	11.0
1975	30.3	8.4	0.538	9.1	0.511	10.2
1976	32.0	5.5	0.569	5.8	0.540	5.5
1977	34.1	6.5	0.606	6.5	0.583	8.0
1978	36.5	7.0	0.652	7.6	0.640	9.9
1979	39.7	8.9	0.726	11.3	0.709	10.8
1980	44.0	10.7	0.824	13.5	0.827	16.7
1981	47.9	8.9	0.909	10.4	0.916	10.8
1982	50.6	5.5	0.965	6.2	0.978	6.7
1983	52.7	4.3	0.996	3.2	0.993	1.5
1984	54.7	3.8	1.039	4.4	1.030	3.8
1985	56.7	3.5	1.076	3.5	1.056	2.5
1986	57.9	2.2	1.097	1.9	1.066	1.0
1987	59.7	3.0	1.136	3.6	1.092	2.4
1988	62.0	3.9	1.183	4.1	1.128	3.3
1989	64.6	4.3	1.239	4.8	1.181	4.7
1990	67.4	4.3	1.307	5.4	1.268	7.3
1991	69.7	3.3	1.362	4.2	1.341	5.8
1992	71.5	2.6	1.403	3.0	1.390	3.7
1993	73.3	2.5	1.445	3.0	1.429	2.8
1994	74.8	2.1	1.482	2.6	1.478	3.4
1995	76.4	2.1	1.524	2.8	1.522	3.0
1996	78.0	2.1	1.569	2.9	1.575	3.4
1997	79.3	1.7	1.605	2.3	1.630	3.5
1998	79.9	0.8	1.630	1.5	1.677	2.9
1999	81.1	1.5	1.666	2.2	1.728	3.0
2000	83.1	2.5	1.722	3.4	1.792	3.7
2001	84.7	1.9	1.770	2.8	1.857	3.6
2002	85.9	1.3	1.799	1.6	1.893	2.0
2003	87.6	2.0	1.840	2.3	1.924	1.6
2004	89.7	2.4	1.889	2.7	1.947	1.2
2005	92.3	2.9	1.953	3.4	2.002	2.8
2006	94.7	2.7	2.016	3.2	2.076	3.7
2007	97.1	2.5	2.073	2.9	2.157	3.9
2008	100.1	3.1	2.153	3.8	2.247	4.2
2009	100.0	-0.1	2.146	-0.3	2.260	0.6
2010	101.7	1.7	2.181	1.6	2.267	0.3
2011	104.1	2.5	2.249	3.1	2.328	2.7
2012	106.1	1.9	2.296	2.1	2.386	2.5
2013	107.5	1.3	2.330	1.5	2.416	1.2
2014	109.2	1.5	2.367	1.6	2.460	1.8
2015	109.5	0.3	2.370	0.1	2.494	1.4
2016	110.8	1.2	2.400	1.3	2.550	2.3
2017	112.7	1.7	2.451	2.1	2.627	3.0
Forecast						
2018	115.0	2.1	2.513	2.5	2.714	3.3
2019	117.3	1.9	2.562	1.9	2.775	2.2
2020	119.7	2.1	2.617	2.1	2.839	2.3
2021	122.1	2.0	2.671	2.1	2.904	2.3
2022	124.6	2.1	2.729	2.1	2.971	2.3
2023	127.2	2.1	2.787	2.2	3.040	2.3

* GDP Price Index for Personal Consumption Expenditures

Consumer Price Index for all Urban Consumers

+ Consumer Price Index for the Seattle-Tacoma-Bremerton, WA CMSA

Consumer Price Index and PCE Price Index values shown here are annual averages of seasonally adjusted quarterly data and may differ slightly from the annual values published by the Bureau of Labor Statistics and Bureau of Economic Analysis.

Table A4.2
Price Indexes for Gross Domestic Product
(2009=100)

	Services		Food		Fuels		Gasoline	
	Index	Percent Change	Index	Percent Change	Index	Percent Change	Index	Percent Change
1971	17.9	5.5	22.8	2.3	7.4	6.4	14.0	0.7
1972	18.7	4.2	23.9	4.8	7.5	0.6	14.2	1.3
1973	19.6	4.8	26.9	12.7	8.6	14.6	15.5	9.6
1974	21.3	8.5	31.0	15.2	13.6	58.9	21.0	35.1
1975	23.1	8.6	33.3	7.5	14.8	8.5	22.4	6.7
1976	24.7	6.9	34.0	1.9	15.9	7.3	23.3	4.2
1977	26.6	7.5	36.0	5.9	17.9	13.2	24.7	5.8
1978	28.6	7.8	39.4	9.6	19.0	5.7	25.8	4.3
1979	31.0	8.4	43.3	9.8	26.2	37.9	34.5	34.0
1980	34.2	10.3	46.9	8.4	36.7	40.4	47.9	38.8
1981	37.7	10.2	50.3	7.1	44.9	22.3	53.3	11.3
1982	40.6	7.8	51.6	2.6	44.1	-1.9	50.6	-5.1
1983	43.2	6.2	52.2	1.1	40.6	-7.8	48.9	-3.3
1984	45.4	5.2	53.7	3.0	41.5	2.2	48.2	-1.5
1985	47.7	5.0	54.3	1.1	39.9	-3.9	48.6	0.8
1986	49.6	4.1	55.6	2.4	31.2	-21.7	38.2	-21.5
1987	51.1	2.9	57.4	3.2	32.1	2.6	39.6	3.8
1988	53.5	4.8	59.1	3.0	32.0	0.0	40.0	0.8
1989	56.0	4.6	62.2	5.3	34.0	6.0	43.7	9.2
1990	58.5	4.5	65.2	4.9	40.9	20.4	49.7	13.8
1991	60.7	3.8	67.3	3.1	38.9	-4.8	49.1	-1.3
1992	62.8	3.5	67.8	0.8	37.3	-4.1	48.9	-0.4
1993	65.0	3.5	68.7	1.4	37.1	-0.7	48.4	-1.0
1994	66.8	2.7	69.9	1.7	36.4	-1.8	48.6	0.5
1995	68.6	2.7	71.4	2.2	36.1	-0.9	49.4	1.6
1996	70.5	2.7	73.6	3.1	40.9	13.3	52.4	6.1
1997	72.4	2.8	75.0	1.9	41.0	0.2	52.4	0.0
1998	73.9	2.1	75.9	1.3	36.3	-11.4	45.6	-12.9
1999	75.4	2.0	77.2	1.6	36.9	1.7	49.6	8.9
2000	77.5	2.8	79.0	2.3	54.1	46.6	63.4	27.8
2001	79.9	3.1	81.3	2.9	53.1	-2.0	61.2	-3.6
2002	82.0	2.6	82.5	1.5	47.3	-10.8	57.5	-6.0
2003	84.5	3.1	84.1	1.9	57.2	20.9	67.0	16.5
2004	87.1	3.0	86.7	3.1	66.6	16.4	78.8	17.6
2005	89.9	3.3	88.2	1.7	88.6	33.0	95.8	21.6
2006	93.0	3.4	89.7	1.7	100.7	13.7	108.0	12.8
2007	96.0	3.2	93.2	3.9	107.7	6.9	117.1	8.4
2008	98.9	3.1	98.9	6.1	146.0	35.6	136.6	16.6
2009	100.0	1.1	100.0	1.2	100.0	-31.5	100.0	-26.8
2010	101.7	1.7	100.3	0.3	117.0	17.0	118.2	18.2
2011	103.5	1.8	104.3	4.0	148.8	27.2	149.3	26.3
2012	105.8	2.2	106.7	2.3	150.7	1.3	154.7	3.6
2013	108.3	2.3	107.8	1.1	148.9	-1.2	149.7	-3.2
2014	110.9	2.5	109.8	1.8	148.2	-0.5	145.5	-2.8
2015	113.1	1.9	111.0	1.1	105.3	-29.0	107.0	-26.5
2016	115.9	2.5	109.9	-0.9	87.7	-16.7	95.3	-10.9
2017	118.6	2.3	109.8	-0.1	100.4	14.5	107.2	12.5
Forecast								
2018	121.8	2.7	110.5	0.6	116.0	15.5	123.0	14.7
2019	125.1	2.7	112.0	1.4	120.0	3.5	120.2	-2.3
2020	128.4	2.6	113.8	1.7	121.8	1.5	118.2	-1.7
2021	131.7	2.5	115.9	1.8	121.7	-0.1	114.7	-3.0
2022	135.0	2.5	117.6	1.5	122.6	0.8	112.4	-2.0
2023	138.2	2.4	119.4	1.5	124.5	1.5	110.9	-1.3

Table A5.1

Washington Resident Population and Components of Change*
(Thousands)

	<u>Population</u>	<u>Change</u>	<u>Percent Change</u>	<u>Births</u>	<u>Deaths</u>	<u>Net Migration</u>
1970	3413.2	16.2	0.5	59.9	30.0	-13.7
1971	3436.3	23.1	0.7	60.0	29.8	-7.1
1972	3430.3	-6.0	-0.2	53.1	30.4	-28.7
1973	3444.3	14.0	0.4	47.7	30.4	-3.3
1974	3508.7	64.4	1.9	48.2	29.9	46.1
1975	3567.9	59.2	1.7	50.1	30.3	39.4
1976	3634.9	67.0	1.9	51.4	30.2	45.8
1977	3715.4	80.5	2.2	54.2	29.1	55.4
1978	3836.2	120.8	3.3	57.3	30.4	93.9
1979	3979.2	143.0	3.7	60.2	30.2	113.0
1980	4132.2	153.0	3.8	65.4	31.3	118.9
1981	4229.3	97.1	2.4	68.2	31.8	60.8
1982	4276.5	47.3	1.1	70.1	31.7	8.9
1983	4307.2	30.7	0.7	69.5	32.5	-6.2
1984	4354.1	46.8	1.1	68.5	33.2	11.6
1985	4415.8	61.7	1.4	69.1	34.0	26.6
1986	4462.2	46.4	1.1	70.2	34.0	10.2
1987	4527.1	64.9	1.5	69.3	34.4	30.0
1988	4616.9	89.8	2.0	71.0	36.0	54.8
1989	4728.1	111.2	2.4	73.0	36.0	74.2
1990	4866.7	138.6	2.9	76.4	36.2	98.5
1991	5000.4	133.7	2.7	79.1	36.6	91.2
1992	5091.1	90.8	1.8	80.2	37.2	47.7
1993	5188.0	96.9	1.9	79.1	39.4	57.1
1994	5291.6	103.6	2.0	78.2	39.5	64.9
1995	5396.6	105.0	2.0	77.5	40.0	67.5
1996	5483.1	86.5	1.6	77.0	41.2	50.7
1997	5579.1	96.0	1.8	78.0	42.6	60.6
1998	5685.5	106.3	1.9	78.8	41.6	69.1
1999	5792.2	106.8	1.9	79.8	43.1	70.1
2000	5894.1	101.9	1.8	79.9	43.7	65.8
2001	5970.5	76.3	1.3	80.7	43.9	39.5
2002	6059.7	89.2	1.5	79.3	44.9	54.9
2003	6126.9	67.2	1.1	79.1	44.7	32.9
2004	6208.5	81.6	1.3	81.0	46.0	46.7
2005	6298.8	90.3	1.5	81.8	45.6	54.0
2006	6420.2	121.4	1.9	83.2	45.3	83.5
2007	6525.1	104.9	1.6	87.8	46.2	63.3
2008	6608.2	83.1	1.3	89.6	47.9	41.5
2009	6672.3	64.0	1.0	89.8	48.1	22.3
2010	6724.5	52.3	0.8	88.4	47.7	11.5
2011	6767.9	43.4	0.6	86.4	48.8	5.8
2012	6817.8	49.9	0.7	87.1	49.2	12.0
2013	6882.4	64.6	0.9	87.3	51.1	28.5
2014	6968.2	85.8	1.2	87.0	50.7	49.5
2015	7061.4	93.2	1.3	88.5	52.8	57.6
2016	7183.7	122.3	1.7	89.8	54.6	87.1
2017	7310.3	126.6	1.8	91.2	55.4	90.8
Forecast						
2018	7426.3	116.0	1.6	93.5	56.5	79.1
2019	7535.5	109.2	1.5	94.8	57.5	71.8
2020	7638.4	102.9	1.4	96.0	58.4	65.3
2021	7736.2	97.8	1.3	96.9	59.5	60.5
2022	7827.9	91.6	1.2	97.3	60.6	54.9
2023	7916.0	88.2	1.1	98.0	61.8	52.0

* As of April 1 of Each Year

Source: Office of Financial Management

Table A5.2
Washington Population*
 (Thousands)

	Actual					Forecast				
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Population	6968.2	7061.4	7183.7	7310.3	7426.3	7535.5	7638.4	7736.2	7827.9	7916.0
Percent Change	1.2	1.3	1.7	1.8	1.6	1.5	1.4	1.3	1.2	1.1
Age 17 and Under	1588.4	1602.8	1625.6	1649.6	1671.0	1691.4	1713.0	1733.4	1750.8	1766.4
Percent of Total	22.8	22.7	22.6	22.6	22.5	22.4	22.4	22.4	22.4	22.3
Age 6-18	1151.0	1162.2	1178.6	1194.9	1210.1	1223.5	1235.6	1250.1	1263.7	1275.4
Percent of Total	16.5	16.5	16.4	16.3	16.3	16.2	16.2	16.2	16.1	16.1
Age 18 and Over	5379.8	5458.7	5558.1	5660.7	5755.4	5844.1	5925.4	6002.8	6077.1	6149.6
Percent of Total	77.2	77.3	77.4	77.4	77.5	77.6	77.6	77.6	77.6	77.7
Age 21 and Over	5107.4	5187.1	5284.0	5382.7	5473.8	5560.3	5642.3	5721.1	5795.0	5863.5
Percent of Total	73.3	73.5	73.6	73.6	73.7	73.8	73.9	74.0	74.0	74.1
Age 20-34	1445.8	1458.8	1482.6	1506.7	1525.9	1543.7	1557.3	1568.7	1577.6	1584.1
Percent of Total	20.7	20.7	20.6	20.6	20.5	20.5	20.4	20.3	20.2	20.0
Age 18-64	4396.9	4431.0	4484.7	4539.0	4581.8	4618.8	4646.2	4671.2	4693.6	4714.2
Percent of Total	63.1	62.7	62.4	62.1	61.7	61.3	60.8	60.4	60.0	59.6
Age 65 and Over	982.8	1027.7	1073.4	1121.8	1173.6	1225.3	1279.2	1331.6	1383.4	1435.4
Percent of Total	14.1	14.6	14.9	15.3	15.8	16.3	16.7	17.2	17.7	18.1

* As of April 1 of Each Year

Source: Office of Financial Management

Table A6.1

Summary of National and State Indicators

Indicator	Latest Data	Indication*
U.S. Leading Index	May 2018	+
U.S. Real GDP Growth	1st quarter 2018	-
U.S. ISM Index	May 2018	+
U.S. Employment YOY%Δ	May 2018	unchanged
U.S. Unemployment Rate	May 2018	+
U.S. Consumer Confidence	June 2018	-
U.S. Consumer Sentiment	June 2018	+
U.S. Light Vehicle Sales	May 2018	-
U.S. CPI YOY%Δ	May 2018	-
U.S. Home Prices YOY%Δ	April 2018	-
S&P 500 Index	June 2018	+
WA Leading Index	May 2018	-
WA ISM-WW Index	May 2018	+
WA Employment YOY%Δ	May 2018	unchanged
WA Aerospace Empl. YOY%Δ	May 2018	+
WA Unemployment Rate	May 2018	+
WA Help Wanted Index	May 2018	-
WA Business Cycle Indicator	May 2018	+
WA Initial Unemploy. Claims	May 2018	+
WA Housing Permits	May 2018	-
WA Weekly Hours in Mfg.	May 2018	-
WA New Vehicle Registration	May 2018	-
WA In-Migration	May 2018	-
WA Exports-Total YOY%Δ	1st quarter 2018	+
WA Exports- w/o Trans. Equip. YOY%Δ	1st quarter 2018	+
Seattle CPI YOY%Δ	April 2018	unchanged
Seattle Home Prices YOY%Δ	April 2018	+
WA Construction Activity Index	May 2018	-

*Change from the previous reading

Table A6.2

Washington Business Indicators

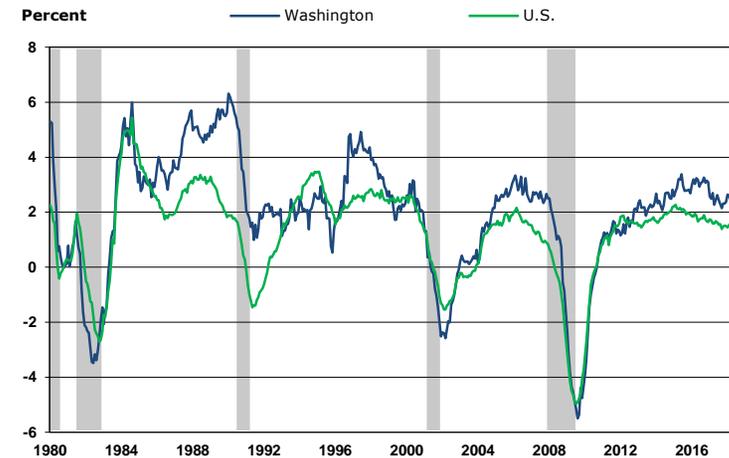
Historical Data

	WA Index of Leading Indicators	U.S. Index of Leading Indicators	WA State Business Cycle Indicator	WA State Construction Index	WA State Help Wanted Index	WA Purchasing Management Index	U.S. Purchasing Management Index
2014:01	114.3	92.0	44.2	95.0	118.2	63.5	51.8
2014:02	114.2	92.5	42.9	93.1	118.5	68.7	54.3
2014:03	114.8	93.4	43.5	93.9	118.6	63.6	54.4
2014:04	115.5	93.5	46.1	96.9	120.6	53.7	55.3
2014:05	115.7	94.0	46.7	95.9	118.7	59.6	55.6
2014:06	116.9	94.7	47.2	97.4	121.0	67.0	55.7
2014:07	117.0	95.2	48.6	97.4	121.3	50.1	56.4
2014:08	117.1	95.5	49.0	97.9	121.6	62.9	58.1
2014:09	116.9	96.1	49.0	98.8	114.3	60.3	56.1
2014:10	117.4	96.4	48.9	100.7	119.0	57.6	57.9
2014:11	118.1	96.8	51.2	101.6	128.0	63.1	57.6
2014:12	117.8	97.3	51.8	102.8	122.0	53.3	55.1
2015:01	117.5	97.4	52.7	98.8	127.6	66.6	53.5
2015:02	118.7	97.4	57.8	108.5	137.2	65.9	52.9
2015:03	118.1	97.9	57.5	100.6	138.8	64.1	51.5
2015:04	118.3	98.4	58.4	99.2	135.7	60.4	51.5
2015:05	118.6	98.8	58.7	98.2	139.0	60.3	52.8
2015:06	119.0	99.3	59.0	99.7	136.0	51.4	53.5
2015:07	118.7	99.1	60.0	99.8	141.0	53.6	52.7
2015:08	118.3	99.1	59.2	99.3	139.1	48.0	51.1
2015:09	117.1	99.0	58.2	95.1	126.6	48.0	50.2
2015:10	118.2	99.4	59.6	99.5	132.4	46.1	50.1
2015:11	118.4	99.8	60.2	100.3	134.3	50.0	48.6
2015:12	118.0	99.6	62.8	98.4	130.7	54.5	48.0
2016:01	117.6	99.3	64.6	100.9	128.7	57.2	48.2
2016:02	117.9	99.2	66.4	101.6	124.9	55.4	49.7
2016:03	118.7	99.2	64.3	105.1	128.9	55.7	51.7
2016:04	119.4	99.7	65.3	103.0	130.9	50.8	50.7
2016:05	120.4	99.5	67.8	106.3	148.2	49.2	51.0
2016:06	120.4	99.8	68.3	104.2	151.3	49.1	52.8
2016:07	120.7	100.2	69.0	102.9	156.3	50.8	52.3
2016:08	120.6	100.2	67.8	102.4	153.1	47.7	49.4
2016:09	121.0	100.4	68.2	107.0	143.4	51.4	51.7
2016:10	120.8	100.5	69.4	102.4	152.3	53.1	52.0
2016:11	120.5	100.7	71.0	103.5	148.8	53.3	53.5
2016:12	120.1	101.2	72.3	102.8	149.2	47.3	54.5
2017:01	120.7	101.8	71.1	102.3	152.5	54.2	56.0
2017:02	120.2	102.1	70.2	103.6	140.1	48.6	57.7
2017:03	121.0	102.6	72.4	102.5	143.4	59.2	57.2
2017:04	121.7	102.8	71.6	106.7	143.3	59.2	54.8
2017:05	121.7	103.2	73.5	100.4	149.2	45.0	54.9
2017:06	122.4	103.8	73.4	103.4	145.4	50.0	57.8
2017:07	122.7	104.1	73.7	104.5	139.5	47.0	56.3
2017:08	122.9	104.5	75.3	105.3	135.1	58.2	58.8
2017:09	123.1	104.5	77.1	101.0	140.4	57.5	60.8
2017:10	124.0	105.9	78.3	107.1	132.7	51.8	58.7
2017:11	123.1	106.3	81.1	97.2	134.7	65.0	58.2
2017:12	124.8	107.1	80.4	106.3	138.6	65.8	59.7
2018:01	124.1	107.8	79.5	100.3	136.8	60.8	59.1
2018:02	124.7	108.5	80.2	103.0	133.3	68.3	60.8
2018:03	125.9	108.9	81.9	110.6	137.4	68.0	59.3
2018:04	126.0	109.3	81.0	107.9	133.7	55.8	57.3
2018:05	124.5	109.5	82.0	99.7	128.0	61.7	58.7

Figure A7.1: Washington State Economic Indicators

Year-over-Year Employment Growth

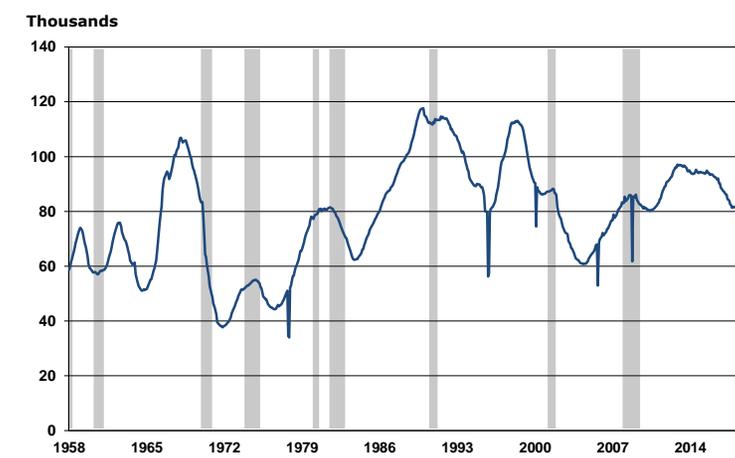
January 1980 to May 2018



* Bureau of Labor Statistics, WA State Employment Security, ERFC Kalman Filtered Data

Washington Aircraft and Parts Employment

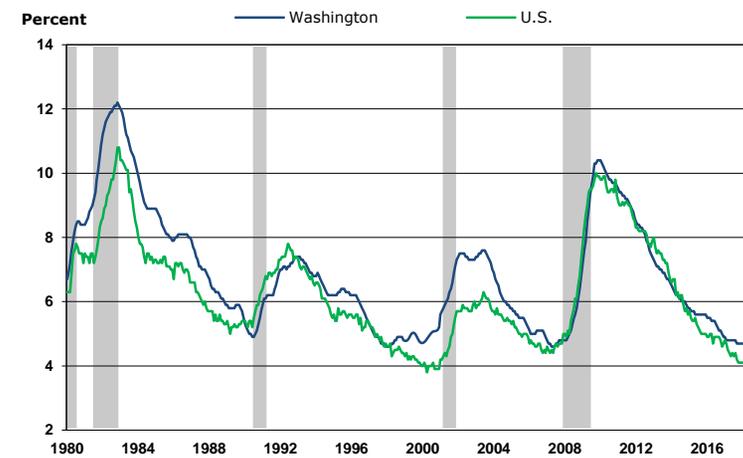
January 1958 to May 2018



* Source: Bureau of Labor Statistics, ERFC

Unemployment Rate, S.A.

January 1980 to May 2018



* Source: Bureau of Labor Statistics

Washington Business Cycle Indicator

January 1968 to May 2018



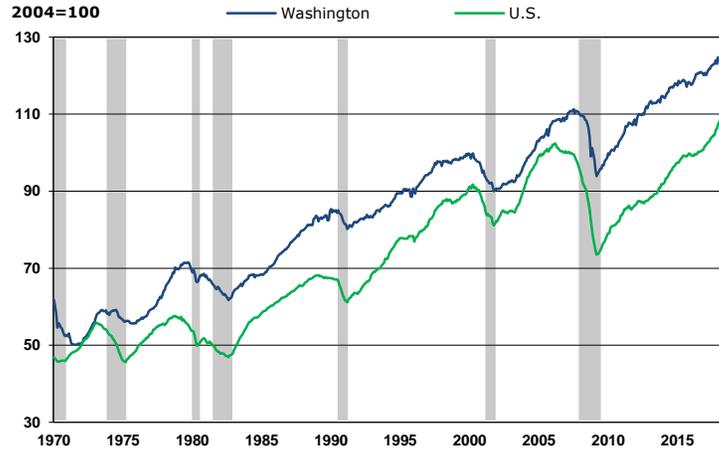
* Source: ERFC

* Shaded areas correspond with national recessions.
Appendix

Figure A7.2: Washington State Leading Indicators

The Washington and U.S. Indexes of Leading Indicators

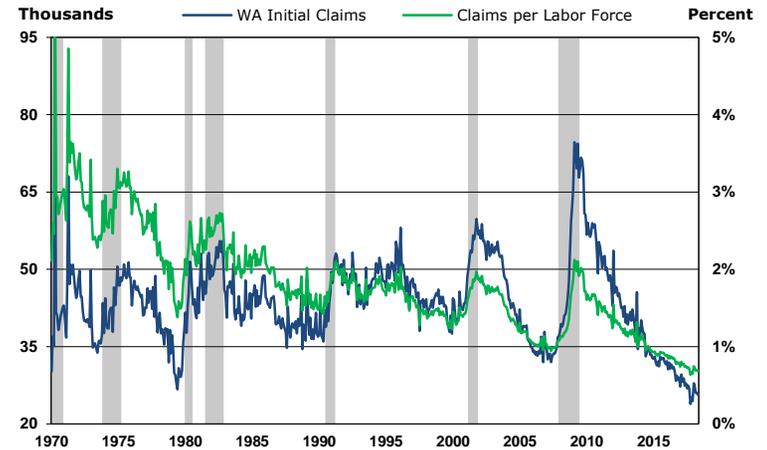
January 1970 to May 2018



* The Conference Board, ERFC

Washington Initial Claims for Unemployment Insurance

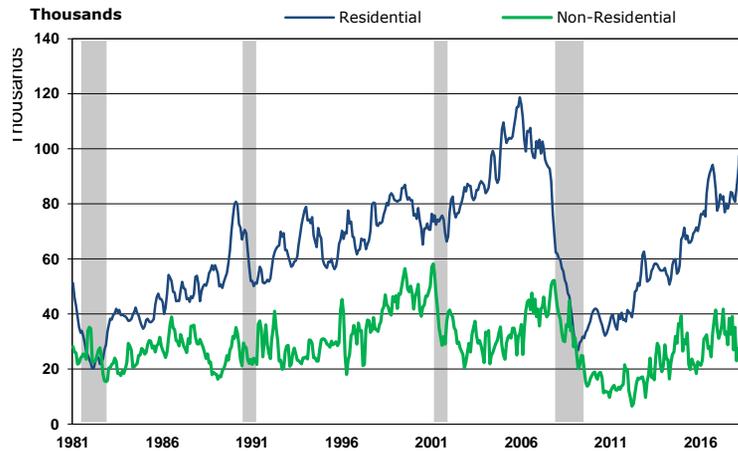
January 1970 to May 2018, S.A.



* Source: WA State Employment Security, ERFC

Square Footage of Construction Projects in WA State

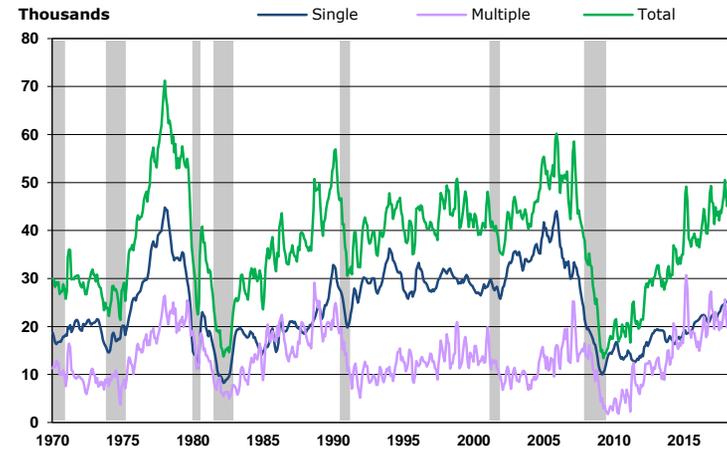
January 1981 to May 2018, 3mma, SAAR



* Source: McGraw-Hill Construction, ERFC

Housing Units Authorized in Washington State

January 1970 to May 2018, 3mma, SAAR



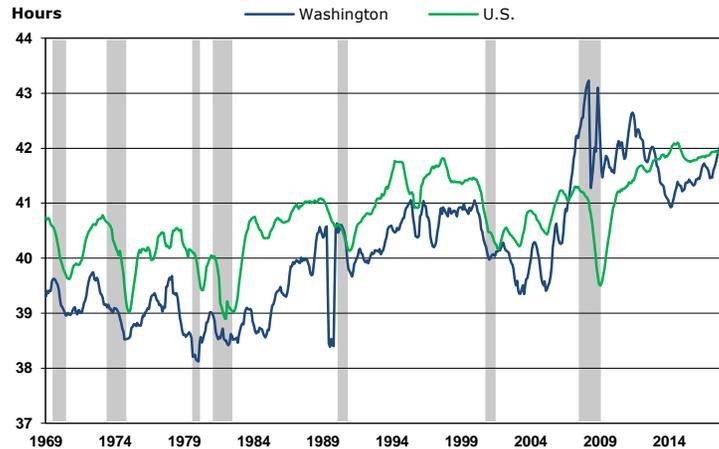
* Source: Census Bureau, ERFC

* Shaded areas correspond with national recessions.
Appendix

Figure A7.3: Other State Economic Indicators

Average Weekly Hours in Manufacturing

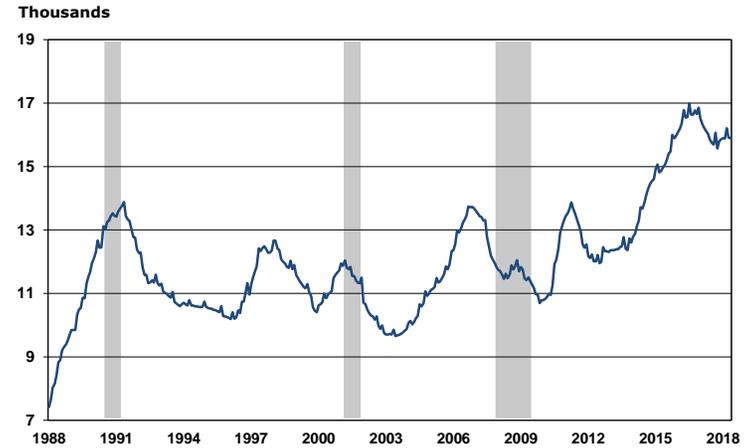
June 1969 to May 2018, 6-Mo. Moving Average, S.A.



* Bureau of Labor Statistics, ERFC

Washington Driver's License In-Migration

January 1988 to April 2018, 12-Month Moving Average



* Source: WA State Department of Licensing, ERFC

New Car and Truck Registrations in Washington

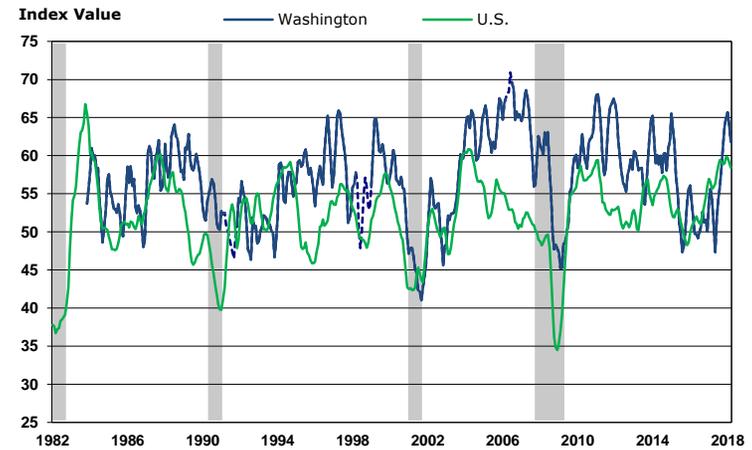
September 1970 to May 2018, 3-Month Moving Average, S.A.



* Source: WA State Department of Licensing, ERFC

Institute for Supply Management Index

March 1982 to May 2018, 3-Month Moving Average, S.A.



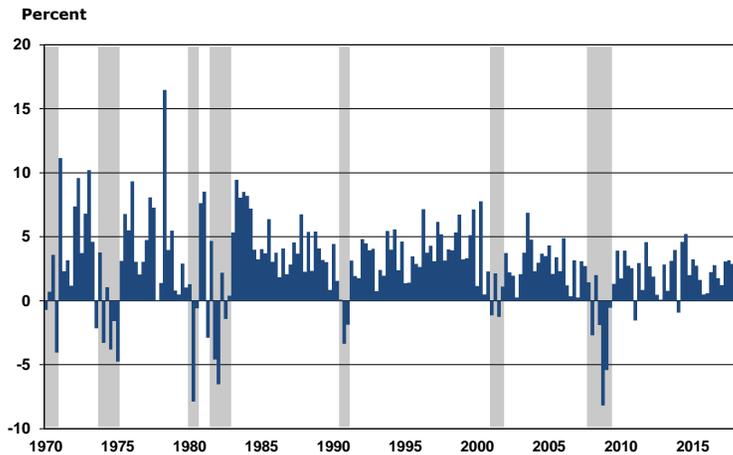
* Source: Institute for Supply Management, ISM-WW, ERFC

* Shaded areas correspond with national recessions.
Appendix

Figure A7.4: Other Economic Indicators

Quarterly U.S. Real GDP Growth

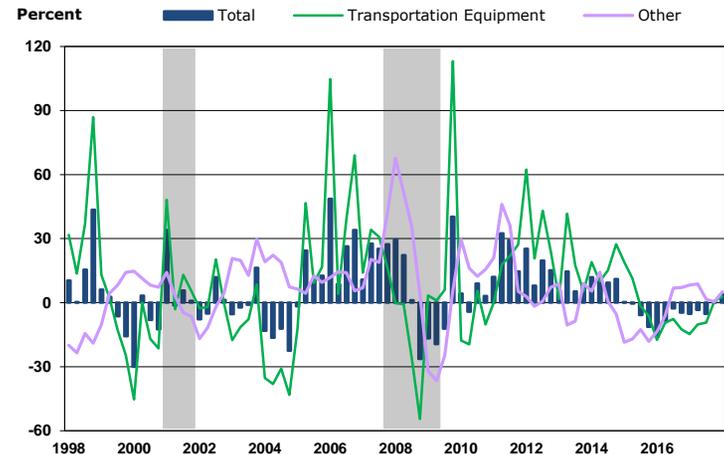
1970Q1 to 2018Q1, SAAR



* Source: Bureau of Economic Analysis

Washington State Export Composition

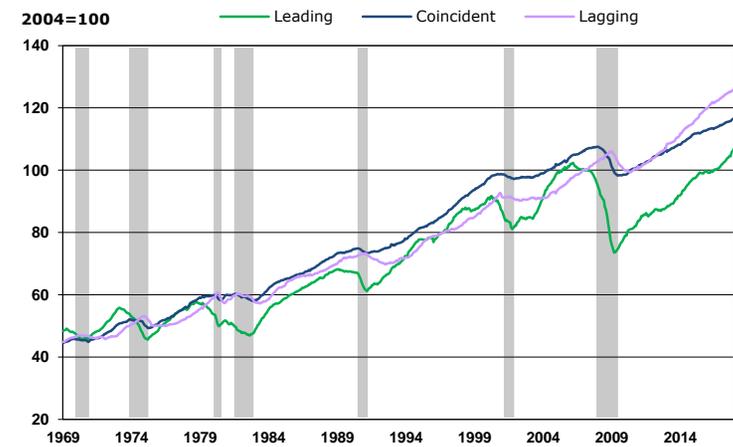
1998Q1 to 2018Q1, Year-over-year percent change



* Source: WISER

U.S. Economic Indicators

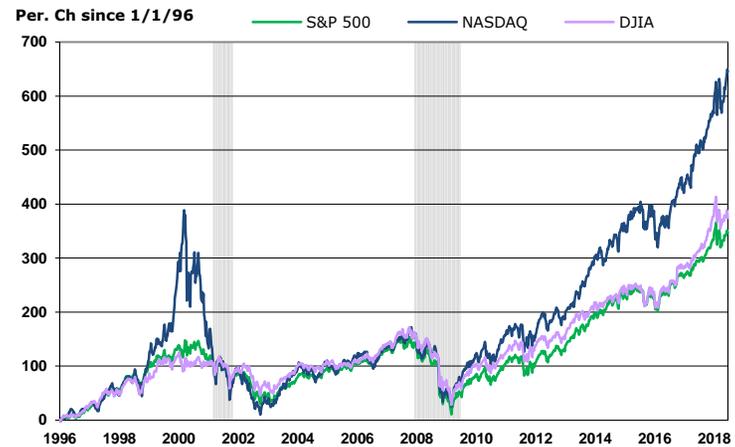
January 1969 to December 2017



* Source: The Conference Board

National Stock Indexes

January 1, 1996 to June 22, 2018



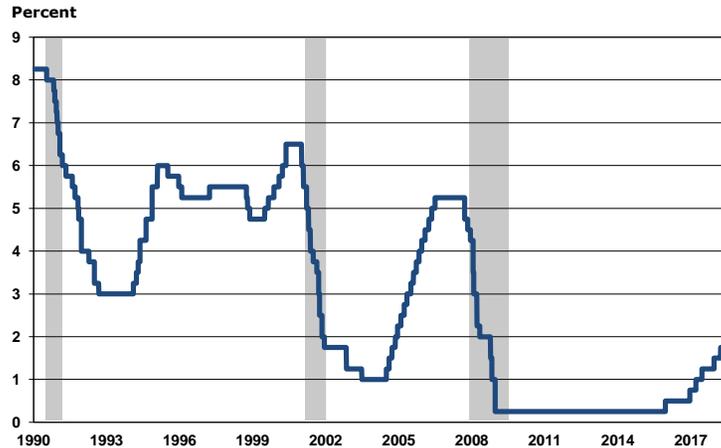
* Source: ERFC

* Shaded areas correspond with national recessions.
Appendix

Figure A7.4: Other Economic Indicators (continued...)

Federal Funds Target Rate

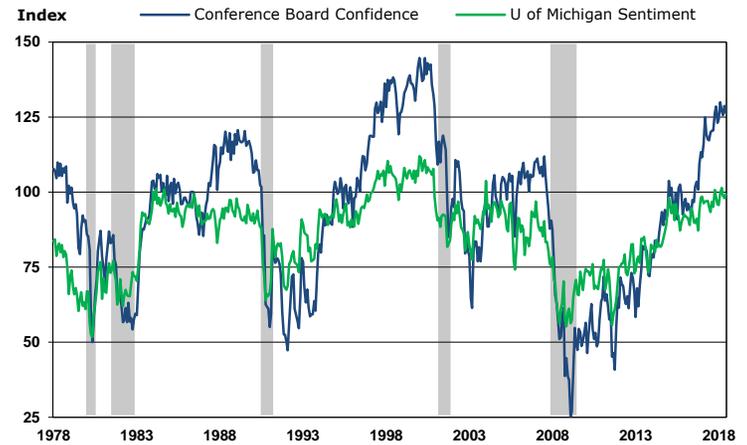
January 1, 1990 to June 28, 2018



* Federal Reserve

Consumer Confidence

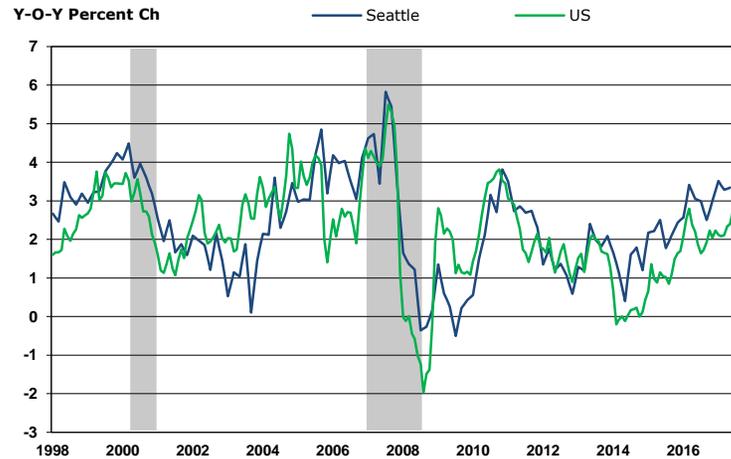
March 1978 to June 2018



* Source: The Conference Board, University of Michigan

Seattle vs U.S. CPI (All Urban Consumers)

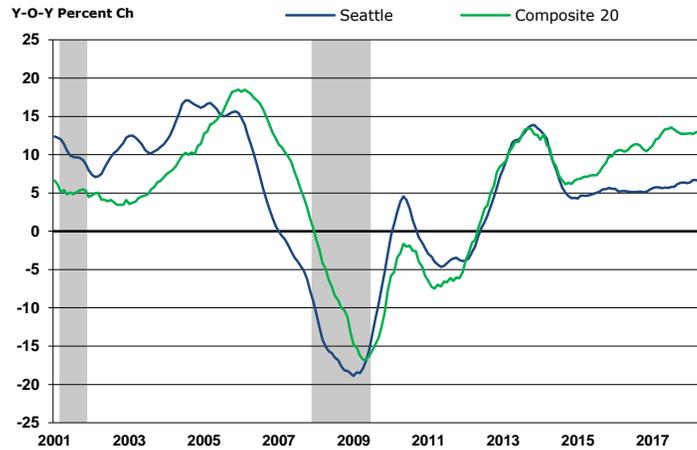
December 1998 to May 2018



* Source: Bureau of Labor Statistics

Case Shiller Home Price Index

January 2001 to April 2018, SA



* Source: Case Shiller, ERFC

* Shaded areas correspond with national recessions.
Appendix

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Glossary

Biennium: The state's two years budget cycle.

Cash Basis: Cash receipts received during a period. The Forecast Council forecasts revenues on a Cash and GAAP (Generally Accepted Accounting Principles) basis.

CPI: The Consumer Price Index for All Urban Consumers. The Bureau of Labor Statistics (BLS) updates the CPI monthly, surveying over 60,000 goods in 85 urban areas.

Tax Elasticity: A measure of how tax revenues respond to changes in personal income. If tax revenue elasticity is greater than one, a one percent change in personal income will be associated with more than a one percent increase in tax revenues. If elasticity is less than one, a one percent increase in personal income will be associated with less than a one percent increase in tax revenues.

Fiscal Year: The state's budget year. Washington State's fiscal year runs from July 1 through June 30. Fiscal year 2018, for example, ran from July 1, 2017 through June 30, 2018.

GAAP Basis: Generally Accepted Accounting Principles measure revenue in the period during which they accrue rather than the period in which they are received.
General Fund: Accounts for all financial resources and transactions not accounted for in another fund.

General Fund-State (GF-S) Revenue: Resources from state sources only, excludes federal monies. The general fund is the principal state fund supporting the operation of the state.

Implicit Price Deflator, PCE (IPD): The IPD for consumption is a by-product of the National Income and Product Accounts. It is derived by dividing current dollar (nominal) consumer expenditures by constant dollar (real) consumer expenditures.

Mortgage Rate: The average interest rate on 30-year conventional loan (as reported by Freddie Mac).

Near General Fund: All accounts included in the General Fund - State plus the Education Legacy Trust Account.

Non-Wage Income: Personal income other than from wages and salaries. The major components are: proprietor's income, transfer payments, and dividends, interest and rent.

Real GDP: Gross Domestic Production adjusted for the price level.

Revenue Act: Revenue Act taxes consist of the retail sales tax, use tax, business and occupation tax, public utility tax and tobacco products tax, plus penalty and interest payments associated with those taxes.

Personal Income: Income from wages and salaries; other labor income; proprietor's income; dividends, interest and rent; transfer payments; and a residence adjustment. It is reduced by employee contributions for social insurance.

Seasonally Adjusted: Adjusted for normal seasonal variations. Monthly statistics, such as the unemployment rate, are seasonally adjusted to make month-to-month comparisons possible.

Seasonally Adjusted Annual Rate: A rate for a given period that is typically less than one year, but that is computed as if the rate were for a full year and seasonally adjusted.

Nonfarm Payroll Employment: Civilian non-farm payroll employees. The self-employed, farm workers, members of the armed forces, private household employees, and workers on strike are excluded.