PRELIMINARY REPORT:

2019 TAX PREFERENCE PERFORMANCE REVIEWS

Aerospace Tax Preferences

LEGISLATIVE AUDITOR'S CONCLUSION:

The aerospace industry remains in Washington, offering wages and benefits above the state average. The preferences improved competitiveness by reducing the industry's effective tax rate by 50%. Employment has declined from its 2013 level, but it is unclear to what extent the preferences prevented greater job loss.

Updated August 21, 2019

Review focuses on nine tax preferences intended to benefit the aerospace industry

In 2013, the Legislature expanded a package of aerospace tax preferences that was initially enacted in 2003. The preferences include three preferential business and occupation (B&O) tax rates, two B&O tax credits, two sales and use tax exemptions, a property tax exemption, and a leasehold excise tax exemption. Detail is provided in Appendix A.

Estimated Biennial Beneficiary Savings
$569 million in the 2021-23 Biennium

Tax Types
Business and Occupation Tax, Sales and Use Tax, Leasehold Excise Tax, Property Tax
Multiple RCWs
Applicable Statutes

To claim a preference, a business must perform at least one of these activities:

1. Manufacture commercial airplanes.
2. Develop aerospace products (e.g., airplanes, components, repair equipment, and tooling).
3. Repair aircraft.

The preferences are scheduled to expire July 1, 2040.

The preferences lower the cost of doing business. The aerospace industry remains in Washington, and its employees earn wages above the state average and are provided benefits.

The Legislature stated three public policy objectives when the preferences were initially enacted in 2003, and added a fourth policy objective when extending the preferences in 2013.

Objectives (Stated)	Results
Reduce the cost of doing business in Washington for the aerospace industry compared to other states.	**Met.** The preferences save beneficiaries more than $500 million per biennium. They improve the state's competitive position by cutting the industry's effective tax rate by at least 50%, making the rate lower than 5 out of 13 competitor states. (Tab 1)
Encourage the continued presence of the aerospace industry in Washington.	**Met.** Aerospace continues to be a major industry in Washington. However, it is unclear to what extent the preferences influenced location decisions. (Tab 2)
Provide jobs with good wages and benefits.	**Met.** Aerospace industry employees earn wages and benefits well above the state average. (Tab 3)

However, aerospace employment is lower than it was in 2013. It is unclear whether the preferences prevented greater job losses.

Objectives (Stated)	Results
Maintain and grow Washington's aerospace industry workforce.	**Unclear.** Washington aerospace employment is lower than it was in 2013, but higher than when the preferences were first enacted in 2003. (Tab 3) If the preferences led Boeing to remain in Washington, they may have kept the state from losing more jobs. If not, they reduced government spending and may have contributed to job losses. (Tab 4)

Recommendations

Legislative Auditor's Recommendation: Clarify

The Legislature should clarify its expectations for the level of aerospace industry employment. Providing additional detail in the tax preference performance statement such as a baseline level of employment would facilitate future reviews of these preferences.

More information is available on the Recommendations Tab.

Commissioners' Recommendation

Available October 2019.

This report was updated on August 21, 2019 to clarify Boeing and total US aerospace employment.

REVIEW DETAILS

1. Preferences reduce costs and improve competitiveness

The preferences improved Washington's competitive position by cutting the industry's effective tax rate by at least 50%

Over 600 beneficiaries have claimed seven of nine preferences

In 2003, the Legislature approved a package of aerospace tax preferences. In 2013, it extended the preferences' expiration date from 2024 to 2040. The preferences include:

- Three preferential business and occupation (B&O) tax rates.
- Two B&O tax credits.
- Two sales and use tax exemptions (expanded in 2013).
- One property tax exemption (unclaimed).
- One leasehold excise tax exemption (unclaimed).

See Appendix A for details.

The tax preferences reduce the cost of doing business for the aerospace industry and other beneficiaries

A business may claim one or more of these preferences if it manufactures commercial airplanes, develops aerospace products[1], or repairs aircraft. Businesses in the aerospace industry were the primary beneficiaries, although firms in related industries also claim the preferences.

- The aerospace industry includes businesses that file taxes under North American Industry Classification System (NAICS) code 3364--Aerospace Product and Parts Manufacturing. Boeing is the largest aerospace business in Washington, and the state's largest private employer.
- Related industries include architectural and engineering services, durable goods wholesaling, and fabricated metal product manufacturing.

From fiscal year 2014 through fiscal year 2017, 664 businesses saved $1.1 billion by claiming the preferences. Beneficiaries in the aerospace industry claimed 93% of the savings. Detailed savings estimates for each preference are in Appendix A.

[1] Airplanes, airplane components, airplane repair equipment, and tooling used in manufacturing commercial airplanes

Exhibit 1.1: Beneficiaries save more than $500 million per biennium

Biennium	Fiscal Year	Estimated Fiscal Year Beneficiary Savings	Estimated Biennial Beneficiary Savings
2013-2015 *7/1/13-6/30/15*	2014	$223 million	$528 million
	2015	$305 million	
2015-2017 *7/1/15-6/30/17*	2016	$304 million	$543 million
	2017	$239 million	
2017-2019 *7/1/17-6/30/19*	2018	$246 million	$501 million
	2019	$255 million	
2019-2021 *7/1/19-6/30/21*	2020	$267 million	$545 million
	2021	$278 million	
2021-2023 *7/1/21-6/30/23*	2022	$282 million	$569 million
	2023	$287 million	

Source: JLARC staff analysis of tax return data - total savings may not equal sum of detailed estimates due to rounding.

Independent consultant's tax accounting analysis concludes that the preferences improved Washington's competitiveness relative to other states

JLARC staff hired Ernst & Young to evaluate the business tax climate for the aerospace industry across Washington and 13 other benchmark states. Benchmark states include those with the highest concentration of aerospace employment and those identified as leading states by recent studies of aerospace competitiveness. The analysis considers statutory incentives (including Washington's aerospace tax preferences), negotiated incentives, and cash grants provided to the aerospace industry. Appendix B has additional detail about the analysis and a link to the full report.

Four steps in Ernst & Young analysis to evaluate business tax climate

1. Estimate the rates of return and all taxes[2] paid by hypothetical small and large aerospace firms that invest in new manufacturing facilities.
2. Estimate the reduction in rate of return due to taxes. As shown in the hypothetical example below, the reduction due to taxes is the difference between the pre-tax and after-tax rates of return.

Pre-tax rate of return	5%
− After-tax rate of return	4%
Reduction due to taxes	1%

3. Express the reduction as an effective tax rate.

$$\frac{\text{Reduction due to taxes } 1\%}{\text{Pre-tax rate of return } 5\%} = \text{20\% ETR}$$

4. Estimate the reduction in ETR due to statutory incentives[3] and negotiated incentives[4]. If incentives reduce taxes in the above example by half, the effective tax rate would be reduced to 10%.

$$\frac{\text{Reduction due to taxes after incentives } 0.5\%}{\text{Pre-tax rate of return } 5\%} = \text{10\% ETR}$$

According to the analysis:

- For the hypothetical large firm[5], the incentives reduce the effective tax rate from 20.9% to 10.0%. This improves the state's competitive ranking from thirteenth to ninth out of 14 states with a large aerospace presence (see Exhibit 1.2).
- For the small firm[6], the incentives reduce the effective tax rate from 15.8% to 6.1%. This improves the state's competitive ranking from eleventh to eighth place (see Appendix B).

2Including all state and local taxes a business may pay, including sales, property, and B&O or income tax as applicable
3Examples: preferential B&O rates, sales and use tax exemptions
4Examples: tax abatements, cash grants
5A firm with 10,000 employees
6A firm with 50 employees

In Washington, statutory incentives reduce the effective tax rate more than negotiated incentives. Other states use more negotiated incentives.

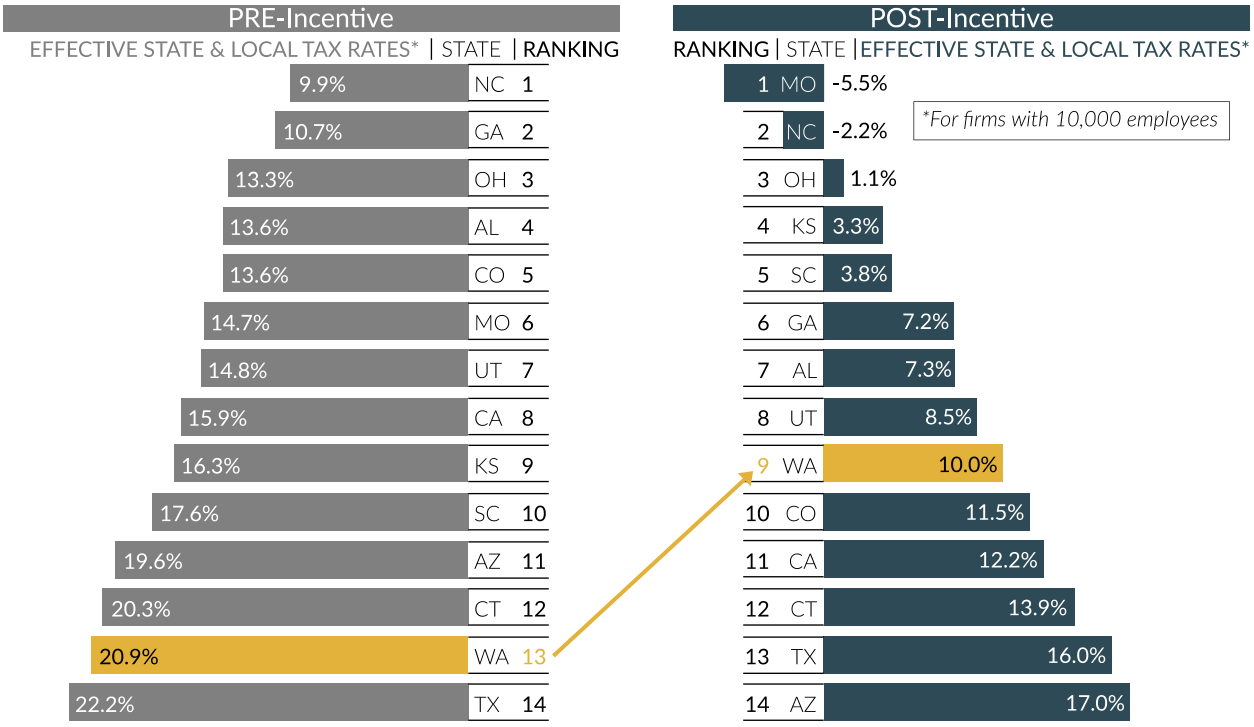
For this study, the effective tax rate (ETR) includes all state and local taxes a business may pay, including sales, property, and B&O or income tax as applicable.

Washington's statutory incentives lower the ETR for large firms by 9.4 percentage points (from 20.9% to 11.5%). Negotiated incentives reduce the ETR another 1.5 percentage points – from 11.5% to 10.0%. Cash grants are prohibited by the state constitution.

Several of the benchmark states offer significant negotiated incentives and cash grants that enhance their competitiveness compared to Washington.

- When only statutory incentives are applied, Washington ranks fourth out of the 14 states for large firms.
- When all types of incentives are considered, Washington places ninth for large firms.

Exhibit 1.2: Washington's tax preferences improve its tax competitiveness



Note: Post-incentive ETR includes statutory incentives, negotiated incentives, and cash grants.
Source: Ernst & Young analysis.

2. Aerospace remains a major Washington industry

Aerospace continues to be a major industry in Washington. However, it is unclear to what extent the preferences influenced location decisions.

Economic and employment data show that the aerospace industry has continued its presence in Washington

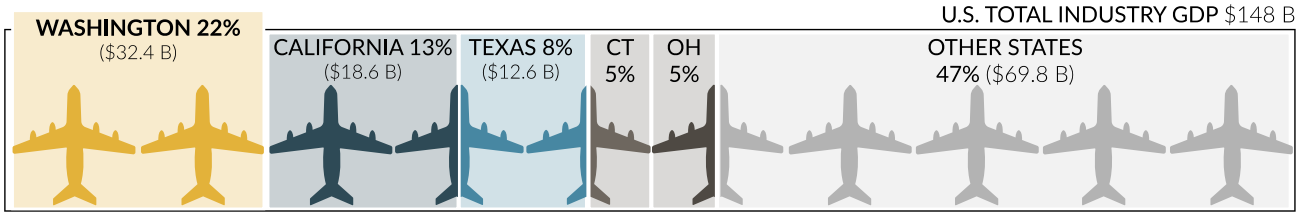
Data from the Bureau of Economic Analysis (BEA) indicates that:

- Nationally, the *Other Transportation Equipment Manufacturing* industry, which includes aerospace, contributed $148 billion to the gross domestic product in 2017. Washington's contribution – $32.4 billion – was 22% of the national total and more than any other state.
- In the 4th quarter of 2018, 198 businesses in the *Aerospace Products and Parts Manufacturing* industry (NAICS 3364) employed 85,900 workers in Washington. Although employment has declined in recent years (see Tab 3), it continues to be larger than in any other state, representing 17% of national industry employment.
- The concentration of aerospace value and jobs in Washington (location quotient)[7] is greater than the national average. In 2017, the value of goods and services made by Washington's *Other Transportation Equipment Manufacturing* industry, as a portion of the state's economy, was 8.2 times greater than the national average. In 2018, the relative concentration of aerospace industry jobs in the state was 7.3 times the national average.

BEA aggregates industries when measuring gross domestic product

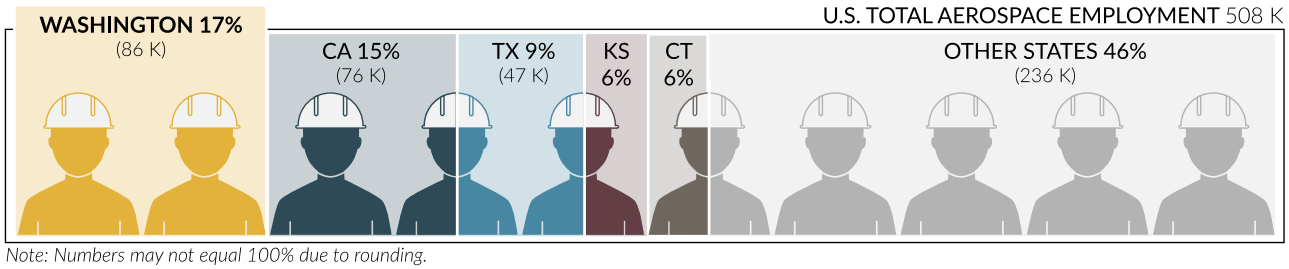
The aerospace industry includes businesses that file taxes under North American Industry Classification System (NAICS) code 3364--**Aerospace Product and Parts Manufacturing.**
Other Transportation Equipment Manufacturing includes the aerospace NAICS group and three other industry groups related to the manufacture of railroad rolling stock, ships and boats, and other transportation equipment.

Exhibit 2.1: Washington's aerospace industry leads nation in contribution to GDP and industry employment



Note: "Other transportation equipment manufacturing" includes transportation equipment manufacturing excluding motor vehicles.

[7] A location quotient measures the concentration of a given industry in a given place relative to a larger region such as the nation



Note: Numbers may not equal 100% due to rounding.

Source: Bureau of Economic Analysis, Bureau of Labor Statistics.

On average, beneficiaries provide wages and benefits that meet or exceed state averages

The preferences aim to provide "good wages and benefits." Since these terms are not defined, JLARC staff compared wage and benefit data for preference beneficiaries to data from Washington's manufacturing industry in general.

- Washington's average annual wage for manufacturing is just over $76,000. It is $62,000 for all industries.
- Beneficiaries of the aerospace tax preferences reported to the Department of Revenue (DOR) that 72% of their employees earned more than $30 per hour (about $62,000 annually) in 2017, and that more than 90% of employees are enrolled in medical, dental, and retirement plans.
- Employment Security Department (ESD) data shows that between 2016 and 2017, beneficiaries paid employees an average annual wage greater than $100,000.

This data is consistent with information from the Bureau of Labor Statistics (BLS). According to BLS, aerospace industry businesses in Washington paid a total of $9.5 billion in wages in 2017, averaging $114,000 per employee. The average annual wage is the fourth highest of any state in the country for the industry and is above the U.S. average aerospace wage of $101,000.

Exhibit 2.2: Beneficiaries paid employees more than $108,000 per year in 2017

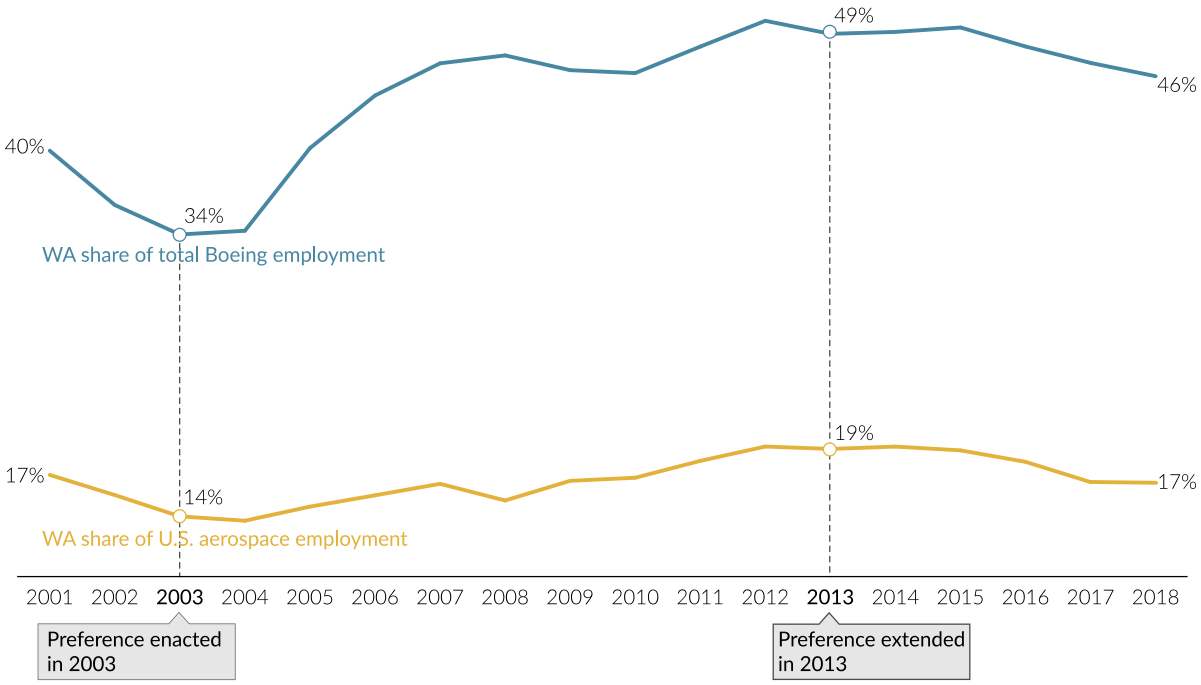
Source: JLARC analysis of ESD Data, DOR Tax Return Data, BLS Quarterly Census of Employment and Wages (QCEW) Data.

Boeing is the largest business in Washington's aerospace industry

Boeing is the largest aerospace business in Washington, and the state's largest private employer. Boeing reported Washington employment at the end of 2018 was 69,800, representing 46% of total company employment, more than in any other state. Boeing estimates its supply chain

network includes 1,500 supplier and vendor businesses in Washington, on which the company reported spending more than $5 billion in 2017.

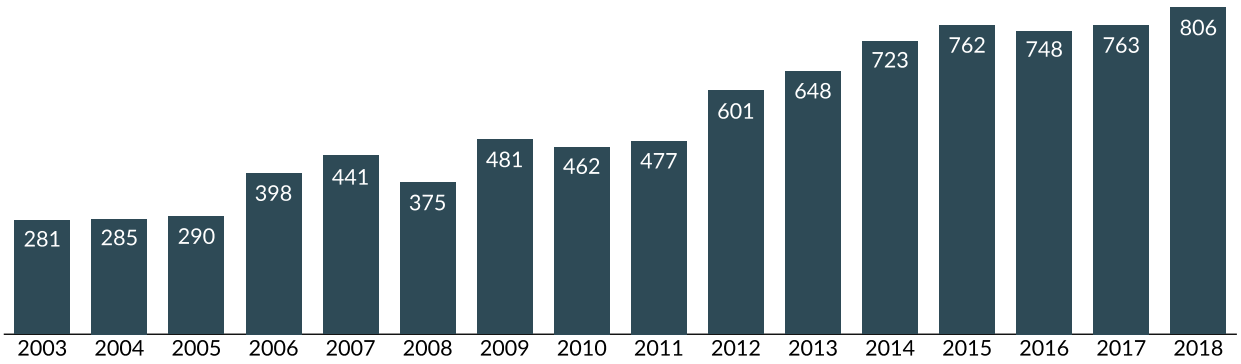
Exhibit 2.3: Washington has the nation's largest share of aerospace and Boeing jobs



Source: Bureau of Labor Statistics and Boeing.

The company's aircraft deliveries have increased since 2013, and Boeing reported delivering a record number of aircraft in 2018. Most of the aircraft were assembled in Washington[8]. Still, airplane orders outpaced deliveries, and Boeing states that its order backlog is more than 5,800 aircraft. The company estimates that this backlog represents seven years of airplane production.

Exhibit 2.4: Boeing airplane deliveries have increased



Source: JLARC representation of Boeing data.

[8]Boeing assembles all 737, 747, 767, 777, and Boeing Business Jets in Washington. It uses two assembly lines for the 787 – one in Everett, Washington, and one in North Charleston, South Carolina.

Industry has met statutory contingencies to locate a manufacturing program in Washington

The 2013 Legislature put two contingencies in the law:

Contingency	Outcome
The preference would not take effect until a significant commercial airplane manufacturing program was located in Washington.	The Department of Revenue (DOR) determined that the contingency was satisfied in 2014 after Boeing located the final assembly of the 777X and its composite wing facility in Everett.
The preferential B&O tax rate ends for the products made at the manufacturing site if DOR determines that any portion of that program has moved outside Washington.	This contingency has not occurred.

Influence of preferences on continued presence of industry unclear

JLARC staff are unable to determine the degree to which the aerospace tax preferences, particularly their 2013 extension and expansion, contributed to the continued presence of the aerospace industry in Washington.

To assess the impact of the preferences on employment and presence in the state, it is necessary to know the extent to which businesses make decisions as a result of the incentive. Boeing's decision to locate final assembly of the 777X and its composite wing facility in Washington ensured that the 2013 extension of tax preferences took effect. However, it is unknown whether the company would have made this location decision even if the preferences had not been extended.

- Research literature and staff interviews with subject matter experts indicate that taxes – and the availability of tax incentives – are just one of many factors that influence business location decisions. Other factors include the quality of transportation infrastructure, labor costs, workforce quality, and the regulatory environment.

- While some literature indicates that tax preferences influence a minority of business location decisions, using such a general assumption is not possible when evaluating an incentive's impact on a single location decision.
- An advisory panel of economic and labor experts convened by JLARC staff agreed with the staff conclusion that it is not feasible to analytically determine whether one factor (e.g., tax incentives) led a single business to make a location decision.

For additional analysis of Boeing's potential location decisions, refer to Tab 4.

3. Jobs above 2003 level, but decline since 2013 highest in the nation

Washington's aerospace employment is higher than when the preferences were first enacted in 2003. However, since 2013, Washington has lost more aerospace jobs than any other state.

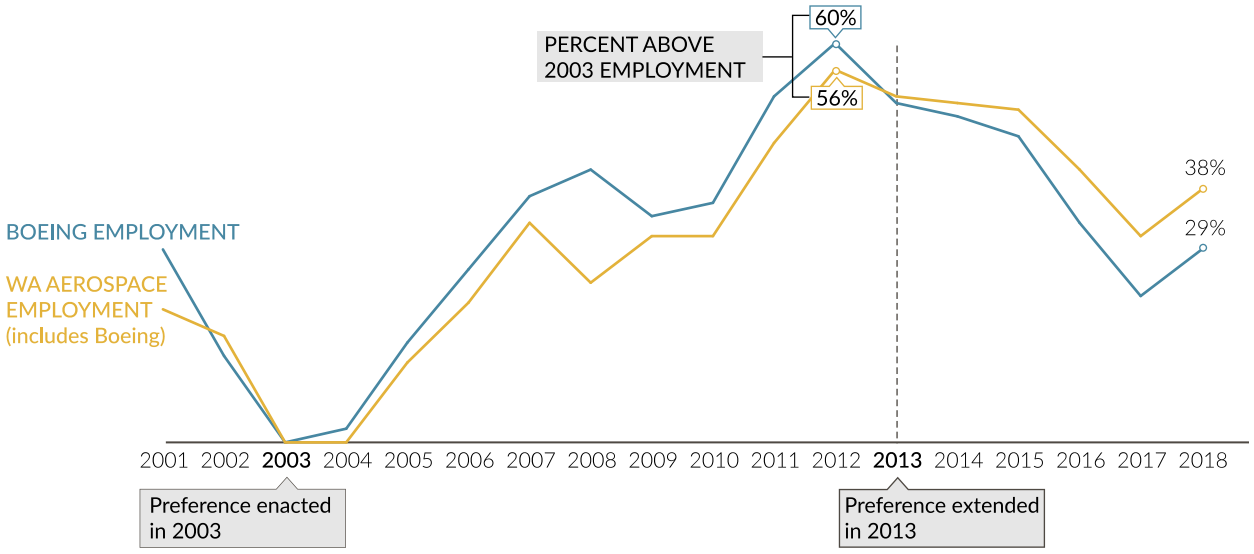
Aerospace industry employment trending down, but still above 2003

Since 2003, when the preferences were first enacted, aerospace industry employment followed two major trends:

1. **Statewide aerospace employment (yellow line) grew from 2003 through 2012.** From 2003 through 2012, Washington aerospace employment increased by 56%, as the state added 34,500 jobs. Of these new jobs, 32,400 were at Boeing, which increased its employment by 60% (blue line).
2. **Employment declined from 2012 through 2018.** From 2012 through 2018, Boeing employment in Washington fell by 16,700. This was partially offset by gains by other aerospace businesses, so Washington's total aerospace employment fell by 10,800.

Despite the decline, statewide aerospace and Boeing employment remained 38% and 29% above 2003 levels, respectively. JLARC staff do not assert a causal relationship between these trends and legislative action to create the preferences in 2003 and extend them in 2013.

Exhibit 3.1: Both Boeing and statewide aerospace employment trending down since 2013, but still above 2003 levels



Source: Bureau of Labor Statistics and Boeing.

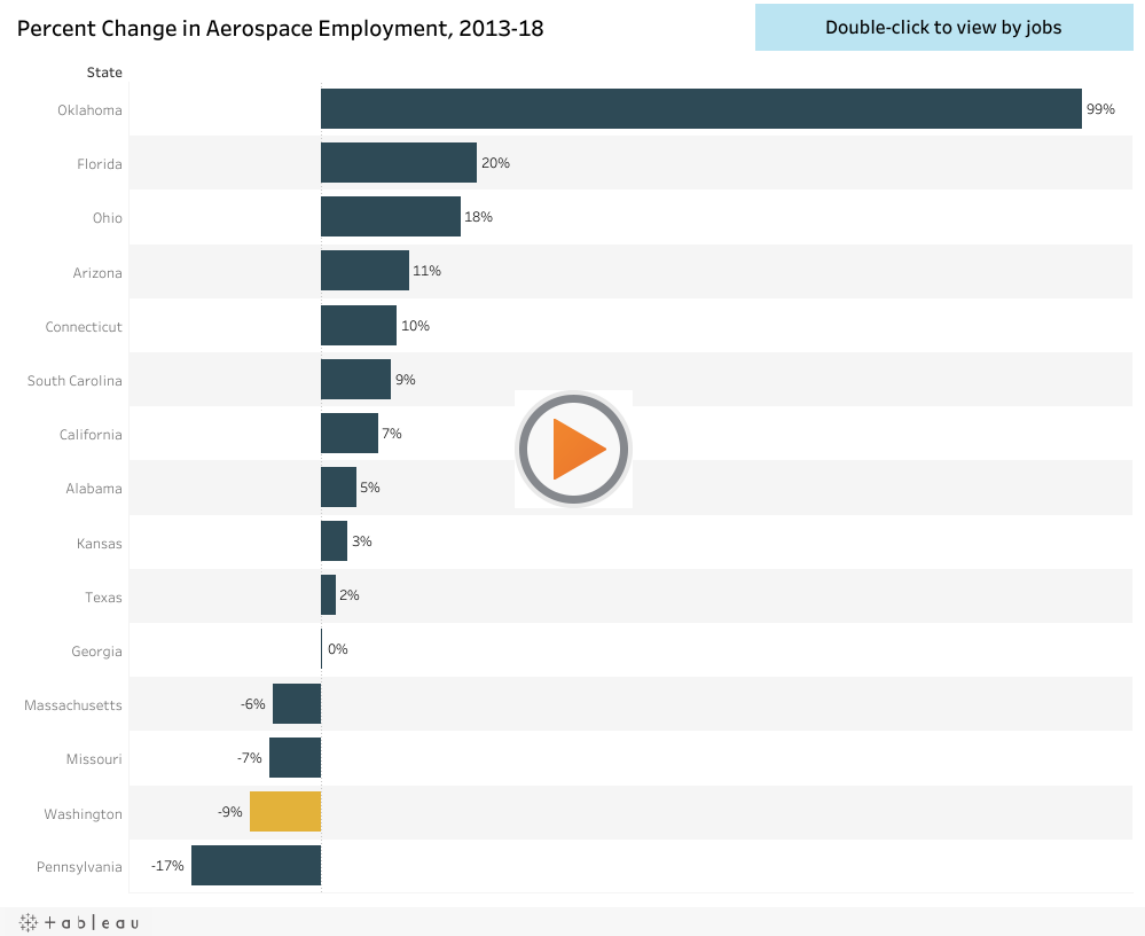
Washington aerospace employment losses since 2013 lead the nation

In 2013 the Legislature extended the aerospace tax preferences with the stated public policy objective to maintain and grow industry employment.

Washington's loss of 8,800 aerospace jobs from 2013 through 2018 was the largest in the U.S. and nearly four times more than in any other state. This represented a 9% decline, the second largest percentage decline among states with at least 10,000 aerospace employees in any year between 2013 and 2018.

- Over the same period, U.S. aerospace employment (excluding Washington) increased 7% or 27,000 jobs. This cut the state's share of total industry employment from 19% to 17%.
- International aerospace employment increased 6% from 2013-17, according to data from Deloitte.

Exhibit 3.2: Washington's aerospace employment decline was the largest among states with a significant aerospace presence



The composition of Washington's aerospace employment has shifted, as non-Boeing employment grew

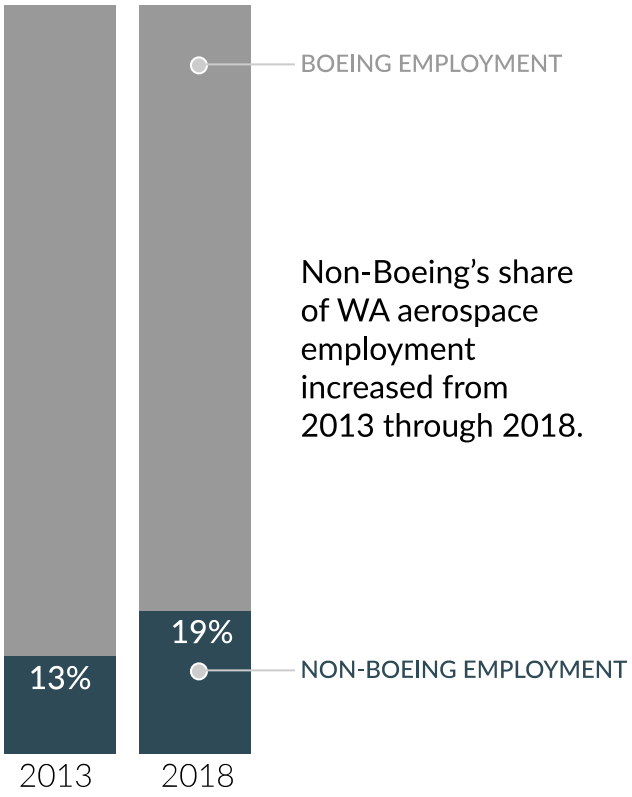
From 2013 through 2018, Boeing employment fell by 12,100 jobs. During this period, non-Boeing aerospace employment increased by 3,300 jobs. Boeing's share of Washington aerospace employment fell from 87% in 2013 to 81% in 2018.

Boeing job losses were greater in Washington than in other states.

Boeing's global employment fell by 15,400 from 2013 through 2018, a 9% decline. This decline disproportionately affected Washington, which accounted for 79% of job losses. As a result, the state's share of Boeing employment declined from 49% to 46%.

Boeing's Washington employment rebounded from 2017 to 2018, rising 6% to 69,800. Total company employment also grew in this period, resulting in a 1-percentage-point reduction in Washington's share of company employment.

Exhibit 3.3: Non-Boeing aerospace employment grew, capturing a larger share of thestate's workforce



Source: Bureau of Labor Statistics and Boeing.

Non-tax factors contribute to employment changes, but the extent of their effect is unclear

Media coverage of Boeing's wing facility has drawn increased attention to the role of technology and automation in aerospace manufacturing. From 2003 through 2018, Washington's aerospace industry saw increases in both output per employee (i.e., labor productivity) and total employment. Output[9] per employee increased 83% from $565,000 in 2003 to $1,032,000 in 2018, while employment was up 38%.

However, the effect of labor productivity growth on employment is unclear. Some literature points to outsourcing, rather than automation, as a driver of manufacturing employment changes. JLARC staff are unable to quantify the extent to which productivity changes influenced aerospace employment independent of other factors.

[9] Measured as gross business income

It is unclear whether industry employment meets legislative expectations

Without further information about the Legislature's expectations for aerospace industry employment, JLARC staff are unable to determine whether recent changes meet the public policy objective to maintain and grow aerospace industry jobs.

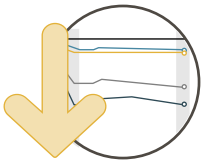
4. Effect of preferences on jobs unclear

If the preferences led Boeing to remain in Washington, they may have kept the state from losing more jobs. If not, they reduced government spending and may have contributed to job losses.

How did extending the preferences affect employment? It depends on whether they influenced Boeing's decision to remain in Washington.

In extending the aerospace tax preferences, the Legislature sought to secure final assembly of the new 777X and the composite wing facility in Washington. As required, Boeing located its new facility in Washington. It is unclear whether Boeing would have made the same decision if the preferences had not been extended. Whether Boeing was influenced by the preferences has direct implications on the effect of the extension on employment.

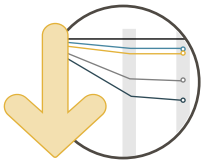
JLARC staff modeled three hypothetical scenarios of what could have happened if the preferences were not extended. They illustrate a range of potential employment outcomes.



SCENARIO 1

SIMULATED ACTION:
Legislature did not extend preferences in 2013.

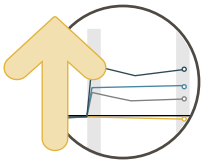
POSSIBLE RESPONSE:
Boeing locates 777X production and composite wing facility outside Washington.



SCENARIO 2

SIMULATED ACTION:
Legislature did not extend preferences in 2013.

POSSIBLE RESPONSE:
Boeing locates 777X production and subsequent generations of airplanes outside Washington.



SCENARIO 3

SIMULATED ACTION:
Legislature did not extend preferences in 2013.

POSSIBLE RESPONSE:
Boeing sites 777X production in Washington despite the preferences not being expanded and extended.

JLARC staff used REMI[10] to model three hypothetical scenarios that illustrate the range of what could have happened if the Legislature had not extended the preferences in 2013. JLARC staff developed assumptions based on discussions with an advisory group, testimony in support of the 2013 legislation extending the preferences, and estimates of Boeing's direct 777 workforce. Because REMI is calibrated to Washington's economy in 2016, the first year of the analysis is 2017.

JLARC staff are not able to determine the likelihood that any of these scenarios would have occurred absent the extension of the tax preferences, or whether one is more likely to have occurred than another. They serve to illustrate the range of potential outcomes and the large employment multiplier of aerospace jobs in Washington's economy.

Appendix D provides additional detail about the REMI analysis.

Reading the results of the economic analysis

Model results are presented as jobs potentially lost or gained as a result of Boeing's decisions in the event the preferences had not been extended.

- Total jobs includes jobs in three categories: "State and Local Government," "Aerospace Products and Parts Manufacturing," and "Private Nonfarm (Excluding Aerospace)."

The job numbers include direct, indirect, and induced jobs. See Appendix C for explanations of these terms.

If the preferences led to Boeing's location decision, they may have prevented greater job losses

Aerospace employment has decreased since 2013 when the preferences were extended (Tab 3). However, scenarios 1 and 2 model the removal of additional aerospace jobs to simulate Boeing's decision to move airplane production out of state. The decline in aerospace jobs leads to a much larger drop in private sector employment, due to the high multiplier effect of aerospace jobs.

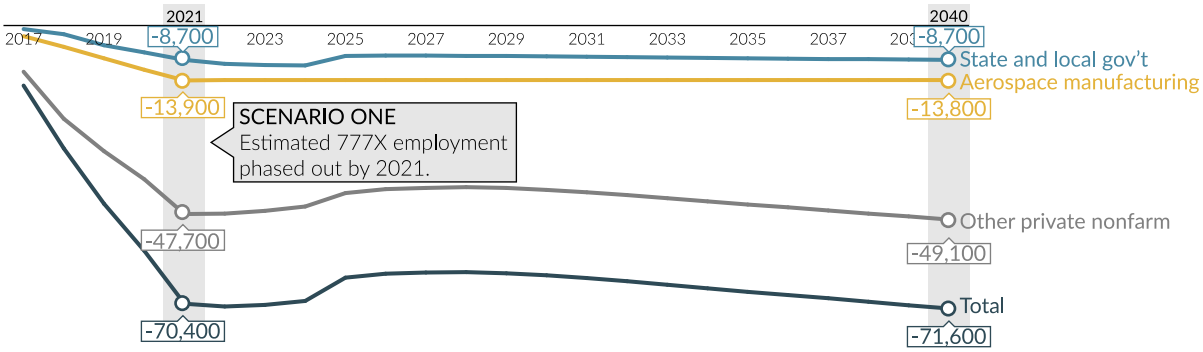
- In the REMI model, aerospace jobs have a multiplier of over 4, meaning that for every aerospace job lost, an additional four jobs are lost economy-wide.
- The high multiplier stems from the industry's high wages (e.g., supporting jobs in retail or construction) and from the number of industries in Washington that supply goods and services to the aerospace industry (e.g., engineering services and machine shops).

[10]The Regional Economic Models, Inc. (REMI) model can be used to estimate the effects of a policy change

Scenario 1: Boeing locates 777X production and the composite wing facility outside Washington. Boeing's decision to move the 777X out of state has no bearing on location decisions for future aircraft lines.

Assumptions	The preferences were not extended, and as a result: • Boeing moves 12,100 employees[11] out of state over five years as 777X production ramps up and production of the old model is phased out. • Boeing builds the composite wing facility outside Washington, and the state forgoes the benefits of $1 billion in construction and 500 jobs at the wing facility. • State government spending increases beginning in 2025 due to higher tax revenue as the preferences expire. Beneficiary production costs are increased by the same amount.
Results	The hypothetical loss of the 777X production line results in the loss of 70,400 jobs statewide by 2021 (estimated). Employment rebounds slightly when the original preferences expire in 2025, resulting in an increase in revenue collection and government spending. By 2040, REMI estimates total job losses of 71,600.

Exhibit 4.1: Scenario 1 shows a hypothetical loss of 12,100 Boeing jobs linked to 777X production could have resulted in loss of an estimated 71,600 jobs statewide



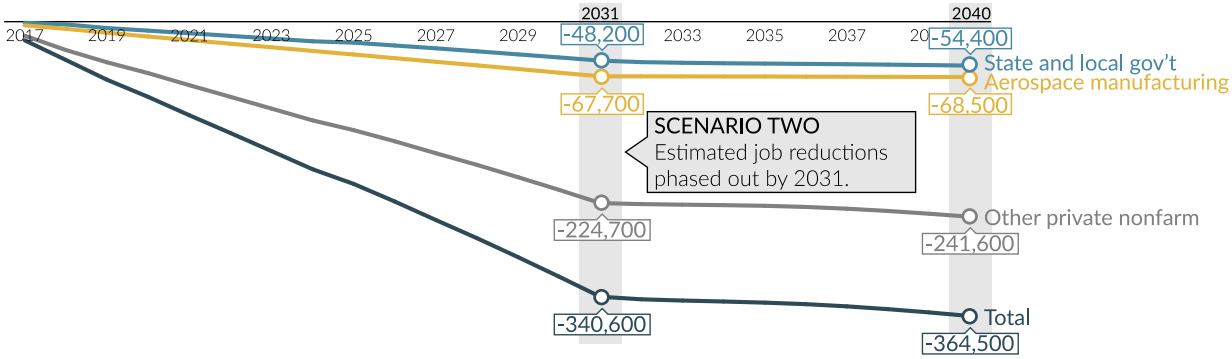
Source: JLARC staff analysis using REMI.

[11] Estimated 777X workforce

Scenario 2: Boeing locates 777X production and subsequent generations of airplanes outside Washington.

Assumptions	The preferences were not extended, and as a result: • Boeing moves 80%[12] of its workforce (estimated at 60,500 employees) out of state over fifteen years, as all new production lines are sited out of Washington. • Boeing builds the composite wing facility outside Washington, and the state forgoes the benefits of $1 billion in construction and 500 jobs at the wing facility. • State government spending is increased beginning in 2025 due to higher tax revenue as the preferences expire. Beneficiary production costs are increased by the same amount.
Results	The hypothetical loss of Boeing jobs results in the loss of 340,600 jobs statewide by 2031 (estimated). Total job losses reach an estimated 364,500 by 2040.

Exhibit 4.2: Scenario 2 shows a hypothetical loss of 80% of Boeing jobs for new production lines could have resulted in loss of an estimated 364,500 jobs statewide



Source: JLARC staff analysis using REMI.

If the location decision happened regardless of the preferences, then they reduced overall statewide employment after 2025

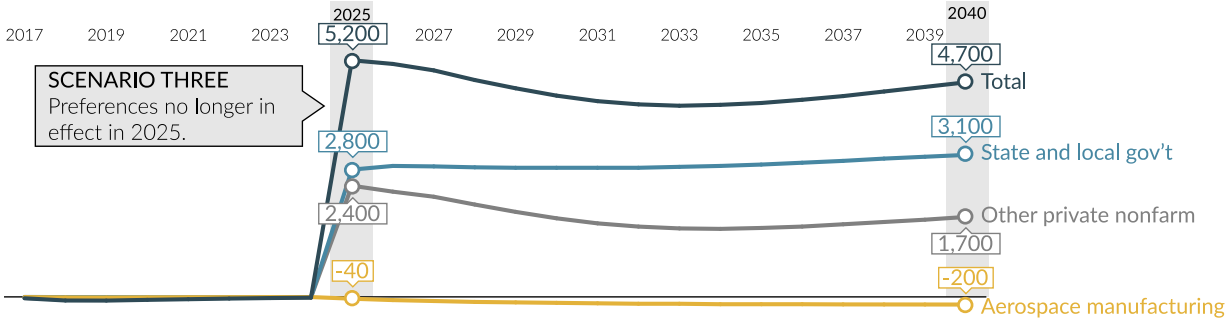
Scenario 3, models the effect if Boeing built the 777X and composite wing facility in Washington without the tax preferences. The implicit assumption is that the preferences – if passed – would have had no effect on the company's decision.

[12]This scenario was considered by the Office of Financial Management (OFM) in its analysis for the 2003 aerospace tax preferences and was included in JLARC's 2014 report on the preferences.

Scenario 3: Boeing sites 777X production in Washington despite the preferences not being expanded and extended.

Assumptions	The preferences were not extended. Boeing builds the 777X in Everett without them, and as a result: • Government spending is increased beginning in 2025, as the expiration of the preferences leads to higher tax receipts. • Beneficiary production costs are increased by the same amount as the additional tax revenue. • Employment and capital expenditures are unchanged from the baseline. However, the capital expenditure is subject to sales and use tax, as this expenditure would not have qualified for the exemption absent the 2013 expansion.
Results	The impacts to employment result from the non-expansion and subsequent expiration of the preferences: • Absent the expansion of the sales and use tax exemption for airplane manufacturing facilities, the tax due on the composite wing facility's construction is estimated to contribute to a small employment decline in the early years of the forecast. • Higher production costs due to the expiration of tax savings result in a drop in aerospace employment beginning in 2025, with the decrease reaching 200 by 2040. • Statewide employment is largely unchanged from the baseline until 2025, when the preferences' expiration increases government spending by an amount equal to estimated beneficiary savings. All of these effects net to an estimated 4,700 job increase by 2040.

Exhibit 4.3: Scenario 3 indicates if 777X siting would have happened without tax preferences, increase in government spending could have offset minor aerospace job losses



Source: JLARC staff analysis using REMI.

The Legislative Auditor cannot determine if the preferences maintained or grew aerospace employment

Since there is uncertainty as to how the preferences influenced Boeing's facility location decision, it is not possible to draw a definitive conclusion about whether the preferences resulted in maintaining or growing employment.

Section 5: Applicable Statutes

The aerospace tax preferences are codified in several sections of statute

If only selected language in a section of law is relevant, that relevant language is highlighted.

Certified Aircraft Repair Firms - Preferential Rate (B&O Tax)

RCW 82.04.250

Tax on Retailers

(1) Upon every person engaging within this state in the business of making sales at retail, except persons taxable as retailers under other provisions of this chapter, as to such persons, the amount of tax with respect to such business is equal to the gross proceeds of sales of the business, multiplied by the rate of 0.471 percent.

(2) Upon every person engaging within this state in the business of making sales at retail that are exempt from the tax imposed under chapter 82.08 RCW by reason of RCW 82.08.0261, 82.08.0262, or 82.08.0263, except persons taxable under RCW 82.04.260(11) or subsection (3) of this section, as to such persons, the amount of tax with respect to such business is equal to the gross proceeds of sales of the business, multiplied by the rate of 0.484 percent.

(3)(a) Until July 1, 2040, upon every person classified by the federal aviation administration as a federal aviation regulation part 145 certificated repair station and that is engaging within this state in the business of making sales at retail that are exempt from the tax imposed under chapter 82.08 RCW by reason of RCW 82.08.0261, 82.08.0262, or 82.08.0263, as to such persons, the amount of tax with respect to such business is equal to the gross proceeds of sales of the business, multiplied by the rate of .2904 percent.

(b) A person reporting under the tax rate provided in this subsection (3) must file a complete annual report with the department under RCW 82.32.534.

[2014 c 97 § 402; (2014 c 97 § 401 expired July 9, 2014); 2013 3rd sp.s. c 2 § 7; 2010 1st sp.s. c 23 § 509; (2010 1st sp.s. c 23 § 508 expired July 1, 2011); (2010 1st sp.s. c 23 § 507 expired July 13, 2010); 2010 1st sp.s. c 11 § 1; (2010 c 114 § 106 expired July 1, 2011); 2008 c 81 § 5; (2007 c 54 § 5 repealed by 2010 1st sp.s. c 11 § 7); 2006 c 177 § 5; 2003 2nd sp.s. c 1 § 2; (2003 1st sp.s. c 2 § 1 expired July 1, 2006). Prior: 1998 c 343 § 5; 1998 c 312 § 4; 1993 sp.s. c 25 § 103; 1981 c 172 § 2; 1971 ex.s. c 281 § 4; 1971 ex.s. c 186 § 2; 1969 ex.s. c 262 § 35; 1967 ex.s. c 149 § 9; 1961 c 15 § 82.04.250; prior: 1955 c 389 § 45; prior: 1950 ex.s. c 5 § 1, part; 1949 c 228 § 1, part; 1943 c 156 § 1, part; 1941 c 178 § 1, part; 1939 c 225 § 1, part; 1937 c 227 § 1, part; 1935 c 180 § 4, part; Rem. Supp. 1949 § 8370-4, part.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—Savings—Effective date—2008 c 81: See notes following RCW 82.08.975.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Commercial Airplane Manufacturing - Preferential Rate (B&O Tax)

RCW 82.04.260

Tax on manufacturers and processors of various foods and by-products—Research and development organizations—Travel agents—Certain international activities—Stevedoring and associated activities—Low-level waste disposers—Insurance producers, surplus line brokers, and title insurance agents—Hospitals—Commercial airplane activities—Timber product activities—Canned salmon processors. (*Effective January 1, 2018.*)

*** CHANGE IN 2018 *** (SEE 2580-S.SL) ***

(1) Upon every person engaging within this state in the business of manufacturing:

(a) Wheat into flour, barley into pearl barley, soybeans into soybean oil, canola into canola oil, canola meal, or canola by-products, or sunflower seeds into sunflower oil; as to such persons the amount of tax with respect to such business is equal to the value of the flour, pearl barley, oil, canola meal, or canola by-product manufactured, multiplied by the rate of 0.138 percent;

(b) Beginning July 1, 2025, seafood products that remain in a raw, raw frozen, or raw salted state at the completion of the manufacturing by that person; or selling manufactured seafood products that remain in a raw, raw frozen, or raw salted state at the completion of the manufacturing, to purchasers who transport in the ordinary course of business the goods out of this state; as to such persons the amount of tax with respect to such business is equal to the value of the products manufactured or the gross proceeds derived from such sales, multiplied by the rate of 0.138 percent. Sellers must keep and preserve records for the period required by RCW 82.32.070 establishing that the goods were transported by the purchaser in the ordinary course of business out of this state;

(c)(i) Except as provided otherwise in (c)(iii) of this subsection, from July 1, 2025, until January 1, 2036, dairy products; or selling dairy products that the person has manufactured to purchasers who either transport in the ordinary course of business the goods out of state or purchasers who use such dairy products as an ingredient or component in the manufacturing of a dairy product; as to such persons the tax imposed is equal to the value of the products manufactured or the gross proceeds derived from such sales multiplied by the rate of 0.138 percent. Sellers must keep and preserve records for the period required by RCW 82.32.070 establishing that the goods were transported by the purchaser in the ordinary course of business out of this state or sold to a manufacturer for use as an ingredient or component in the manufacturing of a dairy product. (ii) For the purposes of this subsection (1)(c), "dairy products" means: (A) Products, not including any marijuana-infused product, that as of September 20, 2001, are identified in 21

C.F.R., chapter 1, parts 131, 133, and 135, including by-products from the manufacturing of the dairy products, such as whey and casein; and (B) Products comprised of not less than seventy percent dairy products that qualify under (c)(ii)(A) of this subsection, measured by weight or volume. (iii) The preferential tax rate provided to taxpayers under this subsection (1)(c) does not apply to sales of dairy products on or after July 1, 2023, where a dairy product is used by the purchaser as an ingredient or component in the manufacturing in Washington of a dairy product;

(d)(i) Beginning July 1, 2025, fruits or vegetables by canning, preserving, freezing, processing, or dehydrating fresh fruits or vegetables, or selling at wholesale fruits or vegetables manufactured by the seller by canning, preserving, freezing, processing, or dehydrating fresh fruits or vegetables and sold to purchasers who transport in the ordinary course of business the goods out of this state; as to such persons the amount of tax with respect to such business is equal to the value of the products manufactured or the gross proceeds derived from such sales multiplied by the rate of 0.138 percent. Sellers must keep and preserve records for the period required by RCW 82.32.070 establishing that the goods were transported by the purchaser in the ordinary course of business out of this state. (ii) For purposes of this subsection (1)(d), "fruits" and "vegetables" do not include marijuana, useable marijuana, or marijuana-infused products;

(e) Until July 1, 2009, alcohol fuel, biodiesel fuel, or biodiesel feedstock, as those terms are defined in RCW 82.29A.135; as to such persons the amount of tax with respect to the business is equal to the value of alcohol fuel, biodiesel fuel, or biodiesel feedstock manufactured, multiplied by the rate of 0.138 percent; and

(f) Wood biomass fuel as defined in RCW 82.29A.135; as to such persons the amount of tax with respect to the business is equal to the value of wood biomass fuel manufactured, multiplied by the rate of 0.138 percent.

(2) Upon every person engaging within this state in the business of splitting or processing dried peas; as to such persons the amount of tax with respect to such business is equal to the value of the peas split or processed, multiplied by the rate of 0.138 percent.

(3) Upon every nonprofit corporation and nonprofit association engaging within this state in research and development, as to such corporations and associations, the amount of tax with respect to such activities is equal to the gross income derived from such activities multiplied by the rate of 0.484 percent.

(4) Upon every person engaging within this state in the business of slaughtering, breaking and/or processing perishable meat products and/or selling the same at wholesale only and not at retail; as to such persons the tax imposed is equal to the gross proceeds derived from such sales multiplied by the rate of 0.138 percent.

(5) Upon every person engaging within this state in the business of acting as a travel agent or tour operator; as to such persons the amount of the tax with respect to such activities is equal to the gross income derived from such activities multiplied by the rate of 0.275 percent.

(6) Upon every person engaging within this state in business as an international steamship agent, international customs house broker, international freight forwarder, vessel and/or cargo charter broker in foreign commerce, and/or international air cargo agent; as to such persons the amount of the tax with respect to only international activities is equal to the gross income derived from such activities multiplied by the rate of 0.275 percent.

(7) Upon every person engaging within this state in the business of stevedoring and associated activities pertinent to the movement of goods and commodities in waterborne interstate or foreign commerce; as to such persons the amount of tax with respect to such business is equal to the gross proceeds derived from such activities multiplied by the rate of 0.275 percent. Persons subject to taxation under this subsection are exempt from payment of taxes imposed by chapter 82.16 RCW for that portion of their business subject to taxation under this subsection. Stevedoring and associated activities pertinent to the conduct of goods and commodities in waterborne interstate or foreign commerce are defined as all activities of a labor, service or transportation nature whereby cargo may be loaded or unloaded to or from vessels or barges, passing over, onto or under a wharf, pier, or similar structure; cargo may be moved to a warehouse or similar holding or storage yard or area to await further movement in import or export or may move to a consolidation freight station and be stuffed, unstuffed, containerized, separated or otherwise segregated or aggregated for delivery or loaded on any mode of transportation for delivery to its consignee. Specific activities included in this definition are: Wharfage, handling, loading, unloading, moving of cargo to a convenient place of delivery to the consignee or a convenient place for further movement to export mode; documentation services in connection with the receipt, delivery, checking, care, custody and control of cargo required in the transfer of cargo; imported automobile handling prior to delivery to consignee; terminal stevedoring and incidental vessel services, including but not limited to plugging and unplugging refrigerator service to containers, trailers, and other refrigerated cargo receptacles, and securing ship hatch covers.

(8)(a) Upon every person engaging within this state in the business of disposing of low-level waste, as defined in RCW 43.145.010; as to such persons the amount of the tax with respect to such business is equal to the gross income of the business, excluding any fees imposed under chapter 43.200 RCW, multiplied by the rate of 3.3 percent.

(b) If the gross income of the taxpayer is attributable to activities both within and without this state, the gross income attributable to this state must be determined in accordance with the methods of apportionment required under RCW 82.04.460.

(9) Upon every person engaging within this state as an insurance producer or title insurance agent licensed under chapter 48.17 RCW or a surplus line broker licensed under chapter 48.15 RCW; as to such persons, the amount of the tax with respect to such licensed activities is equal to the gross income of such business multiplied by the rate of 0.484 percent.

(10) Upon every person engaging within this state in business as a hospital, as defined in chapter 70.41 RCW, that is operated as a nonprofit corporation or by the state or any of its political subdivisions, as to such persons, the amount of tax with respect to such activities is equal to the gross income of the business multiplied by the rate of 0.75 percent through June 30, 1995, and 1.5 percent thereafter.

(11)(a) Beginning October 1, 2005, upon every person engaging within this state in the business of manufacturing commercial airplanes, or components of such airplanes, or making sales, at retail or wholesale, of commercial airplanes or components of such airplanes, manufactured by the seller, as to such persons the amount of tax with respect to such business is, in the case of manufacturers, equal to the value of the product manufactured and the gross proceeds of sales of the product manufactured, or in the case of processors for hire, equal to the gross income of the business, multiplied by the rate of: (i) 0.4235 percent from October 1, 2005, through June 30, 2007; and (ii) 0.2904 percent beginning July 1, 2007.

(b) Beginning July 1, 2008, upon every person who is not eligible to report under the provisions of (a) of this subsection (11) and is engaging within this state in the business of manufacturing tooling specifically designed for use in manufacturing commercial airplanes or components of such airplanes, or making sales, at retail or wholesale, of such tooling manufactured by the seller, as to such persons the amount of tax with respect to such business is, in the case of manufacturers, equal to the value of the product manufactured and the gross proceeds of sales of the product manufactured, or in the case of processors for hire, be equal to the gross income of the business, multiplied by the rate of 0.2904 percent.

(c) For the purposes of this subsection (11), "commercial airplane" and "component" have the same meanings as provided in RCW 82.32.550.

(d) In addition to all other requirements under this title, a person reporting under the tax rate provided in this subsection (11) must file a complete annual tax performance report with the department under RCW 82.32.534.

(e)(i) Except as provided in (e)(ii) of this subsection (11), this subsection (11) does not apply on and after July 1, 2040. (ii) With respect to the manufacturing of commercial airplanes or making sales, at retail or wholesale, of commercial airplanes, this subsection (11) does not apply on and after July 1st of the year in which the department makes a determination that any final assembly or wing assembly of any version or variant of a commercial airplane that is the basis of a siting of a significant commercial airplane manufacturing program in the state under RCW 82.32.850 has been sited outside the state of Washington. This subsection (11)(e)(ii) only applies to the manufacturing or sale of commercial airplanes that are the basis of a siting of a significant commercial airplane manufacturing program in the state under RCW 82.32.850.

(12)(a) Until July 1, 2024, upon every person engaging within this state in the business of extracting timber or extracting for hire timber; as to such persons the amount of tax with respect to the business is, in the case of extractors, equal to the value of products, including by-products, extracted, or in the case of extractors for hire, equal to the gross income of the business, multiplied by the rate of 0.4235 percent from July 1, 2006, through June 30, 2007, and 0.2904 percent from July 1, 2007, through June 30, 2024.

(b) Until July 1, 2024, upon every person engaging within this state in the business of manufacturing or processing for hire: (i) Timber into timber products or wood products; or (ii) timber products into other timber products or wood products; as to such persons the amount of the tax with respect to the business is, in the case of manufacturers, equal to the value of products, including by-products, manufactured, or in the case of processors for hire, equal to the gross income of the business, multiplied by the rate of 0.4235 percent from July 1, 2006, through June 30, 2007, and 0.2904 percent from July 1, 2007, through June 30, 2024.

(c) Until July 1, 2024, upon every person engaging within this state in the business of selling at wholesale: (i) Timber extracted by that person; (ii) timber products manufactured by that person from timber or other timber products; or (iii) wood products manufactured by that person from timber or timber products; as to such persons the amount of the tax with respect to the business is equal to the gross proceeds of sales of the timber, timber products, or wood products multiplied by the rate of 0.4235 percent from July 1, 2006, through June 30, 2007, and 0.2904 percent from July 1, 2007, through June 30, 2024.

(d) Until July 1, 2024, upon every person engaging within this state in the business of selling standing timber; as to such persons the amount of the tax with respect to the business is equal to the gross income of the business multiplied by the rate of 0.2904 percent. For purposes of

this subsection (12)(d), "selling standing timber" means the sale of timber apart from the land, where the buyer is required to sever the timber within thirty months from the date of the original contract, regardless of the method of payment for the timber and whether title to the timber transfers before, upon, or after severance.

(e) For purposes of this subsection, the following definitions apply: (i) "Biocomposite surface products" means surface material products containing, by weight or volume, more than fifty percent recycled paper and that also use nonpetroleum-based phenolic resin as a bonding agent. (ii) "Paper and paper products" means products made of interwoven cellulosic fibers held together largely by hydrogen bonding. "Paper and paper products" includes newsprint; office, printing, fine, and pressure-sensitive papers; paper napkins, towels, and toilet tissue; kraft bag, construction, and other kraft industrial papers; paperboard, liquid packaging containers, containerboard, corrugated, and solid-fiber containers including linerboard and corrugated medium; and related types of cellulosic products containing primarily, by weight or volume, cellulosic materials. "Paper and paper products" does not include books, newspapers, magazines, periodicals, and other printed publications, advertising materials, calendars, and similar types of printed materials. (iii) "Recycled paper" means paper and paper products having fifty percent or more of their fiber content that comes from postconsumer waste. For purposes of this subsection (12)(e)(iii), "postconsumer waste" means a finished material that would normally be disposed of as solid waste, having completed its life cycle as a consumer item. (iv) "Timber" means forest trees, standing or down, on privately or publicly owned land. "Timber" does not include Christmas trees that are cultivated by agricultural methods or short-rotation hardwoods as defined in RCW 84.33.035. (v) "Timber products" means: (A) Logs, wood chips, sawdust, wood waste, and similar products obtained wholly from the processing of timber, short-rotation hardwoods as defined in RCW 84.33.035, or both; (B) Pulp, including market pulp and pulp derived from recovered paper or paper products; and (C) Recycled paper, but only when used in the manufacture of biocomposite surface products. (vi) "Wood products" means paper and paper products; dimensional lumber; engineered wood products such as particleboard, oriented strand board, medium density fiberboard, and plywood; wood doors; wood windows; and biocomposite surface products.

(f) Except for small harvesters as defined in RCW 84.33.035, a person reporting under the tax rate provided in this subsection (12) must file a complete annual tax performance report with the department under RCW 82.32.534.

(13) Upon every person engaging within this state in inspecting, testing, labeling, and storing canned salmon owned by another person, as to such persons, the amount of tax with respect to such activities is equal to the gross income derived from such activities multiplied by the rate of 0.484 percent.

(14)(a) Upon every person engaging within this state in the business of printing a newspaper, publishing a newspaper, or both, the amount of tax on such business is equal to the gross income of the business multiplied by the rate of 0.35 percent until July 1, 2024, and 0.484 percent thereafter.

(b) A person reporting under the tax rate provided in this subsection (14) must file a complete annual tax performance report with the department under RCW 82.32.534.

[2018 c 164 § 3; 2017 c 135 § 11. Prior: 2015 3rd sp.s. c 6 § 602; 2015 3rd sp.s. c 6 § 205; prior: 2014 c 140 § 6; (2014 c 140 § 5 expired July 1, 2015); 2014 c 140 § 4; (2014 c 140 § 3 expired July 1, 2015); 2013 3rd sp.s. c 2 § 6; (2013 3rd sp.s. c 2 § 5 expired July 1, 2015); 2013

2nd sp.s. c 13 § 203; (2013 2nd sp.s. c 13 § 202 expired July 1, 2015); prior: (2012 2nd sp.s. c 6 § 602 expired July 1, 2015); 2012 2nd sp.s. c 6 § 204; 2011 c 2 § 203 (Initiative Measure No. 1107, approved November 2, 2010); 2010 1st sp.s. c 23 § 506; (2010 1st sp.s. c 23 § 505 expired June 10, 2010); 2010 c 114 § 107; prior: 2009 c 479 § 64; 2009 c 461 § 1; 2009 c 162 § 34; prior: 2008 c 296 § 1; 2008 c 217 § 100; 2008 c 81 § 4; prior: 2007 c 54 § 6; 2007 c 48 § 2; prior: 2006 c 354 § 4; 2006 c 300 § 1; prior: 2005 c 513 § 2; 2005 c 443 § 4; prior: 2003 2nd sp.s. c 1 § 4; 2003 2nd sp.s. c 1 § 3; 2003 c 339 § 11; 2003 c 261 § 11; 2001 2nd sp.s. c 25 § 2; prior: 1998 c 312 § 5; 1998 c 311 § 2; prior: 1998 c 170 § 4; 1996 c 148 § 2; 1996 c 115 § 1; prior: 1995 2nd sp.s. c 12 § 1; 1995 2nd sp.s. c 6 § 1; 1993 sp.s. c 25 § 104; 1993 c 492 § 304; 1991 c 272 § 15; 1990 c 21 § 2; 1987 c 139 § 1; prior: 1985 c 471 § 1; 1985 c 135 § 2; 1983 2nd ex.s. c 3 § 5; prior: 1983 1st ex.s. c 66 § 4; 1983 1st ex.s. c 55 § 4; 1982 2nd ex.s. c 13 § 1; 1982 c 10 § 16; prior: 1981 c 178 § 1; 1981 c 172 § 3; 1979 ex.s. c 196 § 2; 1975 1st ex.s. c 291 § 7; 1971 ex.s. c 281 § 5; 1971 ex.s. c 186 § 3; 1969 ex.s. c 262 § 36; 1967 ex.s. c 149 § 10; 1965 ex.s. c 173 § 6; 1961 c 15 § 82.04.260; prior: 1959 c 211 § 2; 1955 c 389 § 46; prior: 1953 c 91 § 4; 1951 2nd ex.s. c 28 § 4; 1950 ex.s. c 5 § 1, part; 1949 c 228 § 1, part; 1943 c 156 § 1, part; 1941 c 178 § 1, part; 1939 c 225 § 1, part; 1937 c 227 § 1, part; 1935 c 180 § 4, part; Rem. Supp. 1949 § 8370-4, part.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—Savings—Effective date—2008 c 81: See notes following RCW 82.08.975.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Aerospace Product Development - Preferential Rate (B&O Tax)

RCW 82.04.290

Tax on international investment management services or other business or service activities.

(1) Upon every person engaging within this state in the business of providing international investment management services, as to such persons, the amount of tax with respect to such business is equal to the gross income or gross proceeds of sales of the business multiplied by a rate of 0.275 percent.

(2)(a) Upon every person engaging within this state in any business activity other than or in addition to an activity taxed explicitly under another section in this chapter or subsection (1) or (3) of this section; as to such persons the amount of tax on account of such activities is equal to the gross income of the business multiplied by the rate of 1.5 percent.

(b) This subsection (2) includes, among others, and without limiting the scope hereof (whether or not title to materials used in the performance of such business passes to another by accession, confusion or other than by outright sale), persons engaged in the business of rendering any type of service which does not constitute a "sale at retail" or a "sale at wholesale." The value of advertising, demonstration, and promotional supplies and materials furnished to an agent by his or her principal or supplier to be used for informational, educational, and promotional purposes is

not considered a part of the agent's remuneration or commission and is not subject to taxation under this section.

(3)(a) Until July 1, 2040, upon every person engaging within this state in the business of performing aerospace product development for others, as to such persons, the amount of tax with respect to such business is equal to the gross income of the business multiplied by a rate of 0.9 percent.

(b) A person reporting under the tax rate provided in this subsection (3) must file a complete annual report with the department under RCW 82.32.534.

(c) "Aerospace product development" has the meaning as provided in RCW 82.04.4461.

[2014 c 97 § 404; (2014 c 97 § 403 expired July 9, 2014); 2013 3rd sp.s. c 2 § 8; 2013 c 23 § 314; 2011 c 174 § 101; 2008 c 81 § 6; 2005 c 369 § 8; 2004 c 174 § 2; 2003 c 343 § 2; 2001 1st sp.s. c 9 § 6; (2001 1st sp.s. c 9 § 4 expired July 1, 2001). Prior: 1998 c 343 § 4; 1998 c 331 § 2; 1998 c 312 § 8; 1998 c 308 § 5; 1998 c 308 § 4; 1997 c 7 § 2; 1996 c 1 § 2; 1995 c 229 § 3; 1993 sp.s. c 25 § 203; 1985 c 32 § 3; 1983 2nd ex.s. c 3 § 2; 1983 c 9 § 2; 1983 c 3 § 212; 1971 ex.s. c 281 § 8; 1970 ex.s. c 65 § 4; 1969 ex.s. c 262 § 39; 1967 ex.s. c 149 § 14; 1963 ex.s. c 28 § 2; 1961 c 15 § 82.04.290; prior: 1959 ex.s. c 5 § 5; 1955 c 389 § 49; prior: 1953 c 195 § 2; 1950 ex.s. c 5 § 1, part; 1949 c 228 § 1, part; 1943 c 156 § 1, part; 1941 c 178 § 1, part; 1939 c 225 § 1, part; 1937 c 227 § 1, part; 1935 c 180 § 4, part; Rem. Supp. 1949 § 8370-4, part.]

SELECTED NOTES:

Contingent expiration date—2014 c 97 §§ 401 and 403: See note following RCW 82.04.250.

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—Savings—Effective date—2008 c 81: See notes following RCW 82.08.975.

Aerospace Product Development Expenditures - Credit (B&O Tax)

RCW 82.04.4461

Credit—Preproduction development expenditures. (*Effective January 1, 2018, until July 1, 2040.*)

(1)(a)(i) In computing the tax imposed under this chapter, a credit is allowed for each person for qualified aerospace product development. For a person who is a manufacturer or processor for hire of commercial airplanes or components of such airplanes, credit may be earned for expenditures occurring after December 1, 2003. For all other persons, credit may be earned only for expenditures occurring after June 30, 2008.(ii) For purposes of this subsection, "commercial airplane" and "component" have the same meanings as provided in RCW 82.32.550.

(b) Before July 1, 2005, any credits earned under this section must be accrued and carried forward and may not be used until July 1, 2005. These carryover credits may be used at any time thereafter, and may be carried over until used. Refunds may not be granted in the place of a credit.

(2) The credit is equal to the amount of qualified aerospace product development expenditures of a person, multiplied by the rate of 1.5 percent.

(3) Except as provided in subsection (1)(b) of this section the credit must be claimed against taxes due for the same calendar year in which the qualified aerospace product development expenditures are incurred. Credit earned on or after July 1, 2005, may not be carried over. The credit for each calendar year may not exceed the amount of tax otherwise due under this chapter for the calendar year. Refunds may not be granted in the place of a credit.

(4) Any person claiming the credit must file a form prescribed by the department that must include the amount of the credit claimed, an estimate of the anticipated aerospace product development expenditures during the calendar year for which the credit is claimed, an estimate of the taxable amount during the calendar year for which the credit is claimed, and such additional information as the department may prescribe.

(5) The definitions in this subsection apply throughout this section.(a) "Aerospace product" has the meaning given in RCW 82.08.975.(b) "Aerospace product development" means research, design, and engineering activities performed in relation to the development of an aerospace product or of a product line, model, or model derivative of an aerospace product, including prototype development, testing, and certification. The term includes the discovery of technological information, the translating of technological information into new or improved products, processes, techniques, formulas, or inventions, and the adaptation of existing products and models into new products or new models, or derivatives of products or models. The term does not include manufacturing activities or other production-oriented activities, however the term does include tool design and engineering design for the manufacturing process. The term does not include surveys and studies, social science and humanities research, market research or testing, quality control, sale promotion and service, computer software developed for internal use, and research in areas such as improved style, taste, and seasonal design.(c) "Qualified aerospace product development" means aerospace product development performed within this state.(d) "Qualified aerospace product development expenditures" means operating expenses, including wages, compensation of a proprietor or a partner in a partnership as determined by the department, benefits, supplies, and computer expenses, directly incurred in qualified aerospace product development by a person claiming the credit provided in this section. The term does not include amounts paid to a person or to the state and any of its departments and institutions, other than a public educational or research institution to conduct qualified aerospace product development. The term does not include capital costs and overhead, such as expenses for land, structures, or depreciable property.(e) "Taxable amount" means the taxable amount subject to the tax imposed in this chapter required to be reported on the person's tax returns during the year in which the credit is claimed, less any taxable amount for which a credit is allowed under RCW 82.04.440.

(6) In addition to all other requirements under this title, a person claiming the credit under this section must file a complete annual tax performance report with the department under RCW 82.32.534.

(7) Credit may not be claimed for expenditures for which a credit is claimed under *RCW 82.04.4452.

(8) This section expires July 1, 2040.

[2017 c 135 § 15; 2013 3rd sp.s. c 2 § 9; 2010 c 114 § 115; 2008 c 81 § 7; 2007 c 54 § 11; 2003 2nd sp.s. c 1 § 7.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—Savings—Effective date—2008 c 81: See notes following RCW 82.08.975.

Finding—2003 2nd sp.s. c 1: "The legislature finds that the people of the state have benefited from the presence of the aerospace industry in Washington state. The aerospace industry provides good wages and benefits for the thousands of engineers, mechanics, and support staff working directly in the industry throughout the state. The suppliers and vendors that support the aerospace industry in turn provide a range of jobs. The legislature declares that it is in the public interest to encourage the continued presence of this industry through the provision of tax incentives. The comprehensive tax incentives in this act address the cost of doing business in Washington state compared to locations in other states." [2003 2nd sp.s. c 1 § 1.]

Commercial Airplane Manufacturing - Credit for Taxes Paid (B&O Tax)

RCW 82.04.4463

Credit—Property and leasehold taxes paid on property used for manufacture of commercial airplanes. (*Effective January 1, 2018, until July 1, 2040.*)

(1) In computing the tax imposed under this chapter, a credit is allowed for property taxes and leasehold excise taxes paid during the calendar year.

(2) The credit is equal to:

(a)(i)(A) Property taxes paid on buildings, and land upon which the buildings are located, constructed after December 1, 2003, and used exclusively in manufacturing commercial airplanes or components of such airplanes; and (B) Leasehold excise taxes paid with respect to buildings constructed after January 1, 2006, the land upon which the buildings are located, or both, if the buildings are used exclusively in manufacturing commercial airplanes or components of such airplanes; and(C) Property taxes or leasehold excise taxes paid on, or with respect to, buildings constructed after June 30, 2008, the land upon which the buildings are located, or both, and used exclusively for aerospace product development, manufacturing tooling specifically designed for use in manufacturing commercial airplanes or their components, or in providing aerospace services, by persons not within the scope of (a)(i)(A) and (B) of this subsection (2) and are taxable under RCW 82.04.290(3), 82.04.260(11)(b), or 82.04.250(3); or

(ii) Property taxes attributable to an increase in assessed value due to the renovation or expansion, after: (A) December 1, 2003, of a building used exclusively in manufacturing commercial airplanes or components of such airplanes; and (B) June 30, 2008, of buildings used exclusively for aerospace product development, manufacturing tooling specifically designed for use in manufacturing commercial airplanes or their components, or in providing aerospace services, by persons not within the scope of (a)(ii)(A) of this subsection (2) and are taxable under RCW 82.04.290(3), 82.04.260(11)(b), or 82.04.250(3); and

(b) An amount equal to:

(i)(A) Property taxes paid, by persons taxable under RCW 82.04.260(11)(a), on machinery and equipment exempt under RCW 82.08.02565 or 82.12.02565 and acquired after December 1, 2003; (B) Property taxes paid, by persons taxable under RCW 82.04.260(11)(b), on machinery and equipment exempt under RCW 82.08.02565 or 82.12.02565 and acquired after June 30, 2008; or (C) Property taxes paid, by persons taxable under RCW 82.04.250(3) or 82.04.290(3), on computer hardware, computer peripherals, and software exempt under RCW 82.08.975 or 82.12.975 and acquired after June 30, 2008.

(ii) For purposes of determining the amount eligible for credit under (i)(A) and (B) of this subsection (2)(b), the amount of property taxes paid is multiplied by a fraction. (A) The numerator of the fraction is the total taxable amount subject to the tax imposed under RCW 82.04.260(11) (a) or (b) on the applicable business activities of manufacturing commercial airplanes, components of such airplanes, or tooling specifically designed for use in the manufacturing of commercial airplanes or components of such airplanes. (B) The denominator of the fraction is the total taxable amount subject to the tax imposed under all manufacturing classifications in chapter 82.04 RCW. (C) For purposes of both the numerator and denominator of the fraction, the total taxable amount refers to the total taxable amount required to be reported on the person's returns for the calendar year before the calendar year in which the credit under this section is earned. The department may provide for an alternative method for calculating the numerator in cases where the tax rate provided in RCW 82.04.260(11) for manufacturing was not in effect during the full calendar year before the calendar year in which the credit under this section is earned. (D) No credit is available under (b)(i)(A) or (B) of this subsection (2) if either the numerator or the denominator of the fraction is zero. If the fraction is greater than or equal to nine-tenths, then the fraction is rounded to one. (E) As used in (b)(ii)(C) of this subsection (2), "returns" means the tax returns for which the tax imposed under this chapter is reported to the department.

(3) The definitions in this subsection apply throughout this section, unless the context clearly indicates otherwise.(a) "Aerospace product development" has the same meaning as provided in RCW 82.04.4461.(b) "Aerospace services" has the same meaning given in RCW 82.08.975.(c) "Commercial airplane" and "component" have the same meanings as provided in RCW 82.32.550.

(4) A credit earned during one calendar year may be carried over to be credited against taxes incurred in a subsequent calendar year, but may not be carried over a second year. No refunds may be granted for credits under this section.

(5) In addition to all other requirements under this title, a person claiming the credit under this section must file a complete annual tax performance report with the department under RCW 82.32.534.

(6) This section expires July 1, 2040.

[2017 c 135 § 16; 2013 3rd sp.s. c 2 § 10; 2010 1st sp.s. c 23 § 515; (2010 1st sp.s. c 23 § 514 expired June 10, 2010); 2010 c 114 § 116; 2008 c 81 § 8; 2006 c 177 § 10; 2005 c 514 § 501; 2003 2nd sp.s. c 1 § 15.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—Savings—Effective date—2008 c 81: See notes following RCW 82.08.975.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461

Aerospace Product Development Computer Expenditures (Sales and Use Tax)

RCW 82.08.975

Exemptions—Computer parts and software related to the manufacture of commercial airplanes. (Expires July 1, 2040.)

(1) The tax levied by RCW 82.08.020 does not apply to sales of computer hardware, computer peripherals, or software, not otherwise eligible for exemption under RCW 82.08.02565, used primarily in the development, design, and engineering of aerospace products or in providing aerospace services, or to sales of or charges made for labor and services rendered in respect to installing the computer hardware, computer peripherals, or software.

(2) The exemption is available only when the buyer provides the seller with an exemption certificate in a form and manner prescribed by the department. The seller must retain a copy of the certificate for the seller's files.

(3) The definitions in this subsection apply throughout this section unless the context requires otherwise.

(a) "Aerospace products" means:(i) Commercial airplanes and their components;(ii) Machinery and equipment that is designed and used primarily for the maintenance, repair, overhaul, or refurbishing of commercial airplanes or their components by federal aviation regulation part 145 certificated repair stations; and(iii) Tooling specifically designed for use in manufacturing commercial airplanes or their components.

(b) "Aerospace services" means the maintenance, repair, overhaul, or refurbishing of commercial airplanes or their components, but only when such services are performed by a FAR part 145 certificated repair station.

(c) "Commercial airplane" and "component" have the same meanings provided in RCW 82.32.550.

(d) "Peripherals" includes keyboards, monitors, mouse devices, and other accessories that operate outside of the computer, excluding cables, conduit, wiring, and other similar property.

(4) This section expires July 1, 2040.

[2013 3rd sp.s. c 2 § 11; 2008 c 81 § 2; 2003 2nd sp.s. c 1 § 9.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Findings—2008 c 81: "The legislature finds that the aerospace industry provides good wages and benefits for the thousands of engineers, mechanics, support staff, and other employees working directly in the industry throughout the state. The legislature further finds that suppliers and vendors that support the aerospace industry in turn provide a range of well-paying jobs. In 2003, and again in 2006, the legislature determined it was in the public interest to encourage the continued presence of this industry through the provision of tax incentives. However, the legislature recognizes that key elements of Washington's aerospace industry cluster were afforded few, if any, of the aerospace tax incentives enacted in 2003 and 2006. The comprehensive tax incentives in this act are intended to more comprehensively address the cost of doing business in Washington state compared to locations in other states for a larger segment of the aerospace industry cluster." [2008 c 81 § 1.]

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Commercial Airplane Production Facilities (Sales and Use Tax)

RCW 82.08.980

Exemptions—Labor, services, and personal property related to the manufacture of commercial airplanes. (*Effective January 1, 2018, until July 1, 2040.*)

(1) The tax levied by RCW 82.08.020 does not apply to:

(a) Charges, for labor and services rendered in respect to the constructing of new buildings, made to (i) a manufacturer engaged in the manufacturing of commercial airplanes or the fuselages or wings of commercial airplanes or (ii) a port district, political subdivision, or municipal corporation, to be leased to a manufacturer engaged in the manufacturing of commercial airplanes or the fuselages or wings of commercial airplanes;

(b) Sales of tangible personal property that will be incorporated as an ingredient or component of such buildings during the course of the constructing; or

(c) Charges made for labor and services rendered in respect to installing, during the course of constructing such buildings, building fixtures not otherwise eligible for the exemption under RCW 82.08.02565(2)(b).

(2) The exemption is available only when the buyer provides the seller with an exemption certificate in a form and manner prescribed by the department. The seller must retain a copy of the certificate for the seller's files.

(3) No application is necessary for the tax exemption in this section. However, in order to qualify under this section before starting construction, the port district, political subdivision, or municipal corporation must have entered into an agreement with the manufacturer to build such a facility. A person claiming the exemption under this section is subject to all the requirements of chapter 82.32 RCW. In addition, the person must file a complete annual tax performance report with the department under RCW 82.32.534.

(4) The exemption in this section applies to buildings or parts of buildings, including buildings or parts of buildings used for the storage of raw materials or finished product, that are used primarily in the manufacturing of any one or more of the following products:

(a) Commercial airplanes;

(b) Fuselages of commercial airplanes; or

(c) Wings of commercial airplanes.

(5) For the purposes of this section, "commercial airplane" has the meaning given in RCW 82.32.550.

(6) This section expires July 1, 2040.

[2017 c 135 § 25; 2013 3rd sp.s. c 2 § 3; 2010 c 114 § 126; 2003 2nd sp.s. c 1 § 11.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Superefficient Airplane Production Facilities (Leasehold Excise Tax)

RCW 82.29A.137

Exemptions—Certain leasehold interests related to the manufacture of superefficient airplanes. (*Effective January 1, 2018, until July 1, 2040.*)

(1) All leasehold interests in port district facilities exempt from tax under RCW 82.08.980 or 82.12.980 and used by a manufacturer engaged in the manufacturing of superefficient airplanes, as defined in RCW 82.32.550, are exempt from tax under this chapter. A person claiming the credit under RCW 82.04.4463 is not eligible for the exemption under this section.

(2) In addition to all other requirements under this title, a person claiming the exemption under this section must file a complete annual tax performance report with the department under RCW 82.32.534.

(3) This section expires July 1, 2040.

[2017 c 135 § 35; 2013 3rd sp.s. c 2 § 13; 2010 c 114 § 134; 2003 2nd sp.s. c 1 § 13.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Superefficient Airplane Production Facilities (Property Tax)

RCW 84.36.655

Property related to the manufacture of superefficient airplanes. (*Effective January 1, 2018, until July 1, 2040.*)

(1) Effective January 1, 2005, all buildings, machinery, equipment, and other personal property of a lessee of a port district eligible under RCW 82.08.980 and 82.12.980, used exclusively in manufacturing superefficient airplanes, are exempt from property taxation. A person taking the credit under RCW 82.04.4463 is not eligible for the exemption under this section. For the purposes of this section, "superefficient airplane" and "component" have the meanings given in RCW 82.32.550.

(2) In addition to all other requirements under this title, a person claiming the exemption under this section must file a complete annual tax performance report with the department under RCW 82.32.534.

(3) Claims for exemption authorized by this section must be filed with the county assessor on forms prescribed by the department and furnished by the assessor. The assessor must verify and approve claims as the assessor determines to be justified and in accordance with this section. No claims may be filed after December 31, 2039. The department may adopt rules, under the provisions of chapter 34.05 RCW, as necessary to properly administer this section.

(4) This section applies to taxes levied for collection in 2006 and thereafter.(5) This section expires July 1, 2040.

[2017 c 135 § 46; 2013 3rd sp.s. c 2 § 14; 2010 c 114 § 151; 2003 2nd sp.s. c 1 § 14.]

SELECTED NOTES:

Contingent effective date—2013 3rd sp.s. c 2: See RCW 82.32.850.

Findings—Intent—2013 3rd sp.s. c 2: See note following RCW 82.32.850.

Finding—2003 2nd sp.s. c 1: See note following RCW 82.04.4461.

Appendix A: Tax preference details

Nine tax preferences comprise the aerospace package subject to this review

The nine tax preferences include preferential tax rates, credits, and exemptions, and affect four tax programs, the Business and Occupation (B&O) Tax, the Sales and Use Tax, the Property Tax, and the Leasehold Excise Tax. This appendix provides additional detail about each preference's public policy objectives, statutory provisions, and the estimated beneficiary savings.

The Legislature stated four public policy objectives

The Legislature initially created these tax preferences in 2003 with three stated policy objectives:

- To encourage the continued presence of the aerospace industry in Washington;
- To reduce the cost of doing business in Washington for the aerospace industry compared to locations in other states; and
- To provide jobs with good wages and benefits.

When extending and expanding the preferences in 2013, the Legislature stated an additional policy objective, to maintain and grow Washington's aerospace industry workforce.

The preferences share common definitions

Statute defines a “commercial airplane” as an airplane certified by the Federal Aviation Administration for transporting persons or property, and any military derivative of a commercial airplane. Private airplanes, helicopters, and military fighter aircraft do not qualify for the preferences.

Qualifying components must be federally certified for installation or assembly into a commercial airplane.

The statute defines a “superefficient airplane” as a twin aisle airplane that uses 15% to 20% less fuel than similar airplanes on the market. The statute also includes specifications that uniquely describe Boeing’s 787 line of commercial airplanes.

Statute defines “aerospace products” as:

- Commercial airplanes and their components;

- Machinery and equipment designed and used primarily for the maintenance, repair, overhaul, or refurbishing of commercial airplanes or their components by federally certified aviation repair stations; and
- Tooling specifically designed for use in manufacturing commercial airplanes or their components.
- Generally, the preferences that apply to airplane manufacturers also apply to "processors for hire." A processor for hire is a business that manufactures products from materials owned by another business.

The preferences share a common expiration date

The aerospace preferences are scheduled to expire on July 1, 2040.

Most of the preferences were enacted in the same legislation in 2003, contingent on the location of a facility for assembling a superefficient airplane in Washington. On December 19, 2003, governor Locke signed an agreement with The Boeing Company to build the 787 airplane in Everett, which met the conditions for the preferences to become effective. The certified aircraft repair firms preferential B&O tax rate was also enacted in 2003, through different legislation.

In 2013, the Legislature extended the expiration dates for the preferences from July 1, 2024 to July 1, 2040 if a new commercial airplane manufacturing program was sited in Washington by June 30, 2017. This contingency was satisfied when the Department of Revenue certified that Boeing had selected Everett as the location of final assembly of the 777X as well as the company's composite wing center.

The preferences share common accountability reporting

Beneficiaries of the aerospace tax preferences must file an annual tax performance report with the Department of Revenue (DOR). The report requires information detailing employment and wages for positions in Washington, and taxpayers may authorize DOR to obtain this information directly from the Employment Security Department. Most information contained in the annual tax performance report is subject to public disclosure, including:

- Employment and wage information for employment positions in Washington.
- Total number of full-time, part-time, and temporary positions.
- Amount of tax preference claimed.

The preferences are subject to recurring JLARC review

Statute requires that JLARC review the nine tax preferences every five years, beginning in 2019.

Additional aerospace-related tax preferences reviewed in 2019

Two additional aerospace-related preference are not included in this review, and are presented in separate reports (Commercial Airplane Parts: Place of Sale and Aircraft Part Prototypes), for three reasons:

- They were enacted at different times than the majority of the above preferences.
- They do not have expiration dates.
- They are not required to be reviewed every five years.

For a detailed legislative history prior to 2013, refer to the 2014 JLARC study of the aerospace tax preferences.

Preferential B&O tax rates

Three of the preferences provide reduced business and occupation (B&O) tax rates for businesses that manufacture qualifying aerospace products and provide qualifying aerospace services.

Commercial Airplane Manufacturing - Preferential B&O Tax Rate (RCW 82.04.260)

Manufacturers and processors for hire of commercial airplanes and their components, and manufacturers of tooling specifically designed for use in manufacturing aerospace products are taxed at the aerospace manufacturing B&O tax rate of 0.2904%. When a manufacturer sells the product either at wholesale or retail in-state, the manufacturer owes aerospace retailing or wholesaling B&O tax at the same preferential rate of 0.2904%. A manufacturer subject to both the aerospace manufacturing B&O tax and the aerospace retailing or wholesaling B&O tax is allowed a Multiple Activities Tax Credit (MATC) against the aerospace retailing or wholesaling B&O tax for the aerospace manufacturing B&O tax paid per RCW 82.04.440(2). In general, manufacturers and wholesalers, not provided a special B&O tax rate, and retailers of tangible personal property used in interstate transportation, pay B&O tax at the rate of 0.484%.

Exhibit A1: Beneficiary Savings Estimate - Commercial Airplane Manufacturing - Preferential B&O Tax Rate

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$110,400,000
	2015	$122,900,000
2015-2017 7/1/2015 - 6/30/2017	2016	$125,550,000
	2017	$112,140,000
2017-2019 7/1/2017 - 6/30/2019	2018	$109,570,000
	2019	$116,130,000
2019-2021 7/1/2019 - 6/30/2021	2020	$121,210,000
	2021	$126,210,000
2021-2023 7/1/2021 - 6/30/2023	2022	$131,530,000
	2023	$137,160,000
	2021-23 Biennium	**$268,690,000**

Source: JLARC analysis of DOR tax return data.

Aerospace Product Development – Preferential B&O Tax Rate (RCW 82.04.290)

Non-manufacturers that research, design, or engineer aerospace products for commercial airplanes for others to manufacture are taxed at 0.9%. Firms providing research, design, and engineering services for others are generally taxed at the rate of 1.5%.

Exhibit A2: Beneficiary Savings Estimate - Aerospace Product Development - Preferential B&O Tax Rate

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$1,250,000
	2015	$1,150,000
2015-2017 7/1/2015 - 6/30/2017	2016	$1,570,000
	2017	$2,280,000

Biennium	Fiscal Year	Estimated Beneficiary Savings
2017-2019 7/1/2017 - 6/30/2019	2018	$2,520,000
	2019	$2,690,000
2019-2021 7/1/2019 - 6/30/2021	2020	$2,910,000
	2021	$3,060,000
2021-2023 7/1/2021 - 6/30/2023	2022	$3,040,000
	2023	$3,010,000
	2021-23 Biennium	**$6,050,000**

Source: JLARC analysis of DOR tax return data.

Certified Aircraft Repair Firms – Preferential B&O Tax Rate (RCW 82.04.250)

Federally certified aviation repair stations are taxed at a preferential business and occupation (B&O) tax rate of 0.2904% on sales of repair services and component parts. Other interstate transportation equipment repair services are taxed at the B&O rate of 0.484%.

Exhibit A3: Beneficiary Savings Estimate - Certified Aircraft Repair Firms - Preferential B&O Tax Rate

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$540,000
	2015	$670,000
2015-2017 7/1/2015 - 6/30/2017	2016	$650,000
	2017	$670,000
2017-2019 7/1/2017 - 6/30/2019	2018	$710,000
	2019	$750,000
2019-2021 7/1/2019 - 6/30/2021	2020	$780,000
	2021	$810,000
2021-2023 7/1/2021 - 6/30/2023	2022	$850,000
	2023	$880,000
	2021-23 Biennium	**$1,730,000**

Source: JLARC analysis of DOR tax return data.

Exhibit A4: Summary of aerospace preferential rates

Beneficiaries	Preferential Rate	General Classifications	General Rate
Manufacturing and Selling			
Manufacturers or processors for hire of commercial airplanes and components	0.2904%	Manufacturing, wholesaling, or retailing	0.484%
Manufacturers of tooling for use in manufacturing commercial airplanes and components	0.2904%	Manufacturing, wholesaling, or retailing	0.484%
Retail sales of repair services and parts at federally certified aviation repair stations	0.2904%	Other interstate transportation equipment repair services and parts	0.484%
Providing Services			
Researchers, designers, and engineers of aerospace products	0.9%	Service and other	1.5%

Source: JLARC analysis of RCW.

B&O tax credits

Two preferences provide credits against a taxpayer's B&O tax liability. The amount of each credit that may be claimed depends on the level of certain business expenditures or taxes.

Aerospace Product Development Expenditures – B&O Tax Credit (RCW 82.04.4461)

A **B&O tax credit equal to 1.5% of qualifying expenditures** for businesses that develop aerospace products. Qualifying expenditures include wages and benefits, supplies, and computer expenses, but not capital costs and overhead, such as expenses for land, structures, or depreciable property. The credit must be taken in the year in which the qualifying expenditures occur, except for credits earned before July 1, 2005, which can be carried over and used at a later date. If the amount of credit exceeds tax liability, the credit cannot be carried over to reduce tax liability in subsequent years, and cannot be refunded.

Exhibit A.5: Beneficiary Savings Estimate - Aerospace Product Development Expenditures - B&O Tax Credit

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$71,420,000
	2015	$94,940,000
2015-2017 7/1/2015 - 6/30/2017	2016	$111,370,000
	2017	$87,280,000
2017-2019 7/1/2017 - 6/30/2019	2018	$83,780,000
	2019	$89,500,000
2019-2021 7/1/2019 - 6/30/2021	2020	$96,820,000
	2021	$101,950,000
2021-2023 7/1/2021 - 6/30/2023	2022	$101,400,000
	2023	$100,360,000
	2021-23 Biennium	**$201,760,000**

Source: JLARC analysis of DOR tax return data.

Commercial Airplane Manufacturing - B&O Tax Credit for Property/Leasehold Excise Taxes Paid (RCW 82.04.4463)

Provides a **B&O tax credit for property taxes or leasehold excise taxes paid** on property used exclusively in manufacturing aerospace products, aerospace product development, or in providing aerospace services at certified aviation repair stations. The credit applies to new buildings, the land on which the buildings are located, and on the increase in assessed value from renovations and expansions. The credit is also available for property taxes paid on certain personal property.

To receive the B&O tax credit, buildings must be used exclusively in manufacturing commercial airplanes or their components, or tooling specifically designed for use in manufacturing. The credit may also be claimed for new buildings and land, renovations, and expansion for facilities used for aerospace product development and for maintenance, repair, overhaul, or refurbishing commercial airplanes or their components by federally certified aviation repair stations.

The B&O tax credit provided to aerospace businesses applies to manufacturing machinery and equipment, computer hardware, computer peripherals, and software if these items are exempt from sales and use taxes. The B&O tax credit for manufacturing machinery and equipment is calculated based on a firm's aerospace product income as a percentage of its total manufactured goods income.

The B&O tax credit cannot be claimed until the real and personal property taxes have been paid. If the credit exceeds B&O tax owed, it may be carried forward one year. Unused credits are not refundable.

Exhibit A6: Beneficiary Savings Estimate - Commercial Airplane Manufacturing - B&O Tax Credit for Property/Leasehold Excise Taxes Paid

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$16,290,000
	2015	$29,550,000
2015-2017 7/1/2015 - 6/30/2017	2016	$39,360,000
	2017	$24,770,000
2017-2019 7/1/2017 - 6/30/2019	2018	$38,390,000
	2019	$34,180,000
2019-2021 7/1/2019 - 6/30/2021	2020	$34,180,000
	2021	$34,180,000
2021-2023 7/1/2021 - 6/30/2023	2022	$34,180,000
	2023	$34,180,000
	2021-23 Biennium	**$68,360,000**

Source: JLARC analysis of DOR tax return data.

Sales and Use Tax Exemptions

Two preferences exempt certain purchases from sales and use tax.

Aerospace Product Development Computer Expenditures – SUT Exemption (RCW 82.08.975)

A **sales and use tax exemption for sales of computer hardware, computer peripherals, and software** used primarily in developing, designing, and engineering aerospace products and providing aerospace services. Aerospace services are defined in statute as maintenance, repair, overhaul, or refurbishing of commercial airplanes or their components by federally certified repair stations. Sales of or charges made for labor and services for installing the computer hardware, computer peripherals, and software are also exempt.

Exhibit A7: Beneficiary Savings Estimate - Aerospace Product Development Computer Expenditures - SUT Exemption

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$3,110,000
	2015	$3,080,000
2015-2017 7/1/2015 - 6/30/2017	2016	$3,100,000
	2017	$4,920,000
2017-2019 7/1/2017 - 6/30/2019	2018	$4,500,000
	2019	$4,500,000
2019-2021 7/1/2019 - 6/30/2021	2020	$4,500,000
	2021	$4,500,000
2021-2023 7/1/2021 - 6/30/2023	2022	$4,500,000
	2023	$4,500,000
	2021-23 Biennium	$9,000,000

Source: JLARC analysis of DOR tax return data.

Commercial Airplane Production Facilities – SUT Exemptions (RCW 82.08.980)

An **exemption from sales and use taxes on labor, services, and materials to construct new buildings used for manufacturing commercial airplanes.** The exemption also includes labor and services for installation of fixtures during construction of the new building. The exemption applies to either a manufacturer of commercial airplanes, fuselages, or wings, or to a port district, political subdivision, or municipal corporation leasing property to a manufacturer of those products.

Exhibit A8: Beneficiary Savings Estimate - Commercial Airplane Production Facilities - SUT Exemption

Biennium	Fiscal Year	Estimated Beneficiary Savings
2013-2015 7/1/2013 - 6/30/2015	2014	$19,590,000
	2015	$51,700,000
2015-2017 7/1/2015 - 6/30/2017	2016	$22,820,000
	2017	$6,800,000

Biennium	Fiscal Year	Estimated Beneficiary Savings
2017-2019 7/1/2017 - 6/30/2019	2018	$6,800,000
	2019	$6,800,000
2019-2021 7/1/2019 - 6/30/2021	2020	$6,800,000
	2021	$6,800,000
2021-2023 7/1/2021 - 6/30/2023	2022	$6,800,000
	2023	$6,800,000
	2021-23 Biennium	$13,600,000

Source: JLARC analysis of DOR tax return data.

Property and Leasehold Excise Tax Exemptions

Two preferences would exempt certain superefficient airplane (Boeing 787) manufacturing facilities from leasehold excise and property taxes if they were built on port property. Boeing chose to build its 787 final assembly facility on private property rather than property leased from a port. As such, no superefficient airplane manufacturing takes place on port district property, and these preferences are not currently being claimed.

Superefficient Airplane Production Facilities – Leasehold Excise Tax Exemption (RCW 82.29A.137)

Provides a **leasehold excise tax exemption** to the manufacturer of a "superefficient airplane" (Boeing 787) for a facility located on port district property.

This preference is not being claimed, and beneficiary savings are $0.

Superefficient Airplane Production Facilities – Property Tax Exemption (RCW 84.36.655)

Provides a **property tax exemption for all personal property** such as equipment and computers to the manufacturer of a "superefficient airplane" (Boeing 787) at a facility located on port district property.

This preference is not being claimed, and beneficiary savings are $0.

Appendix B: Ernst & Young tax competitiveness report

Ernst & Young estimated relative business tax competitiveness for aerospace manufacturing firms

JLARC staff contracted with Ernst & Young to perform business tax competitiveness analysis

Ernst & Young (EY) analyzed the state and local tax climate for aerospace manufacturing firms in Washington and a set of 13 benchmark states. The other states were selected based on their high relative concentration of aerospace employment or their high ranking in the Teal Group's Aerospace Competitive Economics Study[13]. The study estimated the tax burdens that would be faced by a representative small (50 employees) and large (10,000 employees) aerospace firm making investments in new facilities in Washington and these benchmark states:

- Arizona
- Alabama
- California
- Colorado
- Connecticut
- Georgia
- Kansas
- Missouri
- North Carolina
- Ohio
- South Carolina
- Texas
- Utah

Details of the Analysis

To perform the analysis, EY used a discounted cash flow model programmed with the financial features of the aerospace products and parts manufacturing industry (NAICS 3364) and the relevant tax features and rates in each state. The financial profiles estimate metrics such as employment, wages, business assets, income and expenses based on public data and EY calculations.

EY analyzed the systems in each of the benchmark states and coded them into its model. The model estimates the tax burdens resulting from corporate income tax, sales tax on business inputs, property tax, franchise tax, and gross receipts taxes such as the Washington B&O tax and Ohio Commercial Activities Tax. The burden of these taxes was combined to estimate the effective tax rate (ETR), expressed as the percentage change in the hypothetical business' rate of return due to taxes.

Next, EY analyzed the availability of statutory and negotiated tax incentives and evaluated their impact on the aerospace business' ETR in each state. The analysis included the following categories of statutory tax incentives, available to all businesses that meet statutory eligibility requirements:

- Tax credits due to job creation.
- Tax credits due to investment.
- Wage rebates.

[13] Commissioned by the Choose Washington New-Mid Market Airplane (NMA) council, the report addresses the competitive business environment that aerospace manufacturing companies face considering locating in the 50 U.S. states or the District of Columbia.

- Preferential tax rates.
- Tax credits due to research and experimentation (R&E) expenditures.
- Sales and use tax exemptions on capital investments.

The analysis also included a review of discretionary or negotiated incentives that may be available to the representative businesses. This portion of the review relies on the experience and knowledge of EY professionals and the typical incentive size for similar projects. Because of their discretionary nature, there is no formal source for the level of benefits and the impact of such potentially available incentives would not be verifiable public information.

The results are presented as a comparison of the states' effective tax rates for a small and a large representative business at three stages: before any tax incentives, after statutory tax incentives, and after statutory and negotiated incentives. Both the states' ETR and their relative rankings are reported for the small and the large firm.

Exhibit B1: Pre- and post-incentive effective tax rates for small firms

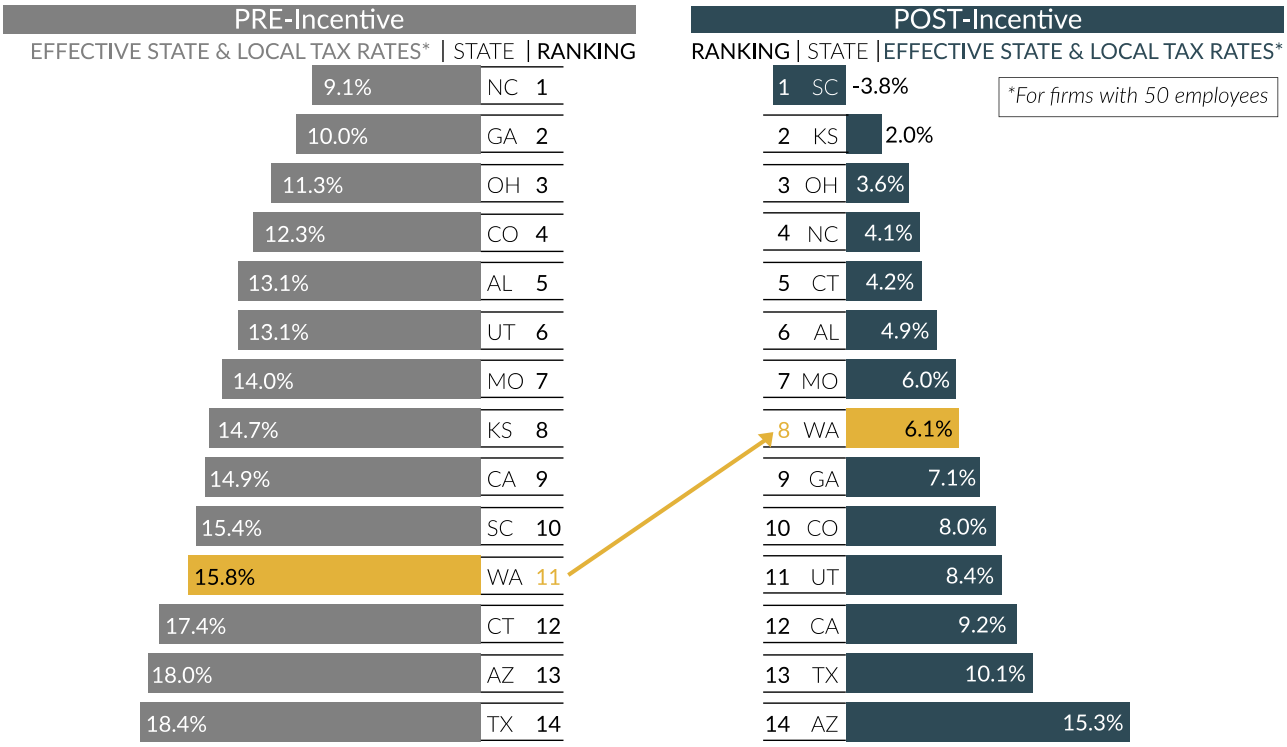
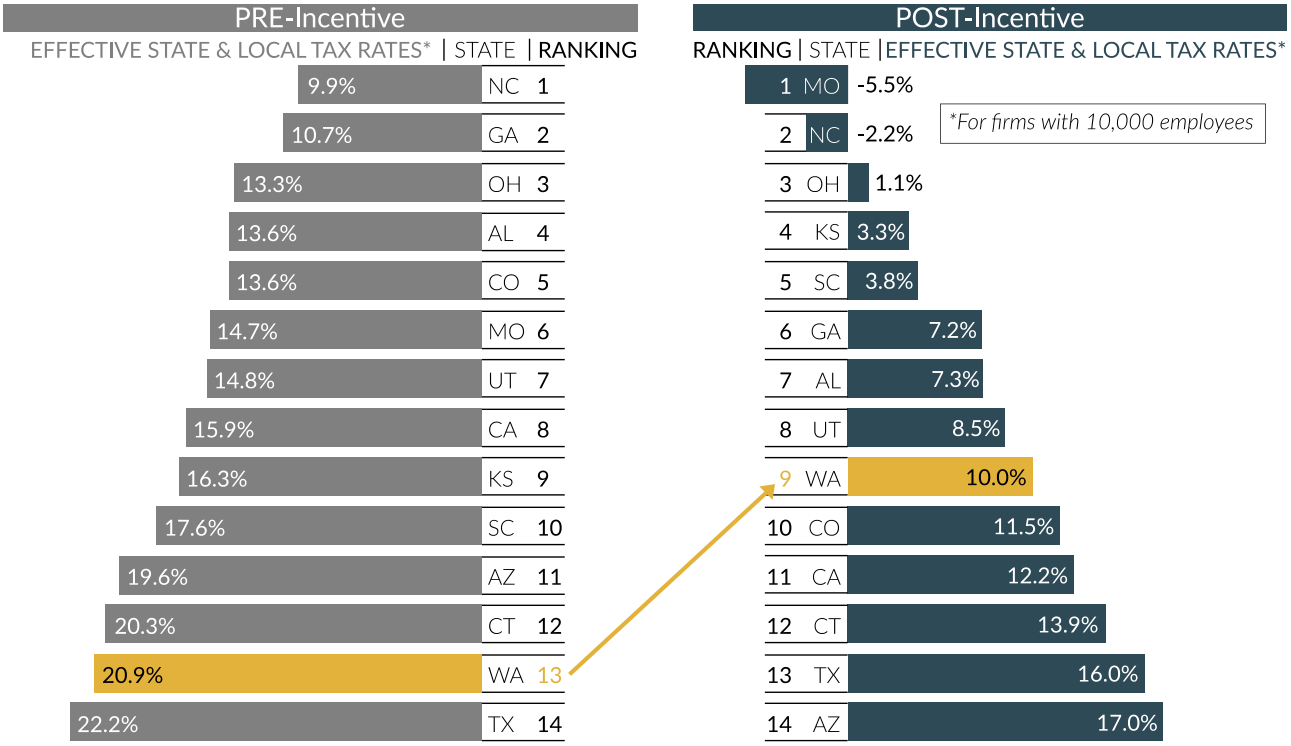


Exhibit B2: Pre- and post-incentive effective tax rates for large firms



Full Ernst & Young Report Available

Click here for the full EY report, which provides additional detail about the methodology, data sources, and results of the analysis.

Appendix C: REMI overview

What is REMI?

JLARC staff used Regional Economic Models, Inc.'s (REMI) Tax-PI software (version 2.2) to model the economic impacts for several tax preference reviews in 2019, including the aerospace tax preferences.

REMI software is used by approximately 30 state governments and dozens of private sector consulting firms, research universities, and international clients.

Model is tailored to Washington and includes government sector

Tax-PI is an economic impact tool used to evaluate the fiscal and economic effects and the demographic impacts of a tax policy change. The software includes various features that make it particularly useful for analyzing the economic and fiscal impacts of tax preferences:

- REMI staff consulted with staff from the Office of Financial Management (OFM) and customized a statewide model to reflect Washington's economy.

- The model contains 160 industry sectors, based on the North American Industry Classification System (NAICS) codes.
- In contrast to other modeling software, Tax-PI includes state and local government as a sector. This permits users to see the trade-offs associated with tax policy changes (e.g., effects on Washington's economy from both increased expenditures by businesses due to a tax preference, along with decreased spending by government due to the associated revenue loss).
- For current revenue and expenditure data, users can input information to reflect their state's economic and fiscal situation. This allows JLARC staff to calibrate a state budget using up-to-date information from the Economic and Revenue Forecast Council (ERFC) and the Legislative Evaluation and Accountability Program (LEAP).
- The model can forecast economic and revenue impacts multiple years into the future.

Model simulates the full impact of a tax policy change

The REMI model accounts for the direct, indirect, and induced effects as they spread through the state's economy, which allows users to simulate the full impact of a tax policy change over time.

- Direct effects are industry specific and capture how a target industry responds to a particular policy change (e.g., changes in industry employment following a change in tax policy).
- Indirect effects capture employment and spending decisions by businesses in the targeted industry's supply chain that provide goods and services.
- Induced effects capture the in-state spending and consumption habits of employees in targeted and related industries.

The REMI model produces year-by-year estimates of the total statewide effects of a tax policy change. Impacts are measured as the difference between a baseline economic and revenue forecast and the estimated economic and revenue effects after the policy change.

Model includes economic, demographic, and fiscal variables

The REMI model is a macroeconomic impact model that incorporates aspects of four major economic modeling approaches: input-output, general equilibrium, econometric, and new economic geography. The foundation of the model, the inter-industry matrices found in the input-output models, captures Washington's industry structure and the transactions between industries. Layered on top of this structure is a complex set of mathematical equations used to estimate how private industry, consumers, and state and local governments respond to a policy change over time.

- The supply side of the model includes many economic variables representing labor supply, consumer prices, and capital and energy costs with elasticities for both the consumer and business sectors.
- Regional competitiveness is modeled via imports, exports, and output.
- Demographics are modeled using population dynamics (births, deaths, and economic and retirement migration) and includes cohorts for age, sex, race, and retirement.

- Demographic information informs the model's estimates for economic consumption and labor supply.
- The dynamic aspect comes from the ability to adjust variables over time as forecasted economic conditions change.

While the model is complex and forecasting involves some degree of uncertainty, Tax-PI provides a tool for practitioners to simulate how tax policy and the resulting industry changes affect Washington's economy, population, and fiscal situation.

Appendix D: REMI analysis

REMI analysis illustrates range of potential employment impacts of not extending aerospace tax preferences in 2013

JLARC staff used REMI's Tax-PI to model three scenarios that illustrate potential employment impacts of not extending the aerospace tax preferences in 2013.

This technical appendix provides background detail and supporting information for the JLARC staff analysis that led to the results summarized in Tab 4.

This appendix is divided into three sections:

- **REMI methodology** details how JLARC staff set up and calibrated the Tax-PI program prior to using the model to analyze possible impacts.
- **Beneficiary industries** discusses baseline aerospace manufacturing employment in the REMI model of the Washington economy, and identifies the other industry classifications of beneficiaries that have used the preferences.
- **Scenarios modeled** describes the scenarios used to estimate the range of potential employment effects of the aerospace tax preferences on statewide employment.

REMI Methodology

User inputs in REMI

REMI's Tax-PI model allows users to model policy changes and analyze the estimated impacts to the Washington economy, both in terms of economic activity and government finances (see Appendix C for an overview of the REMI model).

Prior to running modeling scenarios, users must make a series of choices about how to set up the modeling environment by building a state budget and calibrating the model accordingly. JLARC staff used the November 2018 revenue estimates produced by the Economic and Revenue Forecast Council (ERFC) and budgeted expenditures for fiscal years 2016 through 2018, as reported by the Legislative Evaluation and Accountability Program (LEAP) Committee. This data represents the budget and revenue data in the model and serves as the "jump off" point for Tax-PI's economic and fiscal estimates.

In addition to establishing a budget and inputting expected revenue values, users must specify whether government expenditures are determined by demand or by revenue.

- "By demand" imposes a level of government spending in future years that is necessary to maintain the same level of service as the final year in which budget data is entered.
- "By revenue" ties government expenditures to estimated changes in revenue collections.

JLARC staff ran the scenarios with expenditures set to be determined **by demand**. By setting expenditures to be determined by demand, users avoid making assumptions about how policymakers may alter spending priorities in the future. In addition, users essentially establish the current budget allocation as carry-forward levels for each expenditure category.

Users also may elect to impose a balanced budget restriction (also known as the balanced budget feedback loop) or leave the model unconstrained. The balanced budget restriction forces revenue and expenditures to be equivalent and thus may impose some limitations on economic activity. JLARC staff ran the reported scenarios with the **balanced budget restriction** turned on.

Because Tax-PI is a forecasting tool, JLARC staff was unable to model the economic impact of the tax preferences beginning in 2013. Rather, JLARC staff modeled the potential impacts if the preferences had not been extended beginning in 2017.

Data for the REMI model

The REMI model comes with historical economic and demographic data back to 2001. The data comes from federal government agencies such as the U.S. Census Bureau, U.S. Energy Information Administration, the Bureau of Labor Statistics, and the Bureau of Economic Analysis. As described above, current revenue and expenditure data for Washington comes from ERFC and LEAP, respectively. The data to build the modeling scenarios described in Tab 4 is from various sources.

- Equivalent changes in production cost and government spending for scenarios in this report are based on JLARC staff estimates of beneficiary savings, developed from Department of Revenue tax records.
- JLARC staff estimates of potential employment changes in response to the tax preferences are based on documentation from OFM and Community Attributes[14], media coverage of employment at Boeing's composite wing facility, and discussions with an advisory panel concerning potential impacts of the tax preferences. JLARC staff thanks the members of this panel for their participation: Timothy Bartik, W. E. Upjohn Institute for Employment Research; Kriss Sjoblom, Washington Research Council; Greg Weeks, independent consulting economist; Stan Sorsher, Society of Professional Engineering Employees in Aerospace; Toby Paterson, Office of Financial Management; Jeff Robinson, Employment Security Department; Anna Yamada, Department of Revenue; Jeff Mitchell, Senate Committee Services; and Tracey O'Brien, House of Representatives Office of Program Research.

[14] Community Attributes is a consulting firm commissioned in 2003 by the Washington Aerospace Partnership to examine the economic and fiscal impacts of the aerospace industry on Washington.

- Capital expenditure changes are based on media coverage of the cost to build the Boeing composite wing center and on public disclosure of tax savings associated with commercial airplane manufacturing facilities. They are entered into the model as an increase in nonresidential investment spending.

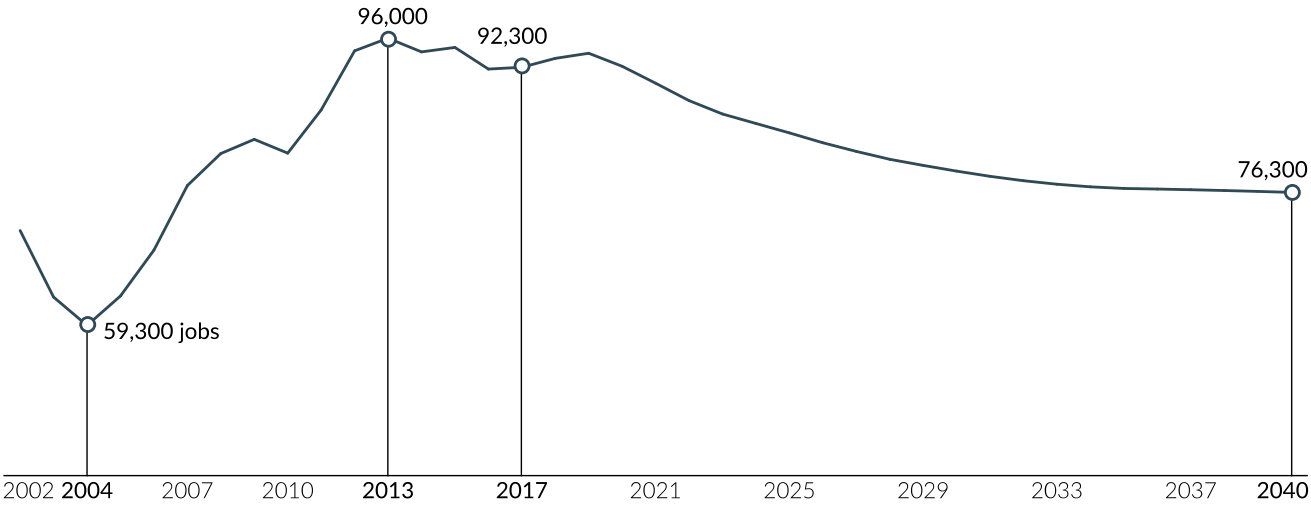
Aerospace tax preference beneficiary industries in REMI

The majority of tax savings attributable to the aerospace tax preferences are claimed by businesses in the aerospace product and part manufacturing industry that report under the North American Industry Classification System (NAICS) code 3364. However, businesses from many other industry classifications report claiming at least one of the aerospace tax preferences. JLARC staff entered production cost reductions into the model for the industries that report savings in the amount of tax savings they claimed. Because the public policy objectives of the tax preferences are directed toward the aerospace industry specifically, employment effects are reported at the NAICS 3364 level as well as at the other private industry and government levels.

Aerospace product and part manufacturing industry jobs fluctuated in Washington between 2001 and 2017

REMI's historical baseline and forecast employment data for the aerospace product and part manufacturing industry fluctuated from a low of 59,300 in 2004 to a high of 96,000 in 2013. Before simulating other policy changes, employment is projected to decline steadily from 92,300 in 2017 to 76,300 by 2040. Aerospace employment effects in the REMI model results are expressed as changes against this baseline.

Exhibit D1: REMI baseline and forecast data shows aerospace manufacturing jobs decline after 2013



Source: JLARC staff analysis of REMI baseline employment data for aerospace product and part manufacturing industry (NAICS code 3364).

Beneficiaries of the tax preferences report in 50 different industries included in REMI model

Data reported to the Department of Revenue shows the businesses that claimed the preferences between fiscal years 2015 and 2017 reported under 50 different industry classifications, listed below.

Exhibit D2: Aerospace tax preference beneficiary businesses report under many industry classifications

REMI NAICS	Industry Description
23	Construction
313, 314	Textile mills and textile product mills
3219	Other wood product manufacturing
3222	Converted paper product manufacturing
3252	Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing
3259	Other chemical product and preparation manufacturing
3261	Plastics product manufacturing
3311	Iron and steel mills and ferroalloy manufacturing
3312	Steel product manufacturing from purchased steel
3313	Alumina and aluminum production and processing
3314	Nonferrous metal (except aluminum) production and processing
3315	Foundries
3321	Forging and stamping
3322	Cutlery and handtool manufacturing
3323	Architectural and structural metals manufacturing
3325	Hardware manufacturing
3326	Spring and wire product manufacturing
3327	Machine shops; turned product; and screw, nut, and bolt manufacturing
3328	Coating, engraving, heat treating, and allied activities

REMI NAICS	Industry Description
3329	Other fabricated metal product manufacturing
3333	Commercial and service industry machinery manufacturing, including digital camera manufacturing
3335	Metalworking machinery manufacturing
3336	Engine, turbine, and power transmission equipment manufacturing
3339	Other general purpose machinery manufacturing
3341	Computer and peripheral equipment manufacturing, excluding digital camera manufacturing
3344	Semiconductor and other electronic component manufacturing
3345	Navigational, measuring, electromedical, and control instruments manufacturing
3353	Electrical equipment manufacturing
3359	Other electrical equipment and component manufacturing
3363	Motor vehicle parts manufacturing
3364	Aerospace product and parts manufacturing
3371	Household and institutional furniture and kitchen cabinet manufacturing
3399	Other miscellaneous manufacturing
42	Wholesale trade
44-45	Retail trade
481	Air transportation
487, 488	Scenic and sightseeing transportation and support activities for transportation
5413	Architectural, engineering, and related services
5414	Specialized design services
5415	Computer systems design and related services
5416	Management, scientific, and technical consulting services
5417	Scientific research and development services
5419	Other professional, scientific, and technical services
5611, 5612	Office administrative services; Facilities support services

REMI NAICS	Industry Description
5613	Employment services
5614, 5616, 5619	Business support services; Investigation and security services; Other support services
61	Educational services; private
8112	Electronic and precision equipment repair and maintenance
8113	Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance
8114	Personal and household goods repair and maintenance

Source: JLARC staff analysis of DOR tax return data, REMI industry detail.

Scenarios modeled to estimate the employment impact of the aerospace tax preferences

JLARC staff are unable to determine how Boeing would have responded if the tax preferences had not been extended in 2013. To illustrate the range of possible responses and their employment effects, JLARC staff modeled three scenarios:

- **Scenario 1**: Boeing locates 777X production out of state; Boeing employees currently working on the 777 line – estimated by Community Attributes at 12,100 employees – are phased out over a five year period as 777X production ramps up and the older model is discontinued. This scenario assumes that Boeing's decision to move the 777X out of state would have had no bearing on location decisions for future aircraft lines.
- **Scenario 2**: Boeing builds the 777X elsewhere as well as other new generations of airplanes, resulting in an 80% decrease in Boeing employment in Washington over a 15 year period. This scenario was considered by the Office of Financial Management (OFM) in its analysis for the 2003 aerospace tax preferences, and it was included in JLARC's 2014 report on the preferences.
- **Scenario 3**: Boeing locates 777X production in Washington despite the preferences not being expanded and extended. This scenario assumes that the preferences had no influence on Boeing's location decision. This scenario includes only the effects of the expiration of the preferences through a change in production costs and government spending.

For each scenario modeled, JLARC staff modeled a change in nominal state government spending in the amount of estimated beneficiary savings for FY 2025-2040. The amounts were also entered as production cost increases among beneficiary industry classifications, distributed in proportion to the savings claimed by businesses in each industry. These amounts are shown below. Importantly, these policy variables take effect in 2025, the year after the aerospace tax preferences were originally scheduled to expire. This supports the assumption that production cost and government spending would increase after this expiration. The beneficiary savings

estimates for Scenarios 1 and 2 in Exhibit D3 were reduced in proportion to the reduction in aerospace industry output caused by each respective scenario's employment reductions.

Exhibit D3: Estimated beneficiary savings entered into REMI model

Fiscal Year	Estimated Beneficiary Savings (millions of dollars)
2025	$312.9
2026	$322.8
2027	$333.9
2028	$345.5
2029	$357.2
2030	$369.4
2031	$382.2
2032	$396.0
2033	$410.7
2034	$426.4
2035	$443.3
2036	$461.5
2037	$480.4
2038	$500.0
2039	$520.4
2040	$541.5

Source: JLARC staff analysis of DOR tax return data.

In addition to the policy variables that estimate the opportunity cost of the use of beneficiary savings, the three scenarios included other policy variables to approximate potential responses to non-extension of the tax preferences.

Scenario 1: Boeing locates 777X production and the composite wing facility outside Washington. Boeing's decision to move the 777X out of state has no bearing on location decisions for future aircraft lines.

Assumption 1: JLARC staff assumed aerospace industry employment fell by 12,100 jobs over a 5-year period. In JLARC staff's analysis, this phase-out began in 2017. The employment changes

are applied at the industry (international exports) level. The values of this policy variable are shown below:

Exhibit D4: Scenario 1 employment changes entered into REMI model

Year	2017	2018	2019	2020	2021+
Employment Change - Aerospace (jobs)	-2,420	-4,840	-7,260	-9,680	-12,100

Source: JLARC staff analysis of Boeing, OFM data.

Assumption 2: The Washington economy loses the net effects of the construction of Boeing's $1 billion composite wing facility. This is entered into the model as a decrease in nonresidential investment spending and a decrease in aerospace employment. Modeling the loss of this investment, the scenario considers the effects of the following policy variables:

Exhibit D5: Scenario 1 capital spending changes entered into REMI model

Year	2017	2018	2019	2020	2021+
Investment Spending - Nonresidential ($ millions)	-$250	-$500	-$250		
Employment Change - Aerospace (jobs)			-250	-500	-500

Source: JLARC staff analysis of DOR tax return data, public information.

Scenario 2: Boeing locates 777X production and subsequent generations of airplanes outside Washington.

Assumption 1: JLARC staff assumed aerospace industry employment fell by 80% of Boeing's average 2016 employment (75,864 jobs) over a 15-year period. In JLARC staff's analysis, this phase-out began in 2017. The employment changes are applied at the industry (international exports) level. The values of this policy variable are shown below:

Exhibit D6: Scenario 2 employment changes entered into REMI model

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031+
Employment Change - Aerospace (thousands of jobs)	-4.0	-8.1	-12.1	-16.1	-20.2	-24.2	-28.3	-32.3	-36.3	-40.4	-44.4	-48.4	-52.5	-56.5	-60.5

Source: JLARC staff analysis of Boeing, OFM data.

Assumption 2: The Washington economy loses the net effects of the construction of Boeing's $1 billion composite wing facility. This is entered into the model as a decrease in nonresidential

investment spending and a decrease in aerospace employment. Modeling the loss of this investment, the scenario considers the effects of the following policy variables:

Exhibit D7: Scenario 2 capital spending changes entered into REMI model

Year	2017	2018	2019	2020	2021+
Investment Spending - Nonresidential ($ millions)	-$250	-$500	-$250		
Employment Change - Aerospace (jobs)			-250	-500	-500

Source: JLARC staff analysis of DOR tax return data, public information.

Scenario 3: Boeing sites 777X production in Washington despite the preferences not being expanded and extended.

The third scenario assumes the preferences had no influence on Boeing's location decision. There are no changes to aerospace employment or capital spending, as the non-extension of the tax preferences is not assumed to have had an effect on either Boeing's location decision, nor its decision to construct the composite wing facility. However, the scenario does assume the construction of the composite wing facility would have been subject to sales and use tax, increasing the aerospace production cost in the first three years of the simulation. The main effects on employment in this scenario result from the change in nominal state government spending and production cost in the amount of estimated beneficiary savings for FY 2025-2040.

Exhibit D8: Scenario 3 assumes sales and use tax paid on composite wing facility construction

Year	2017	2018	2019	2020	2021+
Production Cost - Aerospace Product and Part Manufacturing ($ millions)	$25	$50	$25		

Source: JLARC staff analysis of DOR tax return data, public information.

Two Employment Data Sources

Different approaches in reporting employment

The employment and wage numbers used in the main report are from administrative data collected and maintained by the Washington Employment Security Department (ESD) and reported to the U.S. Department of Labor's Bureau of Labor Statistics (BLS). This data captures workers covered by state unemployment insurance and federal workers covered by unemployment compensation for federal employees. It omits some workers in the labor market, including self-employed and sole proprietors.

The REMI model, on the other hand, uses employment data from the U.S. Department of Commerce's Bureau of Economic Analysis (BEA). BEA makes a number of adjustments to employment and wage data for occupations not covered by the BLS system (see BEA's Frequently Asked Questions for further details).

Understanding the distinction between BEA and BLS employment data is important for two reasons:

1. The BEA jobs numbers tend to be higher, as they capture a wider selection of employment, including sole proprietors. However, it may count a person holding multiple jobs as a number greater than one, whereas the BLS data counts a person one time regardless of the number of jobs performed.
2. While BEA provides a more comprehensive picture, it has an approximate two-year lag behind BLS data, which is regularly updated throughout the year and receives more attention in the press. According to REMI, BEA employment data operates as a unit of demand related to the tasks a worker performs within a job, rather than a job itself.

RECOMMENDATIONS & RESPONSES

Legislative Auditor Recommendation

The Legislative Auditor recommends clarifying legislative expectations for the level of aerospace industry employment

The Legislature should clarify its expectations for the level of aerospace industry employment. Providing additional detail in the tax preference performance statement such as a baseline level of employment would facilitate future reviews of these preferences.

There is evidence that the public policy objectives for these preferences are being achieved. However, JLARC staff cannot determine whether there is a causal relationship between the preferences and the continued presence of the aerospace industry or the quality of aerospace jobs.

Further, JLARC staff cannot determine whether the preferences meet the public policy objective to maintain and grow Washington's aerospace industry workforce. Washington aerospace employment is lower than it was in 2013, but higher than when the preferences were first enacted in 2003. The preferences may have prevented greater job losses if they caused a major Boeing location decision.

Consistent with the Legislative Auditor's recommendation in 2014, the Legislature could facilitate future reviews by providing additional detail within the tax preference performance statement for these preferences. This additional detail would be consistent with the Legislative Auditor's January 2014 guidance for drafting performance statements in tax preference legislation. This additional detail would include:

- Identification of the tax preference logic chain and a specific employment baseline or target level the Legislature wants JLARC staff to use in future evaluations, such as a specific industry job numbers or a percentage increase from a specific point in time.
- Direction to JLARC staff whether to evaluate the preferences' effectiveness ***based on achieving targets*** or ***determining causality***. It is much more likely that an evaluation will have a conclusive answer to whether a target was achieved than an answer to whether there was a causal relationship between a tax preference and a target.

Legislation Required: Yes

Fiscal Impact: Depends on legislative action.

Letter from Commission Chair

Available October 2019.

Commissioners' Recommendation

Available October 2019.

Agency Response

If applicable, available December 2019.

MORE ABOUT THIS REVIEW
Study questions

WASHINGTON JLARC **Proposed Study Questions: Aerospace Tax Preferences**

State of Washington Joint Legislative Audit and Review Committee • September 2018

Legislature requires JLARC study of the aerospace tax preferences

The 2006 Legislature directed the staff of the Joint Legislative Audit and Review Committee (JLARC) to conduct performance audits of tax preferences. These preferences are included in the 10-year review schedule set by the Citizen Commission for Performance Measurement of Tax Preferences.

In 2013, the Legislature extended nine related tax preferences that benefit the aerospace industry. At the same time, it required JLARC to review these preferences by December 1, 2019, and every five years thereafter. The review will assess employment changes in Washington's aerospace industry compared to other states and internationally.

Study will include nine preferences that benefit companies that manufacture, develop, and repair aerospace products

The review includes three preferential business and occupation (B&O) tax rates, two B&O tax credits, two sales and use tax exemptions, a property tax exemption, and a leasehold excise tax exemption.

The preferences are directed to businesses that perform any of these three activities:

- Manufacturing commercial airplanes, including superefficient airplanes.
- Developing aerospace products, including airplanes and their components, airplane repair equipment, and tooling used in manufacturing commercial airplanes.
- Repairing aircraft.

The Department of Revenue estimates that the combined biennial savings for beneficiaries of these preferences was $531 million in 2015-17.

Study will answer questions based on the Legislature's objectives

Legislature's objectives	JLARC's study questions
Encourage the continued presence of the aerospace industry in Washington.	1. Has Washington retained the presence of the aerospace industry?
Reduce the cost of doing business in Washington for the aerospace industry compared to other states.	2. How have the preferences affected the cost of business for Washington's aerospace industry compared with other states?
Maintain and grow Washington's aerospace industry workforce.	3. How has aerospace industry employment changed since the 2013 extension of tax preferences? 4. How much of the estimated employment change is attributed to the tax preferences, and how much may be related to other factors? 5. How do changes in Washington employment compare to changes in other locations?
Provide jobs with good wages and benefits.	6. What wages and benefits do the beneficiaries of the preference provide their employees?

Joint Legislative Audit & Review Committee, 106 11th Ave SW, Olympia, WA 98501
(360) 786-5171 • (360)786-5180 (fax) • JLARC@leg.wa.gov • www.jlarc.leg.wa.gov
Keenan Konopaski, Washington State Legislative Auditor

Proposed Study Questions: Aerospace Tax Preferences

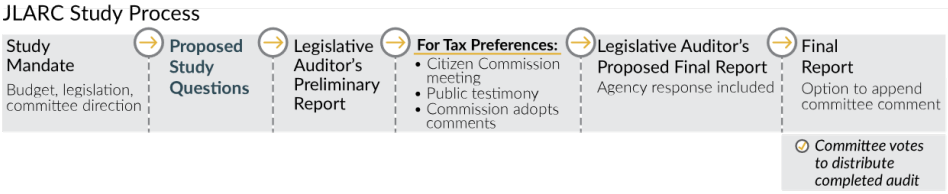
Study timeframe

Preliminary Report: July 2019 Proposed Final Report: December 2019

Study team

Team Lead:	Pete van Moorsel	360.786.5185	pete.vanmoorsel@leg.wa.gov
Research Analyst:	Zack Freeman	360.786.5179	zack.freeman@leg.wa.gov
Project Coordinator:	Eric Thomas	360.786.5182	eric.thomas@leg.wa.gov

JLARC Study Process



Washington Joint Legislative Audit and Review Committee

106 11th Avenue SW, Suite 2500
PO Box 40910
Olympia, WA 98504-0910

Phone: 360-786-5171
Fax: 360-786-5180
Email: JLARC@leg.wa.gov