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December 2, 2013

TO: Hunter Goodman, Secretary
Washington State Senate

Barbara Baker, Chief Clerk
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FROM: Carol K. Nelson, Director
Department of Revenue

SUBJECT: HIGH TECHNOLOGY STUDY 2013

This report is submitted to the Legislature pursuant to RCW 82.63.020(3). It contains the results of an evaluation of the two tax incentives for high technology firms - a business and occupation (B&O) tax credit for expenditures on research and development and a sales tax deferral for research and development facilities and equipment. The B&O tax credit is codified as RCW 82.04.4452 and the sales tax deferral/exemption appears in RCW 82.63. These programs were adopted in 1994, became effective on January 1, 1995, and are scheduled to expire on January 1, 2015.

Over 2,400 taxpayers have participated in the high tech programs since they became effective in 1995. Of the approximately 600 taxpayers that benefit from these programs each year, 95 percent of those take the high tech B&O tax credit. Taxpayers utilizing the high tech B&O tax credit have saved $434.2 million. From 1995 through 2012, 383 taxpayers have invested approximately $8.2 billion in facilities, machinery and equipment which qualify for the high tech deferral. State and local sales and use taxes deferred for these projects are estimated to be $692.9 million.

From 2006 through 2012, participants in the high tech programs have had an average annual growth in employment of 2.9 percent. In 2012, 86 percent of the new employees hired were Washington residents. In 2012, high tech participants also moved significantly more employees into Washington than out for the first time in 4 years.

This report was prepared by our Research and Fiscal Analysis Division under the direction of Kathy Oline, Assistant Director. The report can be found on our website at Statistics & Reports. If you have any questions about this report, please contact Kathy at (360) 534-1534 or email KathyO@dor.wa.gov.

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High Tech Study

Analysis of High Technology Programs

Washington State Department of Revenue

December 2013

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Chapter One – Executive Summary

The Department of Revenue (Department) has prepared this report pursuant to RCW 82.63.020(3) requiring the Department to study and report to the Legislature by December 1, 2013 the effect of Tax Deferrals for High Technology Businesses (referred to as the "high tech deferral program") on:

- Job creation,
- Jobs created for Washington residents,
- Company growth,
- The introduction of new products,
- The diversification of the state's economy,
- Growth in research and development (R&D) investment, and
- The movement of taxpayers or the consolidation of taxpayers into the state.

Previous reports in 1997, 2000, 2003, and 2009 also required a study of the business and occupation (B&O) tax credit for R&D spending (referred to as the "high tech credit program"). After discussion with stakeholders, this report also includes a study of the high tech credit program.

These incentive programs became effective January 1, 1995 and are presently scheduled to expire on January 1, 2015. A business must conduct R&D in one of five industries to qualify for the high tech incentives. Participants in the incentive programs are involved in at least one of the five industries, but may be involved in multiple industries. The five industries are:

- Advanced computing,
- Advanced materials,
- Biotechnology,
- Electronic device technology, and
- Environmental technology.

Program Utilization

As of 2012, taxpayers have invested approximately $8.2 billion in facilities, machinery and equipment which qualify for the high tech deferral. Additionally, $434.2 million has been taken by taxpayers utilizing the high tech business and occupation tax credit. Over 2,400 taxpayers have participated in these programs.

The Great Recession (December 2007 through June 2009) impacted both of these programs. For the high tech deferral, the estimated deferred or exempted state and local taxes fell from an all time high in 2008 of $115.1 million to a low of $22.6 million in 2010. Just as dramatically, estimated project costs dropped from $1,284 million in 2008 to $262 million in 2010.

For the high tech credit the number of taxpayers utilizing the credit dropped from 558 in 2007 to 524 in 2008, but the amount of credit taken rose – from $19.6 million in 2007 to $22.9 million in 2008.

The majority of taxpayers using the credit or deferral do so in the first year they are in business (46.4 percent). An additional 18.2 percent use the credit in the second or third year their business is open. When you compare the survival rate of high tech participants to all high tech taxpayers, participants have a survival rate of 53 percent as compared to all high tech taxpayers with a survival rate of 39 percent.

Job Creation

This report compares job creation between:

- U.S. high tech industries,
- Washington high tech incentive participants, and
- Washington high tech taxpayers that do not use the high tech incentives.

The results are mixed before, during and after the Great Recession.

Percent Job Growth

Year	U.S. High Tech	Washington Participants	Washington Non-Participants
2006	2.8	3.9	6.3
2007	6.5	4.0	4.8
2008	2.0	3.9	3.5
2009	(2.7)	(0.6)	2.7
2010	0.1	5.1	1.4
2011	2.6	3.2	5.4
2012	2.2	4.0	1.6

Based on the high tech participant annual surveys there has been a movement from use of full-time employees to part-time and temporary employees, which has also happened in other sectors of the economy. In 2004, 83 percent of high tech incentive participant employees were full-time. This decreased to 74 percent by 2012. New employees are mostly research or administrative positions. In 2005, 60 percent of new employees were in research positions, but this dropped to a low in 2011 of 34 percent and was up slightly in 2012 to 37 percent. As new employees in research positions have declined, new employees in administrative positions have increased from 38 percent in 2005 to 51 percent in 2012. At the same time, the percentage of employees who are Washington residents at the time of hiring rose to an all-time high in 2012 of 86 percent.

Company Growth

Overall, company growth has been declining. Participants on average have experienced a decline in B&O taxable income since the Great Recession. In 2008 participants total taxable

income was $10.5 billion or $20.2 million per taxpayer. By 2012, this had dropped to $7.6 billion or $12.2 million per taxpayer.

New Items, On-going Projects, and R&D Investment

	2007	2012
New Items	13,366	15,880
On-going projects	6,566	10,765
R&D Investment	$6.7 billion	$8.7 billion

While B&O taxable income has not been growing, the number of new items, the number of on-going projects, and the amount of R&D investment has increased. The table to the left shows both pre-Great Recession (2007) and post-Great Recession (2012) totals. All of these amounts decreased during the Great Recession.

New Products

The industries with the highest percentages of new items and ongoing projects are advanced computing and biotechnology. Advanced computing introduced 64 percent of the new items while biotechnology accounted for 38 percent of the on-going projects.

Diversification

In order to study the diversification of the state's economy the Department reviewed patent data from the U.S. Patent and Trademark Office from 1990 through 2012. Washington had patents granted in 17 new patent classifications between 1995 and 2012. Washington also expanded the number of patents per million people from 229 in 1995 to 868 in 2012 and the percentage of high tech patents grew from 32 percent in 1995 to 66 percent in 2012. These facts appear to support a diversification of Washington's economy during the time these incentives have been in place.

Movement of Taxpayers into Washington

The Great Recession also affected the movement of activities into Washington by high tech incentive participants. In 2008, 51 participants reported moving activities into Washington. This fell to 12 in 2009 and has only increased to 15 in 2012. However, in 2012 the net movement of employees increased for the first time since 2008 by a net of over 400 employees moving into Washington.

Hypothetical Taxpayers

Finally, as part of this report the Department compared hypothetical taxpayers from 9 states to determine which high tech incentive programs offer the greatest tax relief. The 9 selected states are:

- California
- Illinois
- Massachusetts
- New York
- North Carolina
- Oregon
- Pennsylvania
- Texas
- Washington

Hypothetical taxpayers included:

- A small aircraft and parts manufacturer,
- A manufacturer of instruments for navigation, measuring and related uses,
- A semiconductor or other electrical component manufacturer,
- A biotechnology/pharmaceutical integrated manufacturer and wholesaler, and
- A small software originator.

Tax savings from programs similar to Washington's high tech credit ranks Washington 3rd or better compared to the other selected states. Washington ranks 1st for the instruments and equipment taxpayer when compared to the other selected states.

Tax savings from programs similar to Washington's high tech deferral ranks Washington 1st or 2nd when compared to the other selected states. Washington outranks all the selected states when looking at the savings as a percent of total tax burden.

Chapter Two – Program Overview

Overview

In 1993, the Department of Revenue was asked to study high technology incentives, determine which technologies have the greatest potential for improving high wage research and development (R&D) jobs, and make recommendations for targeted tax incentives with the goal of increasing the number of these types of jobs. The findings were published in the "Incentives for High Technology" report issued on January 10, 1994.

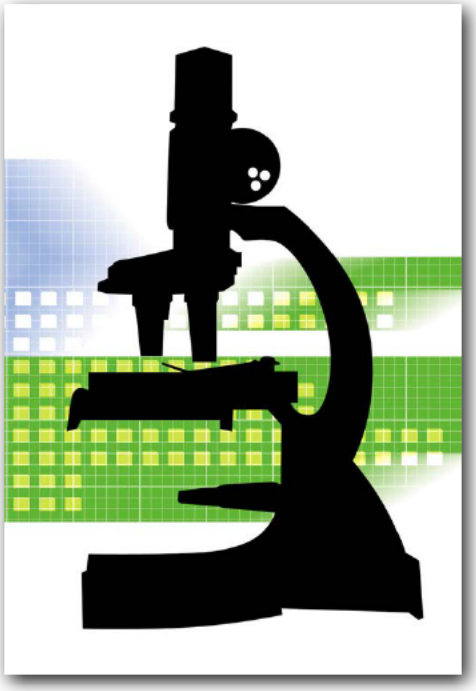
In 1994, the Legislature created the sales and use tax deferral/exemption and business and occupation (B&O) tax credit programs for R&D covered by this report. This two-part program established tax incentives for five technologies based on a list of national critical technologies and recommendations from Washington industries. It was intended to encourage the development of high technology industries in the State of Washington. The incentives became effective January 1, 1995, and are scheduled to expire on January 1, 2015.

Qualified Research and Development

Eligible taxpayers must engage in research and development in one of five specified "high tech" industries:

Industry	Description
Advanced computing:	The design and development of computing hardware and software, including innovations covering the full spectrum of computer equipment, ranging from hand-held calculators to super computers.
Advanced materials:	Development of materials with engineered properties created through specialized processing and synthesis technology, including ceramics, high value-added metals, electronic materials, composites, polymers, and biomaterials.
Biotechnology:	The application of technologies such as recombinant DNA techniques, biochemistry, molecular and cellular biology, genetics, cell fusion, and new bioprocesses involving the use of living organisms.
Electronic device technology:	Technologies involving microelectronics, semiconductors, electronic instrumentation, optical devices, data and digital communications, and imaging devices.
Environmental technology:	Assessment and prevention of threats to human health or the environment, environmental cleanup, and the development of alternative energy sources.

Research and Development Defined



Research and development (R&D) means activities performed to discover technological information, and technical and nonroutine activities concerned with translating technological information into new or improved products, processes, techniques, formulas, inventions, or software. It includes exploration of a new use for an existing drug, device, or biological product if the new use requires separate licensing by the Federal Drug Administration.

R&D does not include adaptation or duplication of existing products which are not substantially improved, studies or surveys undertaken for market research or testing purposes, or quality control.

Sales Tax Deferral

A deferral of state and local retail sales and use tax is available for: (1) the construction of qualified R&D facilities and pilot scale manufacturing plants, and (2) the purchase of related machinery and equipment. Eligible taxpayers do not need to repay the deferred sales tax if they maintain program requirements.

Taxpayers have invested approximately $8.2 billion in facilities and machinery and equipment that qualify for the deferral.

An application must be filed with the Department prior to construction or purchase of eligible equipment. A deferral certificate is issued by the Department for approved applications. Leased facilities qualify for the tax deferral/exemption if the benefit is passed on to the lessee by the lessor. For existing structures, the investment must increase floor space or production capacity of the plant. A participating taxpayer must file annual surveys and remain in operation for its intended purpose for at least eight years to avoid repayment of the deferred tax after the Department audits and certifies the project as "operationally complete."

Since 1995, almost 400 taxpayers have received a sales tax deferral. An estimated $510.2 million in state retail sales tax has been deferred or forgiven. The local sales tax impact is approximately $182.7 million.

Use of the Deferral Program

Table 2.1 shows the use of the high technology sales tax deferral/exemption program since enactment. Estimated project costs includes actual project costs for all audited projects, and estimated project costs from the application for projects that are not yet complete or have not been audited.

Table 2.1
Use of High Tech Sales and Use Tax Deferral

(Approved R&D Project by Date of Application)

Year	Number of Applications	Estimated Project Costs	Estimated State and Local Sales Tax Deferred or Exempted
1995	41	268,713,485	21,428,563
1996	32	323,877,817	27,443,798
1997	39	210,132,499	17,995,264
1998	40	420,482,331	13,906,636
1999	52	264,456,349	22,650,780
2000	63	609,846,395	53,988,964
2001	59	297,271,433	23,385,122
2002	45	153,261,155	13,659,680
2003	36	117,030,657	8,092,905
2004	38	227,405,111	19,527,425
2005	43	208,512,242	19,374,185
2006	56	1,050,493,619	77,605,573
2007	59	1,155,019,414	102,586,897
2008	51	1,283,272,606	115,090,405
2009	48	274,561,647	25,627,081
2010	38	262,588,090	22,596,546
2011	54	659,159,690	62,704,159
2012	62	454,302,710	45,228,136
Totals	856	$8,240,387,250	$692,892,120

For more information on the amount of deferred sales and use taxes that have been audited at the time of this publication, please see table 3.9.

B&O Tax Credit

High technology taxpayers may claim a Business & Occupation (B&O) tax credit of up to $2 million annually for qualified R&D activities performed in Washington. The program has changed several times since its inception in 1995. Currently the credit is equal to 1.5 percent of the eligible R&D expenditures in excess of 0.92 percent of the taxpayer's taxable income. Participating taxpayers must file an annual survey or lose the credit for the year.

Expenditures eligible for the B&O credit include operating expenses, wages and benefits, compensation of proprietors and partners, consumable supplies, computer expenses, and payments to public educational or research institutions. In addition, 80 percent of any cost of contracted research is available for the credit; the credit may be assigned to the contracting taxpayer. The cost of capital and overhead expenses are not eligible for the credit.

During the past eighteen years, over 2,250 taxpayers have used the B&O tax credit. The amount of B&O tax credit taken by the participating taxpayers has amounted to $434.2 million.

Use of the Credit Program

Table 2.2 shows the use of the high technology B&O tax credit program since enactment.

Table 2.2
Use of the B&O Tax Credit for High Tech Taxpayers

Year Credit Taken	Number of Taxpayers Taking a Credit	Amount of Credit Taken
1995	426	18,538,814
1996	500	24,270,643
1997	568	29,480,860
1998	624	29,651,077
1999	630	26,968,006
2000	638	29,211,593
2001	600	27,512,859
2002	637	25,734,570
2003	643	31,234,137
2004	603	21,966,165
2005	612	16,832,182
2006	563	17,251,432
2007	558	19,661,695
2008	524	22,899,784
2009	532	24,645,220
2010	569	22,890,282
2011	594	23,211,387
2012	594	22,235,779
Total		$434,196,485

Annual Survey

Since 2005, participants have been required to file a survey annually with the Department. Aggregate data provided by participants are reported to the Legislature annually in a publication entitled, "Descriptive Statistics for Tax Incentive Programs."

History

Following is an outline of the major statutory changes to the high tech tax incentive programs.

2009 "Multiple qualified buildings" are eligible for the deferral. More than one structure may be leased to the same taxpayer if: (1) the buildings are located within a five-mile radius, and (2) construction of all structures is initiated within a five-year period.

2005 Calculation of the B&O tax credit revised. Taxpayers allowed to calculate their credit based on the higher of (1) their average tax rate or, (2) a fixed percentage through 2009. In 2010, the credit became a fixed 1.5 percent.

2004 B&O tax credit and sales tax deferral extended to January 1, 2015. Calculation of the B&O tax credit revised. State universities added to sales tax deferral program. Participants in each program are required to file an annual survey.

1997 Calculation of the B&O tax credit revised. The amount of credit allowed reduced to 1.5 percent (0.484 percent for nonprofits).

1995 Deferred sales tax becomes exempt if program requirements maintained for seven years following the year the project certified as complete.

1994 Legislation passed to create the high technology B&O tax credit and sales tax deferral programs, effective January 1, 1995. Programs scheduled to expire in 2004.

Chapter Three – Program Participation

Overview

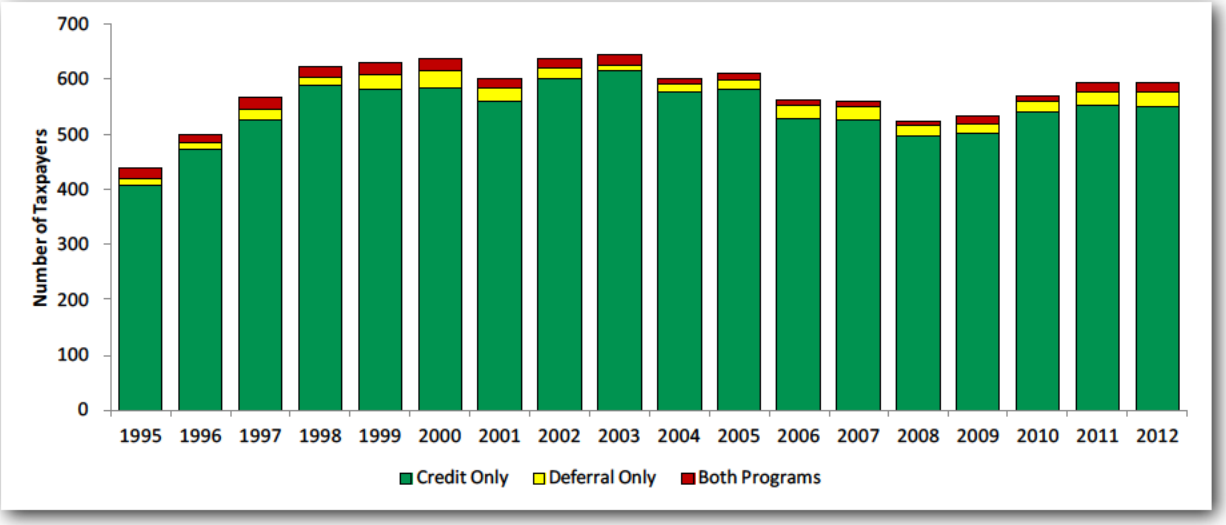
Over 2,400 taxpayers have used either one or both of the high tech incentive programs since they became effective in 1995.

Table 3.1
Taxpayers Using High Tech Incentive Programs
1995 through 2012

Program	Taxpayers
Credit Only	2,047
Deferral Only	171
Both Programs	212
Total	2,430

About 600 taxpayers per year benefit from one or both of the high tech incentive programs. Over 95 percent of the taxpayers take the high tech credit, and it is not uncommon for a taxpayer to take the credit every year. The chart below shows the number of taxpayers that benefit from the high tech incentive programs each year.

Chart 3.1
Number of Taxpayers by Program



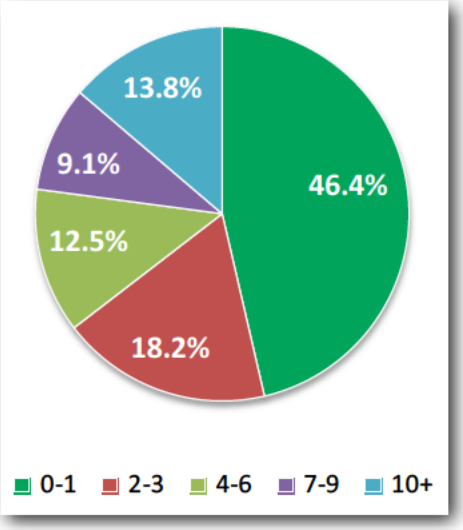
The age and survival rate information provided on the following pages does not include any adjustment for accounts acquired by another firm or having ownership changes that would require them to close one account and open a new account with the Department of Revenue (Department). Data required to make such an adjustment was not available.

Age of Taxpayer

While the high tech incentives benefit both startup and existing taxpayers, almost half of all taxpayers that take the credit or deferral for the first time have been in business for a year or less.

The chart to the right shows how long a taxpayer has been in operation when they first use the credit or deferral program.

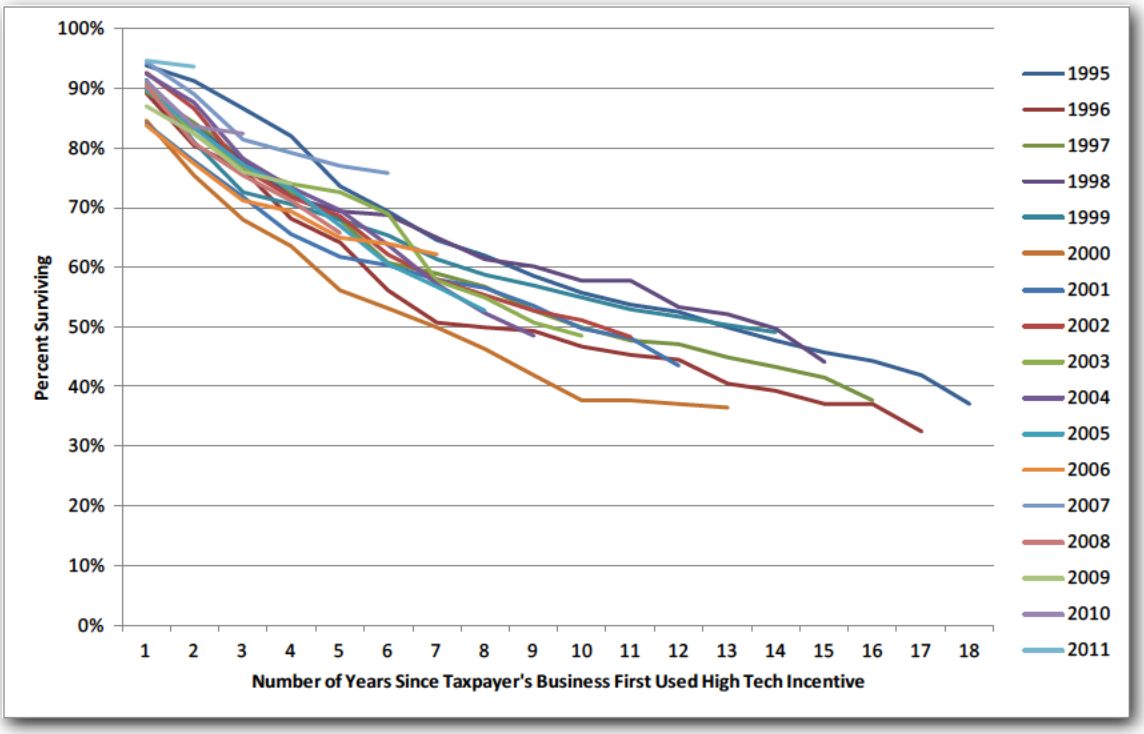
Chart 3.2
Number of Years in Operation when Taxpayer First Uses the Credit or Deferral Programs
(1995-2012)



Survival Rates of Taxpayers

Slightly over half of the taxpayers who have taken a high tech incentive from 1995 through 2012 are still open. Chart 3.3 shows taxpayers who have taken an incentive, regardless of when their business first opened.

Chart 3.3
Survival Rates of Participants – Measured From First Use of High Tech Incentive



Note: Detail for charts 3.3 through 3.5 can be found in Appendix A.

Survival rates of high tech participants compared to all high tech taxpayers:

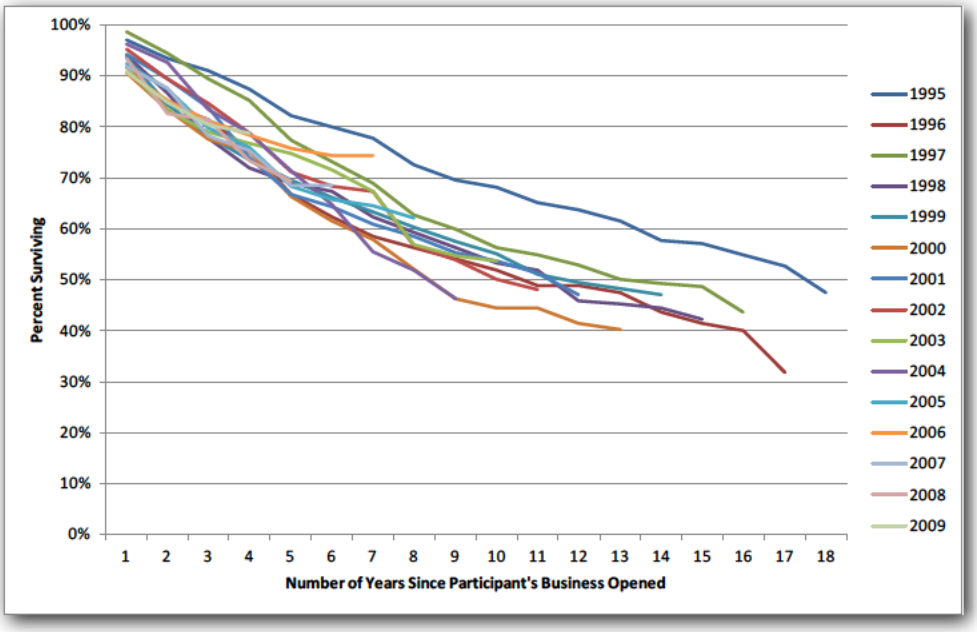
In order to compare the survival rates of taxpayers that participate in the high tech incentive programs to all taxpayers in the identified high tech industries, taxpayer open and closed dates need to be used rather than when the participant first uses the incentive.

High tech participants:

Nearly 53 percent of the taxpayers participating in the high tech incentive programs still have active Department accounts. Over 40 percent of the taxpayers remain open up to 18 years later. The only exception is in 1996, where 32 percent of the taxpayers continue to exist. Chart 3.4 shows the survival rates of participants.

Chart 3.4

Survival Rates of Participants – Measured From Year Business Opened

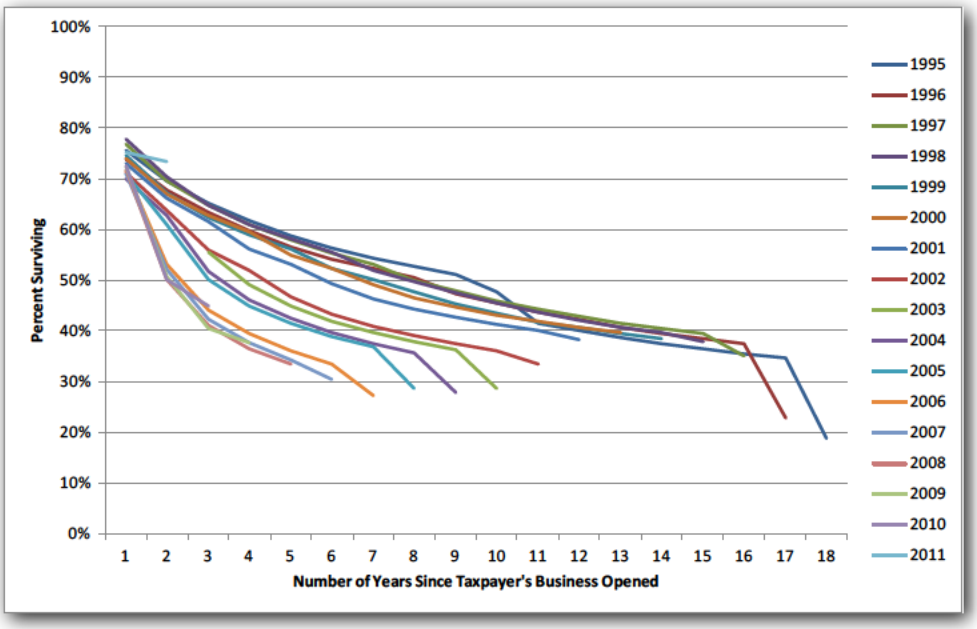


All high tech taxpayers:

All taxpayers in the identified high tech industries have not fared as well. Less than 39 percent of the taxpayers remain open through 2012, and over 20 percent of the taxpayers closed within the first year they were in business. Chart 3.5 shows the survival rates of participants.

Chart 3.5

Survival Rates of High Tech Taxpayers – Measured From Year Business Opened



SALES TAX DEFERRAL/EXEMPTION

High Tech Deferral Participation

The Department received over 1,100 applications for high tech deferral projects from 1995 through 2012. One project may have multiple applicants; project counts exclude the lessor when a lessee also applies for the deferral. The chart below shows the number of projects along with the actual number of applications received.

Table 3.2
Status of R&D Sales and Use Tax Deferral Applications
1995 through 2012

Application Status	Applications	Projects
Approved	879	856
Cancelled	61	61
Withdrawn	95	95
Denied	117	117
Pending	2	2
Total	**1,154**	**1,131**

Approved Projects

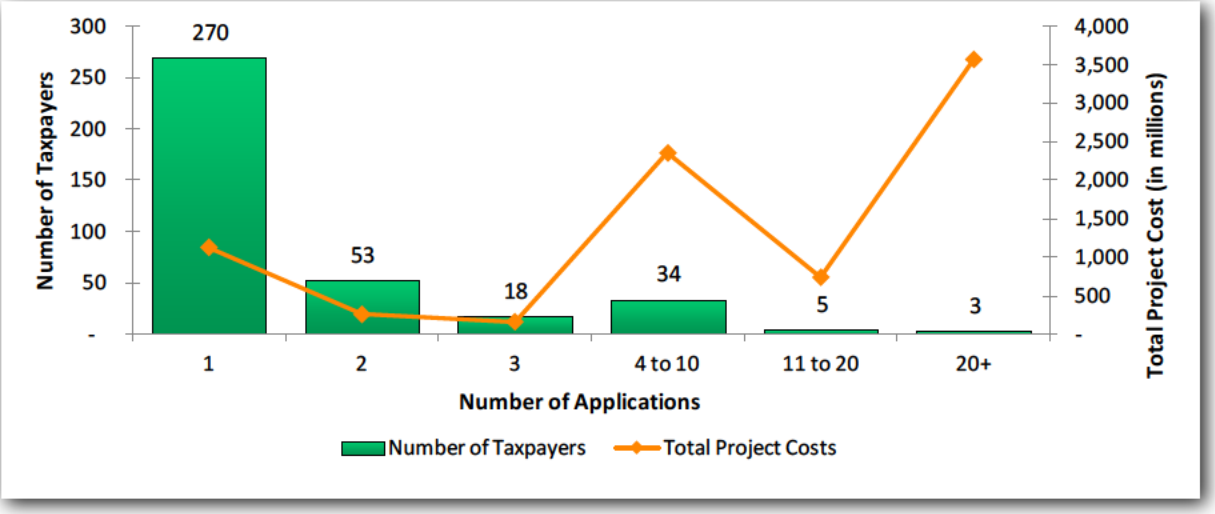
The Department approved applications for 856 high tech sales and use tax deferral projects between 1995 and 2012. Project costs for these applications total $8.2 billion to date. State and local sales and use taxes deferred for these projects are estimated to be $692.9 million.

Sales and Use Tax Deferral by Taxpayer

The 879 approved high tech sales and use tax deferral applications are distributed among 383 taxpayers. While over 70 percent of the taxpayers have only one approved project, many other taxpayers have several projects in the program.

The 270 taxpayers with only one approved project account for $1.1 billion or 13.7 percent of the total approved project costs. At the other end of the spectrum, there are three taxpayers with more than 20 approved projects. The three taxpayers account for 43.4 percent, or $3.6 billion, of the total approved project costs.

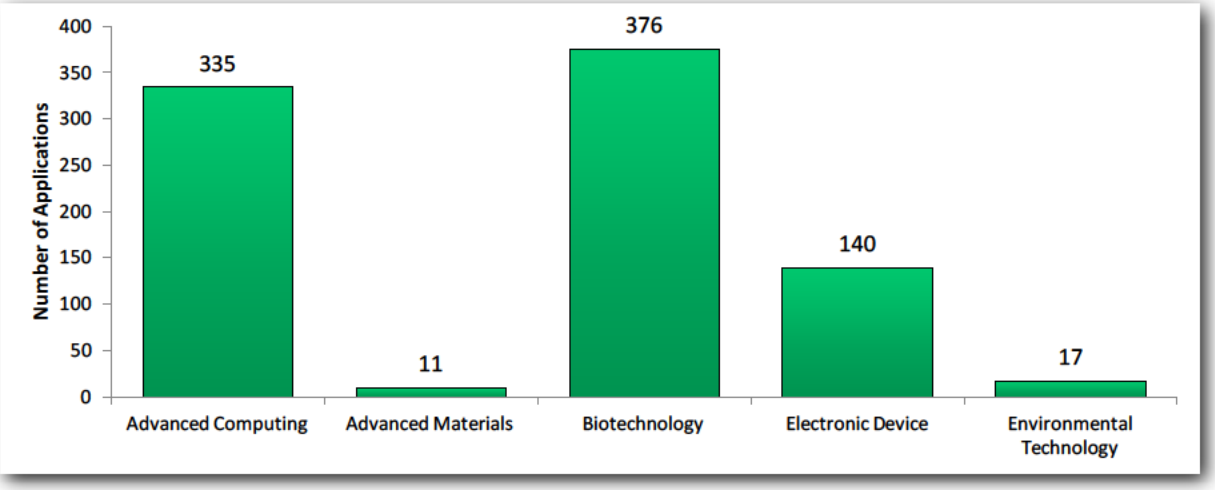
Chart 3.6
Approved Applications per Taxpayer



Sales and Use Tax Deferral by Qualifying Industry

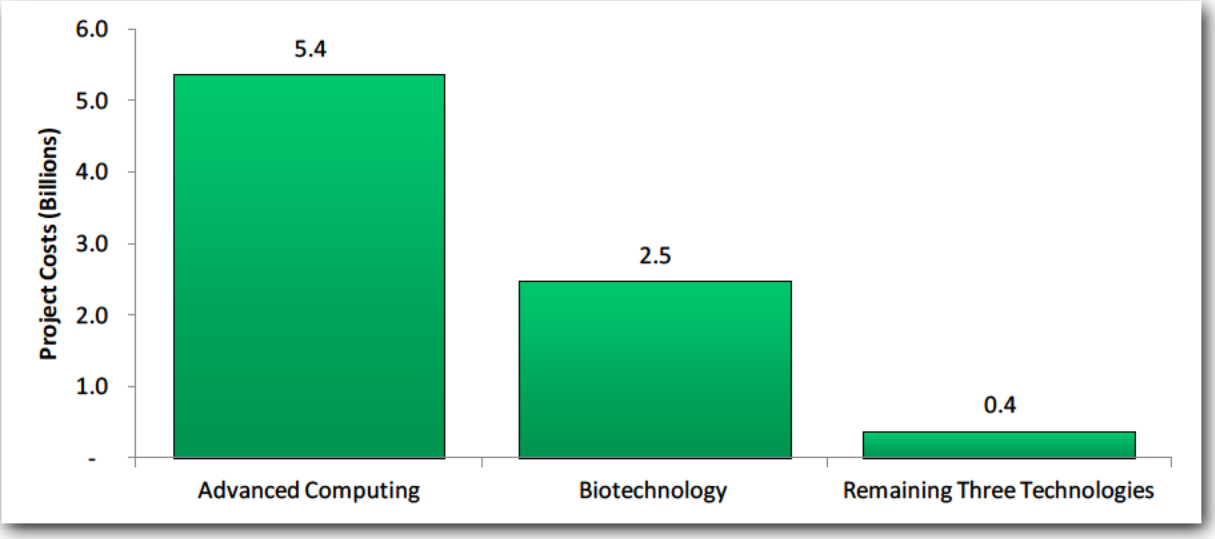
Most of the high tech deferral applications are for projects in the biotechnology (43 percent) and advanced computing (38 percent) technologies. Electronic device taxpayers are responsible for 16 percent of the deferral projects. The other two areas covered by the program, environmental technology and advanced materials are represented by only a few projects.

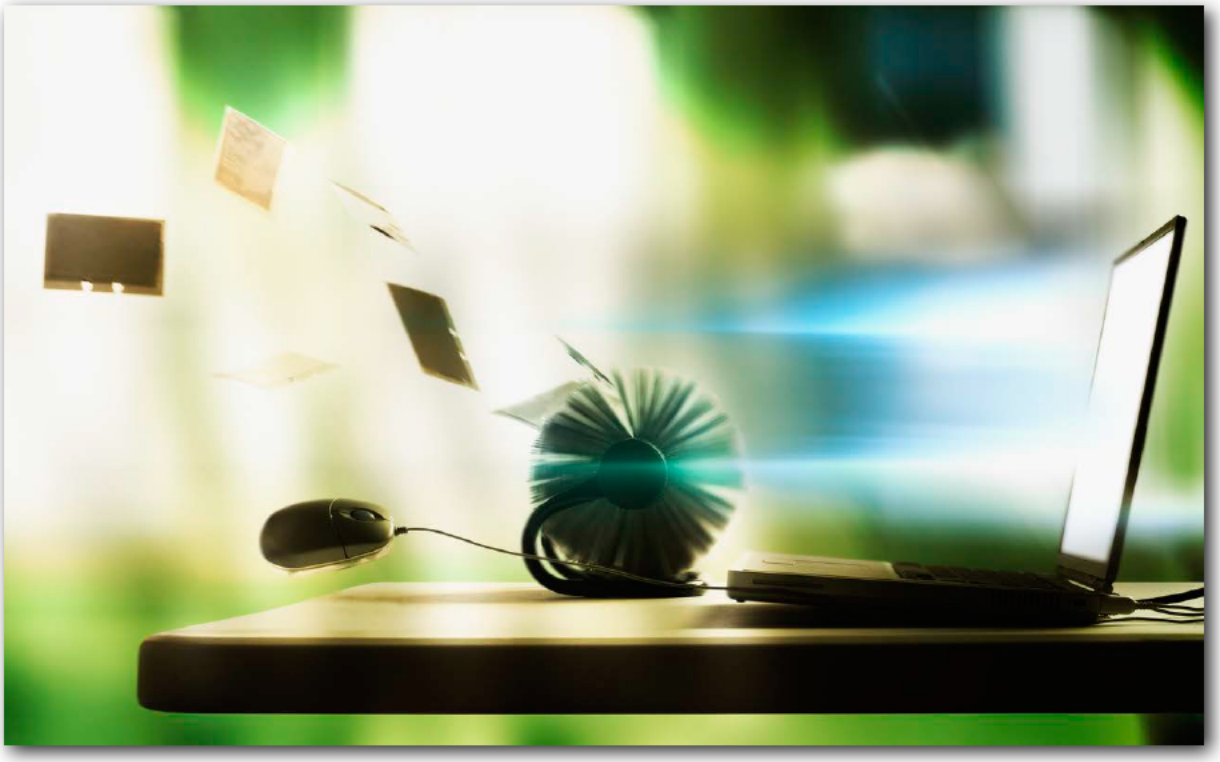
Chart 3.7
Approved R&D Projects by Qualifying Industry



While biotechnology has the largest number of approved applications, the largest project costs are found in the advanced computing technology. Advanced computing accounts for $5.4 billion of the estimated project costs (65 percent), while biotechnology has estimated project costs of $2.5 billion (30 percent). Electronic device, advanced materials, and environmental technology make up the remaining 5 percent of the estimated project costs.

Chart 3.8
Project Costs for Approved R&D Projects





The following tables show a breakdown of the project count and estimated project costs by industry and year.

Table 3.3
Approved R&D Project by Date of Application
Count of Projects (Excluding Certain Lessors)

Year	Advanced Computing	Advanced Materials	Biotechnology	Electronic Device	Environmental Technology	Total
1995	21	1	12	5	2	41
1996	9	0	12	11	0	32
1997	22	0	13	2	2	39
1998	19	0	15	6	0	40
1999	24	0	22	6	0	52
2000	33	0	18	11	1	63
2001	17	0	30	10	2	59
2002	9	0	32	3	1	45
2003	5	1	24	6	0	36
2004	7	0	19	11	1	38
2005	13	0	22	8	0	43
2006	20	3	21	10	2	56
2007	23	0	23	12	1	59
2008	24	0	21	5	1	51
2009	12	4	18	13	1	48
2010	16	0	17	4	1	38
2011	20	1	27	5	1	54
2012	27	1	26	7	1	62
Total	321	11	372	135	17	856

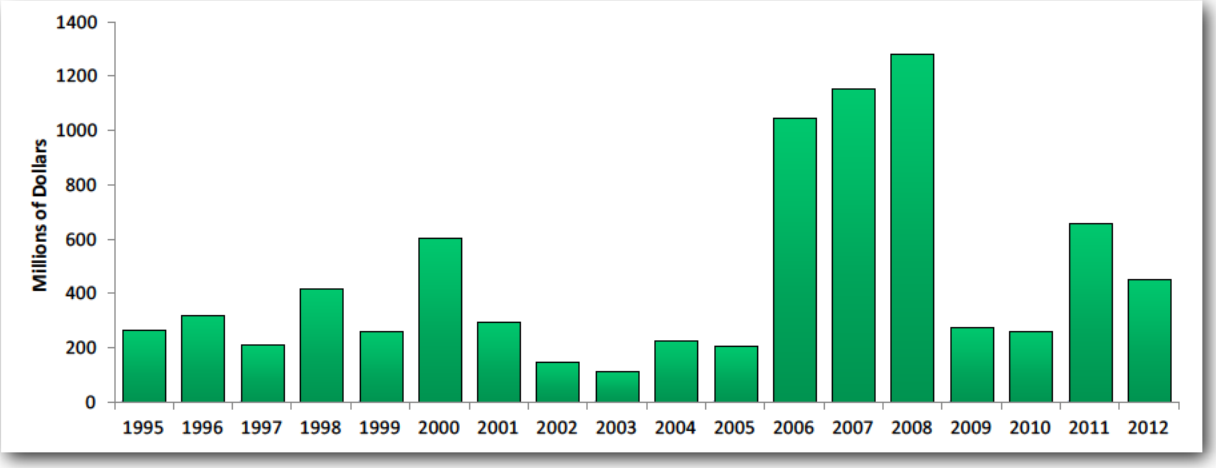
Note: 2001 to 2003 saw the collapse of the Dot Com bubble. The number of applications in the advanced computing technology substantially dropped during that period, and again during the Great Recession.

Table 3.4
Estimated Project Costs

Year	Advanced Computing	Advanced Materials	Biotechnology	Electronic Device	Environmental Technology	Total
1995	208,519,501	3,663,024	36,156,014	20,167,532	207,414	268,713,485
1996	162,565,742	0	144,281,493	17,030,582	0	323,877,817
1997	156,396,701	0	48,292,686	5,279,447	163,665	210,132,499
1998	384,346,215	0	23,860,648	12,275,468	0	420,482,331
1999	117,491,629	0	138,556,081	8,408,639	0	264,456,349
2000	215,899,721	0	366,508,175	27,433,911	4,588	609,846,395
2001	207,869,461	0	83,790,174	5,611,798	0	297,271,433
2002	16,222,984	0	132,667,557	4,243,533	127,081	153,261,155
2003	1,162,763	146,040	114,490,888	1,230,966	0	117,030,657
2004	60,853,901	0	137,068,267	27,785,384	1,697,559	227,405,111
2005	162,763,993	0	41,060,197	4,688,052	0	208,512,242
2006	846,057,594	5,617,387	184,338,698	14,415,347	64,593	1,050,493,619
2007	1,025,359,683	0	124,883,488	4,522,892	253,351	1,155,019,414
2008	1,175,813,151	0	99,765,720	7,475,646	218,089	1,283,272,606
2009	33,086,176	62,341,099	86,830,314	91,691,778	612,280	274,561,647
2010	62,533,445	0	172,695,776	26,344,989	1,013,880	262,588,090
2011	178,110,610	280,097	461,547,085	16,600,406	2,621,492	659,159,690
2012	360,296,295	2,450,000	86,127,766	4,063,649	1,365,000	454,302,710
Total	5,375,349,565	74,497,647	2,482,921,027	299,270,019	8,348,992	8,240,387,250

Chart 3.9 shows how volatile total project costs are from year to year, particularly in 2006 through 2008, when advanced computing projects caused a large spike.

Chart 3.9
Estimated Total Project Costs Per Year



The next three tables show (1) total sales tax deferred, (2) state sales tax deferred, and (3) local sales tax deferred as a result of the high tech deferral program by year and industry.

Table 3.5
Estimated State and Local Sales Tax Deferred or Exempted

Year	Advanced Computing	Advanced Materials	Biotechnology	Electronic Device	Environmental Technology	Total
1995	16,920,773	148,874	2,800,276	1,541,632	17,008	21,428,563
1996	13,743,696	0	12,275,824	1,424,278	0	27,443,798
1997	13,468,164	0	4,058,989	454,032	14,079	17,995,264
1998	10,783,327	0	2,068,374	1,054,935	0	13,906,636
1999	10,086,652	0	11,857,092	707,036	0	22,650,780
2000	18,618,465	0	32,182,515	3,187,626	358	53,988,964
2001	16,058,946	0	6,849,597	476,579	0	23,385,122
2002	1,427,623	0	11,847,414	374,858	9,785	13,659,680
2003	100,465	12,852	7,874,749	104,839	0	8,092,905
2004	5,462,737	0	11,496,707	2,418,596	149,385	19,527,425
2005	14,653,885	0	4,314,689	405,611	0	19,374,185
2006	60,179,506	499,718	15,714,748	1,206,264	5,337	77,605,573
2007	91,063,012	0	11,248,725	253,825	21,335	102,586,897
2008	105,684,130	0	8,702,042	686,786	17,447	115,090,405
2009	3,548,186	5,916,064	7,617,916	8,494,096	50,819	25,627,081
2010	5,800,990	0	14,211,880	2,499,524	84,152	22,596,546
2011	17,706,208	26,049	43,199,572	1,554,745	217,584	62,704,159
2012	34,058,148	191,100	10,385,287	463,926	129,675	45,228,136
Total	439,364,913	6,794,657	218,706,398	27,309,188	716,964	692,892,120

The state sales tax rate is 6.5 percent.

Table 3.6
Estimated STATE Tax Deferred or Exempted

Year	Advanced Computing	Advanced Materials	Biotechnology	Electronic Device	Environmental Technology	Total
1995	13,511,536	122,491	2,175,626	1,312,315	12,864	17,134,833
1996	10,894,393	0	9,714,805	1,128,097	0	21,737,295
1997	10,544,709	0	3,088,253	343,164	10,641	13,986,767
1998	8,476,762	0	1,553,245	816,443	0	10,846,450
1999	7,963,780	0	8,942,291	548,348	0	17,454,419
2000	14,626,380	0	24,296,228	1,739,743	298	40,662,649
2001	12,304,038	0	5,153,668	365,002	0	17,822,709
2002	1,066,282	0	8,602,079	275,830	8,260	9,952,450
2003	77,953	9,386	5,716,294	82,842	0	5,886,475
2004	4,034,976	0	9,112,031	1,754,331	110,341	15,011,679
2005	11,325,926	0	3,064,361	311,603	0	14,701,891
2006	46,531,953	368,993	11,672,297	945,698	4,199	59,523,139
2007	66,553,513	0	7,939,612	166,234	16,509	74,675,869
2008	76,720,665	0	6,294,215	519,655	14,176	83,548,710
2009	2,109,470	4,052,172	5,736,969	5,959,981	39,798	17,898,389
2010	4,064,644	0	11,225,202	1,607,284	65,902	16,963,032
2011	11,577,190	18,206	29,987,390	1,079,027	170,397	42,832,210
2012	23,419,259	159,250	5,598,304	264,137	88,725	29,529,676
Total	325,803,429	4,730,499	159,872,872	19,219,731	542,111	510,168,642

The statewide average local rate was below 2 percent through 2004, but has increased annually since then. It was up to 2.4 percent in 2012.

Table 3.7
Estimated LOCAL Tax Deferred or Exempted

Year	Advanced Computing	Advanced Materials	Biotechnology	Electronic Device	Environmental Technology	Total
1995	3,409,237	26,383	624,650	229,317	4,144	4,293,730
1996	2,849,303	0	2,561,019	296,181	0	5,706,503
1997	2,923,455	0	970,736	110,868	3,438	4,008,497
1998	2,306,565	0	515,129	238,492	0	3,060,186
1999	2,122,872	0	2,914,801	158,688	0	5,196,361
2000	3,992,085	0	7,886,287	1,447,883	60	13,326,315
2001	3,754,908	0	1,695,928	111,577	0	5,562,413
2002	361,341	0	3,245,336	99,028	1,525	3,707,230
2003	22,512	3,466	2,158,456	21,997	0	2,206,431
2004	1,427,761	0	2,384,676	664,265	39,044	4,515,746
2005	3,327,959	0	1,250,328	94,008	0	4,672,294
2006	13,647,553	130,725	4,042,451	260,566	1,138	18,082,434
2007	24,509,498	0	3,309,113	87,591	4,826	27,911,027
2008	28,963,465	0	2,407,827	167,131	3,271	31,541,695
2009	1,438,716	1,863,892	1,880,947	2,534,115	11,021	7,728,692
2010	1,736,346	0	2,986,678	892,240	18,250	5,633,514
2011	6,129,018	7,843	13,212,182	475,719	47,187	19,871,949
2012	10,638,889	31,850	4,786,983	199,789	40,950	15,698,460
Total	113,561,484	2,064,158	58,833,525	8,089,457	174,854	182,723,478

Geographic Location of Participants Using the High Tech Deferral

The data indicate that investment in construction and machinery and equipment for R&D and pilot scale manufacturing appears to take place almost exclusively in urban counties. Eight counties are defined as urban: Benton, Clark, King, Kitsap, Pierce, Snohomish, Spokane, and Thurston. All other counties in the state of Washington are rural counties.

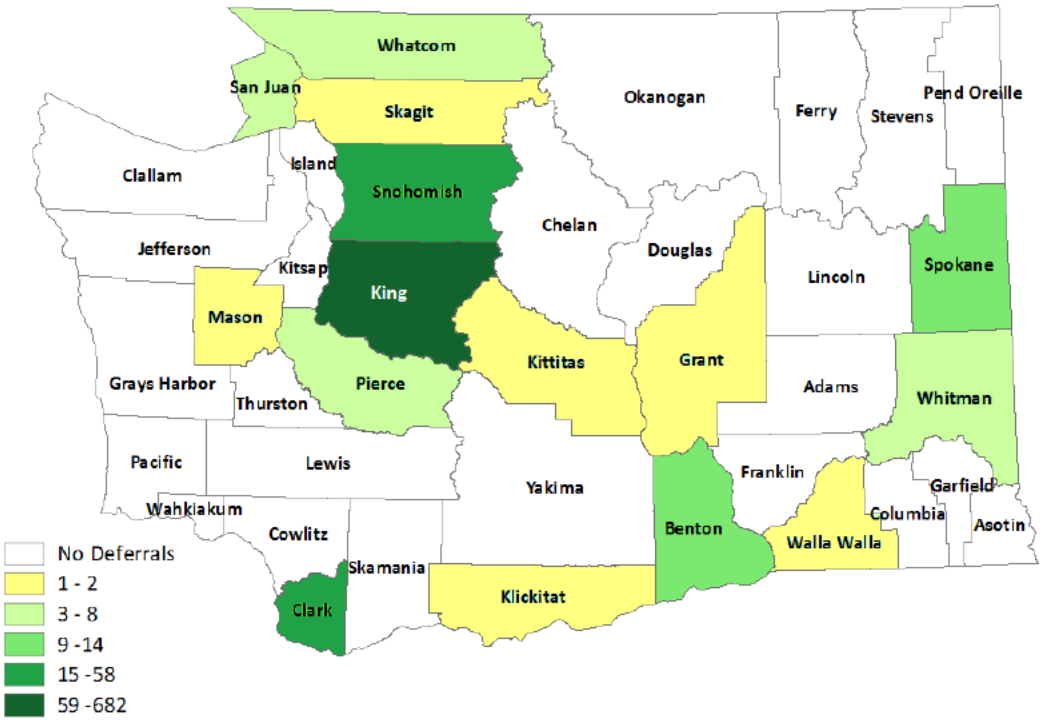
Table 3.8
Estimated Project Costs

	Project Costs	Percent
Urban	$7,886,774,833	95.7%
Rural	353,612,417	4.3%
Total	8,240,387,250	100.0%

Note: Benton County was designated as a rural county through 2008. A rural county has a population density of less than 100 persons per square mile or is less than 225 square miles.

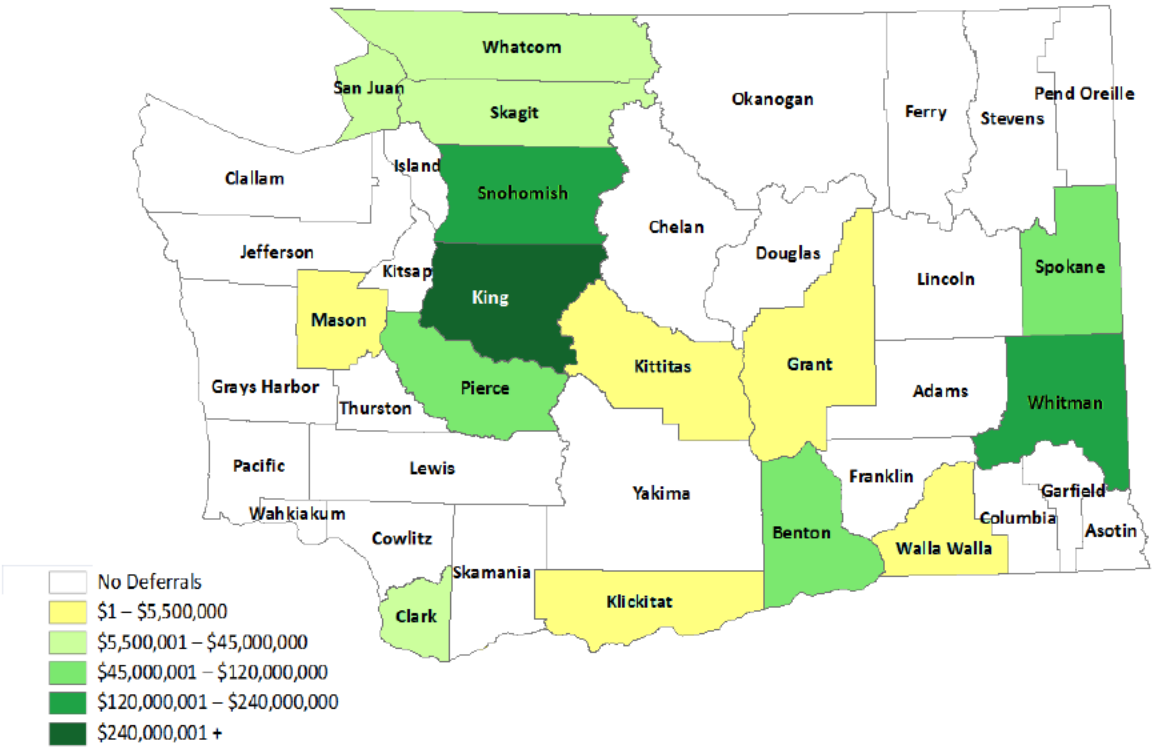
Projects are located in 15 counties throughout the State of Washington. Eighty percent of the projects are located in King County. The next two counties with the highest number of projects are Clark and Snohomish with 7 percent and 6 percent respectively.

Chart 3.10
Number of High Tech Deferral Applications Approved by County 1995-2012



Project costs by county differ from the number of applications. Projects located in King County account for 90 percent of the estimated project costs, and the remaining 10 percent of the project costs are distributed between 14 other counties.

Chart 3.11
High Tech Deferral Project Costs by County 1995-2012



Completed Projects

Through 2012, 879 applications have been approved and 687 have been audited. The Department conducts audits of deferral projects once they are operationally complete. Audits have been completed on approximately 77 percent of all approved projects and the total audited projects amount to $362.4 million in deferred taxes, over 52 percent of all deferrals.

Table 3.9 shows amounts of deferred sales and use taxes audited and remaining to be audited. Most of the audits have been conducted on projects with application dates of 2006 or prior. Recipients are required to notify the Department when projects are operationally complete. It should be noted that there are often several years between project application and completion.

Table 3.9
Audited and Unaudited Deferred Sales and Use Taxes

Year	Audited Amount	Unauditated	Total	Audited
1995	$21,428,563	$0	$21,428,563	100.0%
1996	27,443,798	0	27,443,798	100.0%
1997	17,995,264	0	17,995,264	100.0%
1998	13,906,636	0	13,906,636	100.0%
1999	22,607,780	43,000	22,650,780	99.8%
2000	53,601,123	387,841	53,988,964	99.4%
2001	11,592,780	11,792,342	23,385,122	49.6%
2002	12,399,392	1,260,288	13,659,680	93.3%
2003	7,971,238	121,667	8,092,905	98.5%
2004	19,002,425	525,000	19,527,425	97.3%
2005	19,374,185	0	19,374,185	100.0%
2006	76,593,573	1,012,000	77,605,573	98.7%
2007	17,623,656	84,963,241	102,586,897	17.2%
2008	24,884,208	90,206,197	115,090,405	21.6%
2009	10,086,106	15,540,975	25,627,081	40.2%
2010	3,234,405	19,362,141	22,596,546	14.3%
2011	2,551,301	60,152,858	62,704,159	4.1%
2012	113,092	45,115,044	45,228,136	0.3%
Total	$362,409,525	$330,482,594	$692,892,120	52.3%

Cancelled Projects

Another 60 investment projects were approved by the Department, but the applicant cancelled the project. In most instances the applicant never started the project because of financial considerations, so the certificate was never used.

Withdrawn Projects

Withdrawn applications are similar to cancelled applications, except the project was cancelled before the application was approved. The main reasons for an application to be withdrawn were: (1) both a lessee and lessor applied for the same structure costs or (2) the applicant decided against the project.

Denied Projects

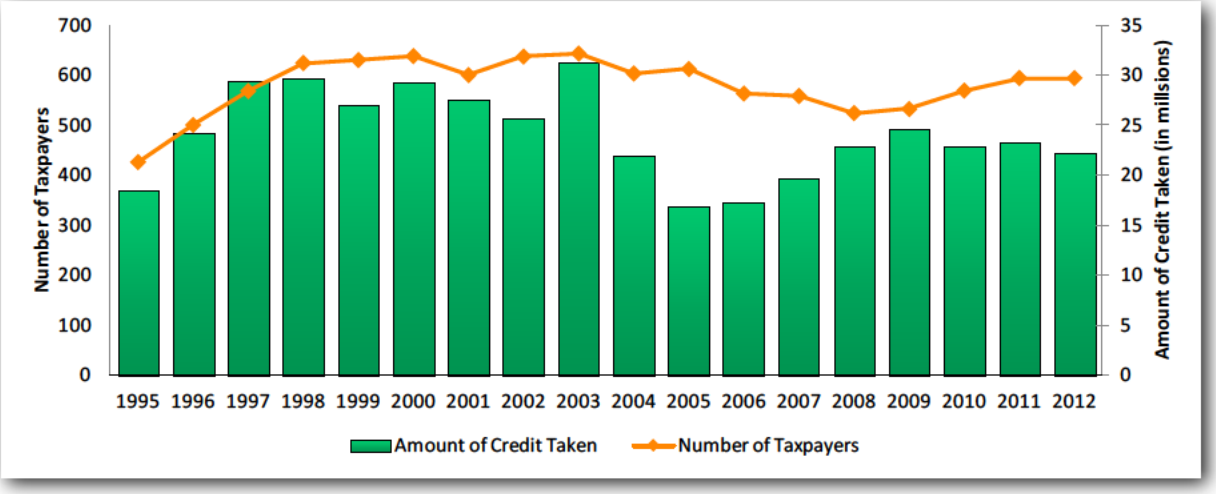
The Department denied 117 applications. The two most frequent reasons for denial were: (1) taxpayers began construction or acquired machinery and equipment prior to the application date or (2) taxpayers did not provide enough information to determine whether they were performing qualified R&D. The Department made multiple attempts to verify information before denying applications.

B&O TAX CREDIT

High Tech Credit Participation

The chart below shows the number of taxpayers taking the B&O tax credit for high technology R&D and the amount of credit taken. A major change in the calculation of the credit occurred in 2004. The calculation of the credit was revised again in 2005. It allowed taxpayers to calculate their credit based on the higher of (1) their average tax rate or, (2) a fixed percentage through 2009. In 2010, the credit became a fixed 1.5 percent of the R&D expenditures over 0.92 percent of the taxpayer's taxable income.

Chart 3.12
Taxpayers taking the High Tech Credit



Note: The credit calculation has changed several times since it became effective in 1995.

The table below shows the average credit taken per taxpayer before and after the change in the calculation of the credit.

Table 3.10
High Tech Credit

Year Credit Taken	Number of Counties With at Least One Taxpayer Taking a Credit	Number of Taxpayers Taking a Credit	Amount of Credit Taken	Average Credit Taken Per Taxpayer
1995	22	426	$18,538,814	$43,518
1996	24	500	24,270,643	48,541
1997	25	568	29,480,860	51,903
1998	26	624	29,651,077	47,518
1999	23	630	26,968,006	42,806
2000	26	638	29,211,593	45,786
2001	25	600	27,512,859	45,855
2002	26	637	25,734,570	40,400
2003	28	643	31,234,137	48,576
2004	25	603	21,966,165	36,428
2005	26	612	16,832,182	27,504
2006	26	563	17,251,432	30,642
2007	27	558	19,661,695	35,236
2008	25	524	22,899,784	43,702
2009	24	532	24,645,220	46,326
2010	24	569	22,890,282	40,229
2011	25	594	23,211,387	39,076
2012	25	594	22,235,779	37,434
Total			$434,196,485	

Geographic Location of Participants Taking the High Tech Credit

The data indicate that taxpayers taking the high tech credit mainly reside in urban counties. Eight counties are defined as urban: Benton, Clark, King, Kitsap, Pierce, Snohomish, Spokane, and Thurston. All other counties in the state of Washington are rural counties.

The table below shows the distribution of credit between urban and rural counties. In order to show the entire amount of high tech credit taken, an unknown location was created for taxpayers with an out-of-state address. It is assumed that these taxpayers are taking the credit for in-state activities.

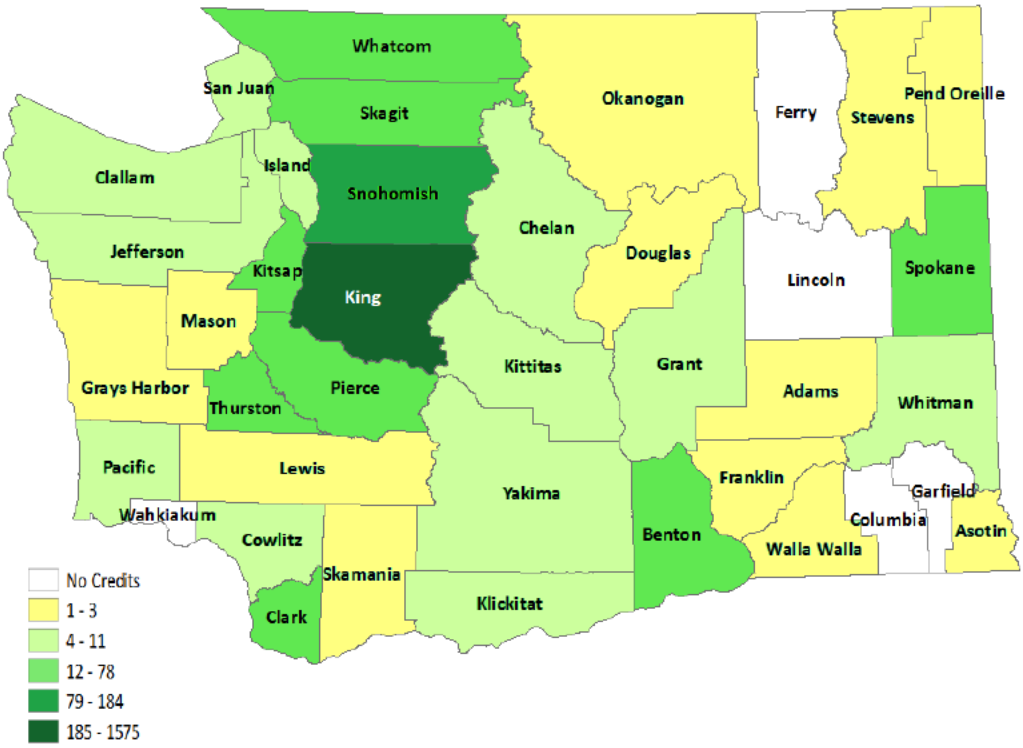
Table 3.11
High Tech Credit Taken

	Credit	Percent
Urban	$337,761,430	77.8%
Rural	66,924,486	15.4%
Unknown Location	29,510,568	6.8%
Total	$434,196,485	100.0%

Since the inception of the program, taxpayers located in 34 counties have taken the credit. The five counties where a credit has not been taken are Columbia, Ferry, Garfield, Lincoln, and Wahkiakum.

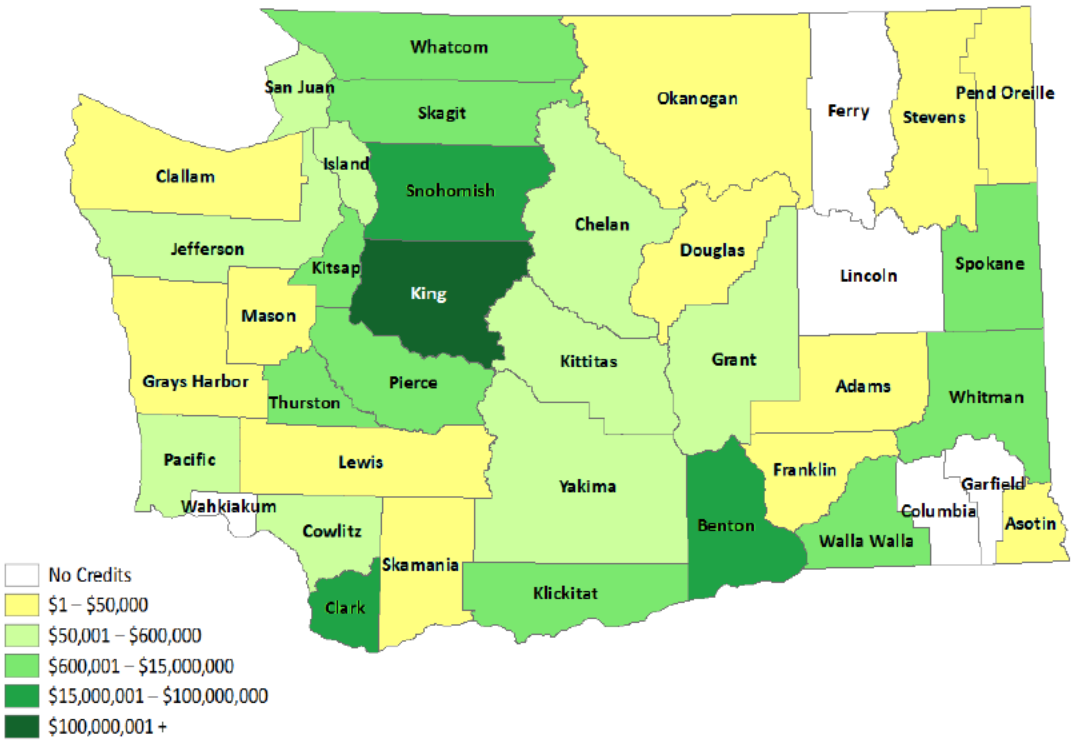
Almost 62 percent of the taxpayers taking the credit are located in King County, with another 10 percent are located in Snohomish County.

Chart 3.13
Number of Taxpayers Taking High Tech Credit by County 1995-2012



The credit taken by county differs from the number of applications. Approximately 53 percent of the credit taken was from taxpayers located in King County. Benton County represents 16 percent and Snohomish 11 percent.

Chart 3.14
Amount of High Tech Credit by County 1995-2012



Chapter Four – Evaluation of the Tax Incentives

Overview

The Legislature identified several areas of interest for analysis of the high tech incentives. This chapter attempts to identify trends in data provided by participants in the high tech incentive programs or information available from other sources to give insights into these areas of interest.

Analysis shows:	
Job creation:	From 2006 through 2012 employment growth was volatile. There does not appear to be a year-to-year relationship in growth patterns between participants and non-participants. Some years participants' growth was higher, and some years it was lower. Annual averages were used to compare growth: • Non-participants' annual average growth was 3.0 percent, and • Participants' annual average growth was 2.9 percent.
Jobs created for Washington residents:	For participants, 86 percent of new employees at the time of hiring were Washington residents in 2012, an increase from the 77 percent in 2005 or the low of 67 percent in 2008.
Company growth:	Participants had $7.6 billion in total taxable income for the business and occupation tax with an average of $12.2 million per taxpayer in 2012, which is down from the 2008 high of $10.5 billion total taxable income with an average of $20.2 million per taxpayer.
Introduction of new products:	On average from 2009 to 2012, the highest percentage of new products, services, processes and projects were in the Advanced Computing industry (64 percent). However, Biotechnology had the highest average percentage of on-going projects with 38 percent (from 2009 to 2012).
Diversification of the state's economy:	In 1995, among the selected states Washington ranked 7th in the number of patents per one million people with 229 patents per one million people. In 2005, that rank increased to 4th with 396 patents per one million people. In 2012, Washington ranked 3rd with 868 patents per one million people.
Growth in research and development investment:	While the Great Recession did impact Washington participants share of the U.S. R&D investment, Washington has recovered and now has 1.58 percent of the U.S. R&D investment versus 1.34 percent in 2005 and 1.41 percent in 2009.
Movement of taxpayers or consolidation of taxpayer's operations into the state:	In 2012, for the first time in four years, more employees moved into Washington than were moved out of Washington by the high tech incentive participants. However, while the percentage of manufacturing and distribution jobs moving out of Washington has decreased, the percentage of research jobs moving out of Washington has increased.

Participants and Non-Participants

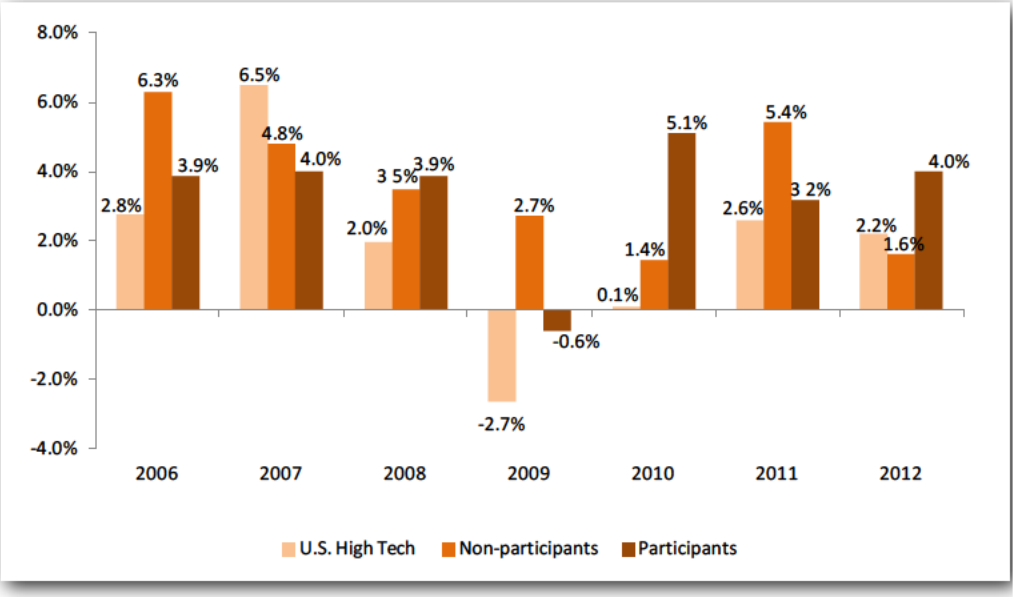
For Chapter 4, the following definitions apply:

Participants and Non-participants:	
Participant:	Taxpayers that either took the high tech credit or the high tech deferral. Participants complete an annual survey each year as required by law. In chapter 4, a participant is included in the analysis only for the year or years they participated. However, participants are NOT considered non-participants in the year or years they did not fill out a survey.
Non-participant:	Non-participants only include those taxpayers that have NOT participated since the high tech credit or deferral programs started and that are in one of the identified high tech industries (see Appendix B).

Job Creation

Job creation cannot be directly tied to the use of the high tech incentive programs. However, the following chart compares the percentage growth for participants, non-participants, and U.S. For this analysis, participants and non-participants had to exist in both the prior year and the current year for the calculation of the percentage change.

Chart 4.1
U.S., Washington High Tech Participant and Washington Non-participant Year over Year Employment Growth

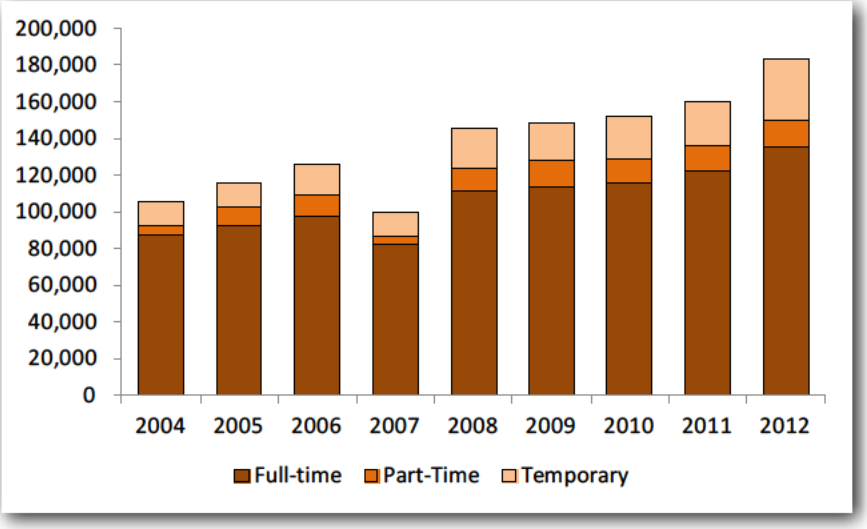


Sources: Employment Security data used for Washington participants and non-participants
Bureau of Labor Statistics data used for U.S. high tech identified industries

The growth shown in Chart 4.1 is from the prior year to the year shown. So, between 2005 and 2006, participant employment grew 3.9 percent and is shown for 2006. From 2006 through 2012, both participants and non-participants had better average annual growth than the U.S. which had annual average growth of 1.6 percent per year.

- Non-participants' annual average growth was 3.0 percent per year.
- Participants' annual average growth was 2.9 percent per year.

Chart 4.2
High Tech Participants – As Reported on the Annual Survey
Full-time, Part-time, Temporary Employees



Full-time, Part-time, and Temporary Employment:
On the annual survey, participants provide employment information that includes: (1) the number of employees as of December 31st of each year and (2) the percentage of the employees that are full-time, part-time, and temporary.

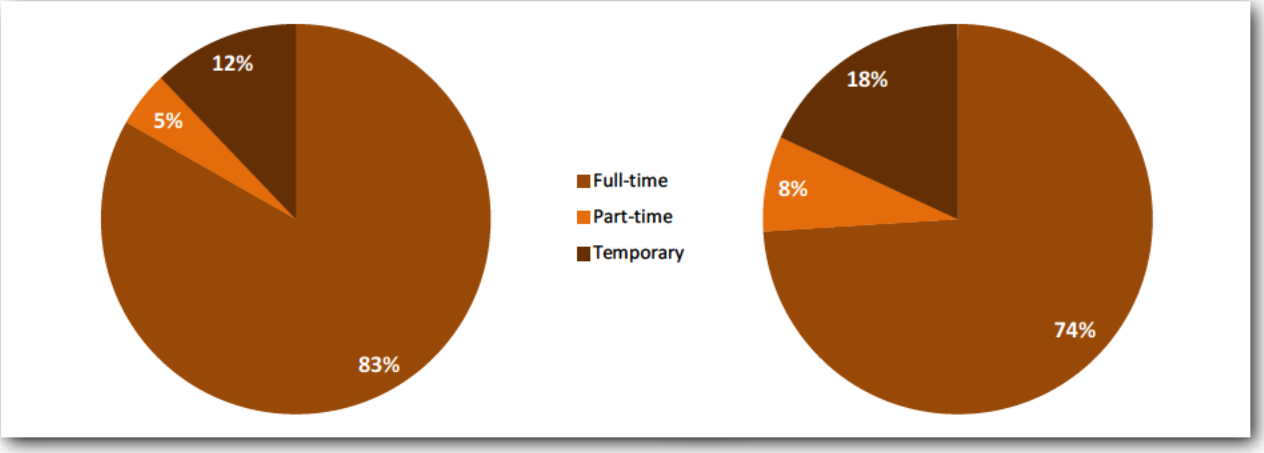
Overall employment has increased annually, except for in 2007, as shown in the chart to the left.

Since 2004, there has been movement to more part-time and temporary employees, a trend that has also occurred in other sectors of the economy. Chart 4.3 shows the percentage of employees that were full-time, part-time and temporary in 2004 and Chart 4.4 shows the percentage of employees that were full-time, part-time and temporary in 2012.

The percentage of part-time employees has increased from 5 percent in 2004 to 8 percent in 2012 while the percentage of temporary employees has increased from 12 percent in 2004 to 18 percent in 2012. These reduced the percentage of full-time employees from 83 percent in 2004 to 74 percent in 2012.

Chart 4.3
Employment by Type of Employee
2004

Chart 4.4
Employment by Type of Employee
2012

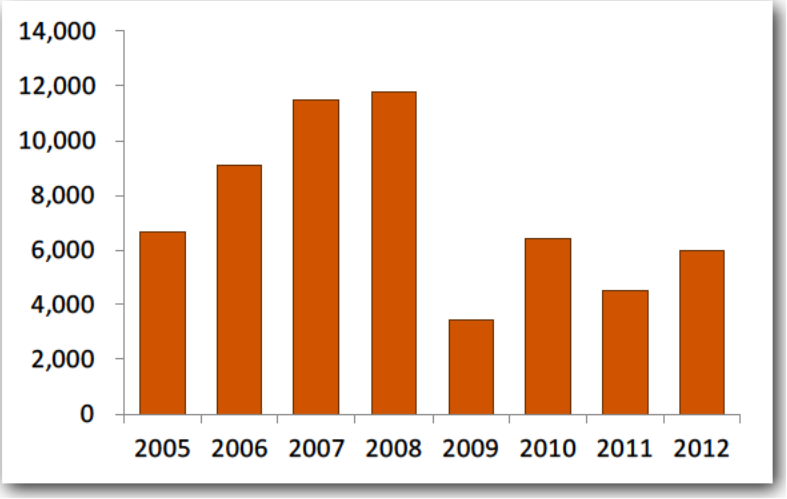


Hiring through Temporary Staffing Firms:

Prior to the Great Recession, hiring from temporary staffing firms was on the rise. Since then, it has been up and down.

The chart to the right shows the number of people hired through temporary staffing firms from 2005 through 2012. This information comes from the annual survey responses of participants in the high tech incentive programs.

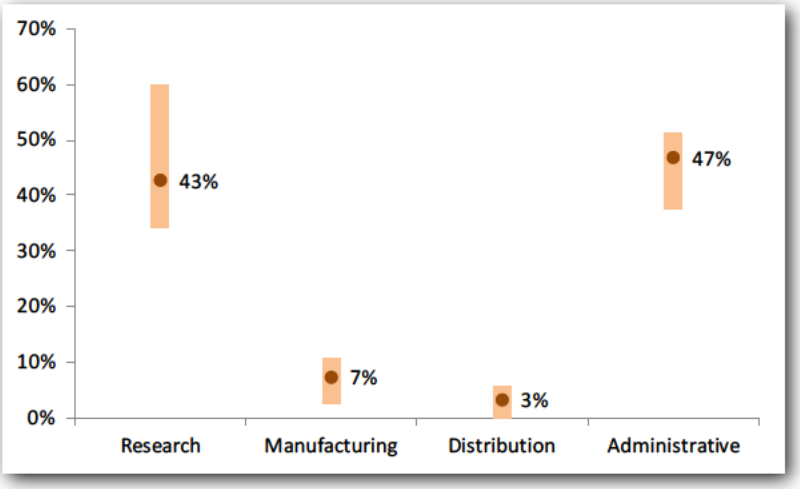
Chart 4.5
Temporary Staffing Firm Hiring



New Employees by Type of Position:

The percentage of new employees that are in research, manufacturing, distribution or administrative positions fluctuates each year. The chart below shows the minimum and maximum percentages from 2005 to 2012. The average percentage is highlighted.

Chart 4.6
Percentage of New Employees by Type of Position



Note: The bar shows the minimum and maximum percentage for each type of position from 2005 to 2012. The darker orange dot is the average percentage from 2005 to 2012 for that type of position.

The largest percentages of new employees for the high tech participants were hired in either research positions or administrative positions.

On average from 2005 to 2012, 43 percent of the new positions were in research positions. New research positions had its highest average of new employees being 60 percent in 2005 and its lowest percentage of 34 percent in 2011.

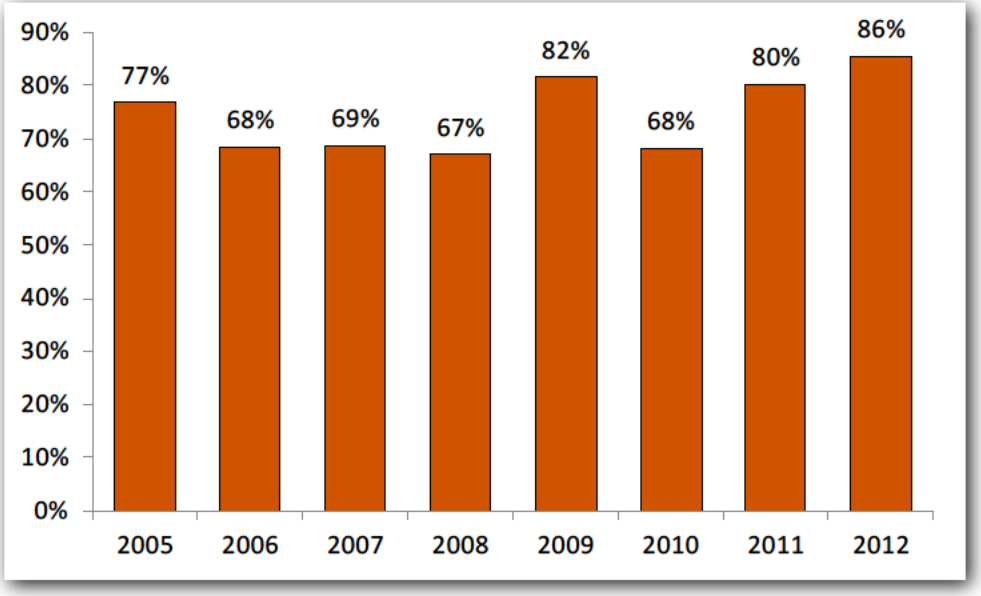
New administrative positions had its highest average of new employees, 51 percent, in 2012 and its lowest percentage, 38 percent, in 2005. On average from 2005 to 2012, 47 percent of the new positions were administrative positions.

Jobs Created for Washington Residents

High tech participants answer several questions related to employment in Washington on the annual survey. Statistical information on these questions can be found in the "Descriptive Statistics for Tax Incentive Programs." Below is a look at the percentage of new positions created by participants in Washington and filled by Washington residents.

The percentage of new positions in Washington filled by Washington residents at the time of hiring reached its highest level in 2012; 86 percent of new employees hired by high tech participants were Washington residents. The percentage has fluctuated between a low of 67 percent in 2008 and the highest level in 2012 as can be seen in Chart 4.7.

Chart 4.7
Percentage of New Employees that were Washington Residents at the Time of Hiring



Company Growth

The high tech incentive participants generally appear to be more impacted by the Great Recession and slow economic recovery in the years following the recession than non-participant taxpayers. However, there are many factors other than tax incentives that impact a taxpayer's ability to weather a recession, such as the size of the taxpayer, the location of the business, and the amount of capital available to keep the business running.

Non-participant average B&O taxable income growth:

The number of taxpayers and total taxable B&O reported on the combined excise tax return fluctuates from year to year. For this reason, the average B&O taxable income by year was used to examine company growth. B&O taxable income averaged $0.9 to $1.1 million each year between 2004 and 2012 for non-participants of the high tech incentive programs. Overall the Great Recession did not greatly impact the average B&O taxable income of non-participants between 2005 and 2012 as shown in the chart to the right.

Chart 4.8
Non-Participant Average B&O Taxable
As Reported on the Combined Excise Tax Return

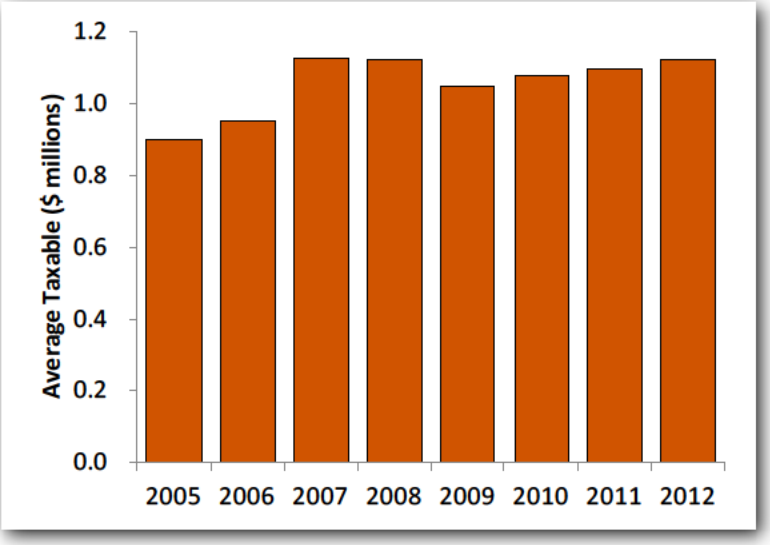


Table 4.1
High Tech Credit and Deferral Participants
Total B&O Taxable as Reported on the Annual Survey

Year	Taxpayers	Total Taxable	Average Taxable
2004	621	9,847,261,539	15,857,104
2005	554	8,915,620,360	16,093,178
2006	522	9,274,518,674	17,767,277
2007	542	9,268,759,267	17,101,032
2008	519	10,462,407,399	20,158,781
2009	523	10,378,350,791	19,843,883
2010	572	9,034,386,192	15,794,381
2011	605	9,181,180,387	15,175,505
2012	623	7,629,879,268	12,246,997

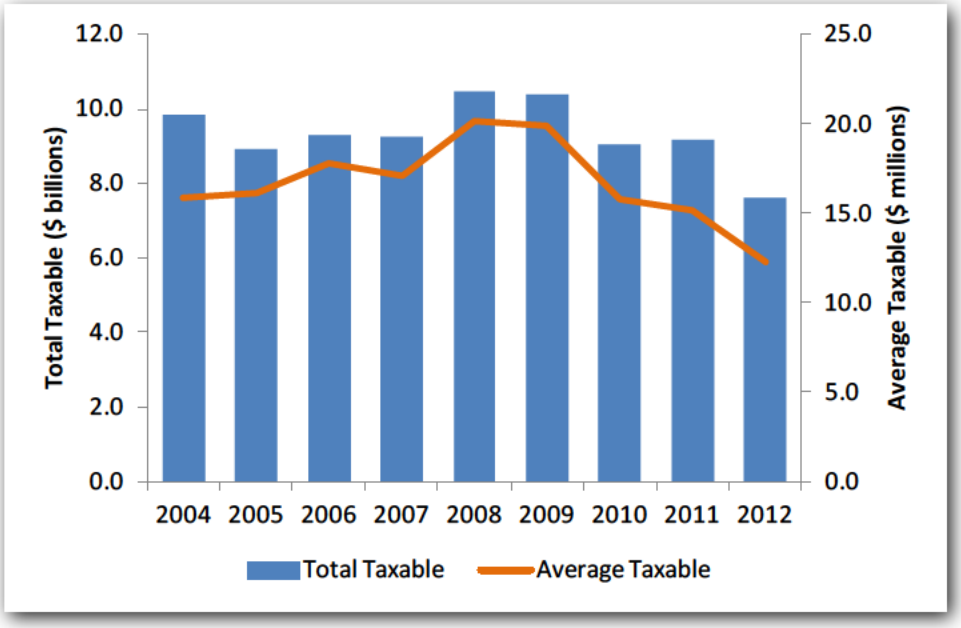
High tech participants average B&O taxable income growth:

The number of participants declined between 2004 and 2008, but has increased each year since 2009.

The total B&O taxable income and average B&O taxable income for participants declined since it peaked in 2008. The detailed year to year information is found in the table to the left.

For the participants in the high incentive programs, the relationship between the average B&O taxable income and the total B&O taxable income tends to be fairly consistent as can be seen in Chart 4.9.

Chart 4.9
High Tech Credit and Deferral Participants
Total Taxable and Average Taxable



Note: The vertical axis on the left is in billions of dollars of total B&O taxable income and the vertical axis on the right is in millions of average B&O taxable income so that the two could be compared in the same graph.

Growth of high tech participants compared to non-participants:

The volatile growth between 2004 and 2012 necessitated looking at the average annual growth over this period of years. The following table shows the average annual growth rate of the average B&O taxable for non-participant taxpayers versus participants.

Period	Non-Participants	Participants
2005 to 2007 - three years prior to the recession	11.3% Growth	1.3% Growth
2008 and 2009 - two years of the recession	1.6% Decline	0.3% Decline
2010 to 2012 - three years after the recession	4.4 % Growth	5.6% Decline

In general, the economy appears to have improved for non-participants. However, participants appear to continue to be impacted by the slow economic recovery since the Great Recession.

Introduction of New Products

Participants report on the annual survey the number of each of the following resulting from the R&D for which they received an incentive:

- New products,
- New services,
- New processes,
- New projects, and
- On-going projects.

These items are reported in the annual "Descriptive Statistics for Tax Incentive Programs" for each program. This report does not duplicate that information but rather looks at high tech participants as a whole and not by the program of participation. Due to fluctuations in the participants that utilize these programs, this report uses averages to look at changes over time.

Term	Definition
New Items:	New products, new services, new processes, and new projects.
All Items:	New items plus on-going projects.

On the annual survey each participant reports new items and on-going projects for each industry they are involved in (advanced computing, advanced materials, biotechnology, electronic devices, or environmental technology). Each participant interprets for their business the definition of "new" and "on-going". From year to year anomalies exist in participant reporting. This study removes the data of outlier participants.

Participants only provide their total R&D investment. When looking at each industry, double counting of R&D investment occurs across the industries. So, the total of the industries does not match the total R&D investment for all high tech participants combined.

All Industries:

The number of participants reporting new items or on-going projects dropped in 2008, the first year of the Great Recession. However, the number of participants reporting increased from 2009 through 2012.

The number of new items also dropped in 2008 and continued to decrease through 2011 even though the number of participants reporting all items began to increase in 2009. In 2012 there was a substantial increase in the number of new items, surpassing the number of new items in 2007, the last year prior to the Great Recession.

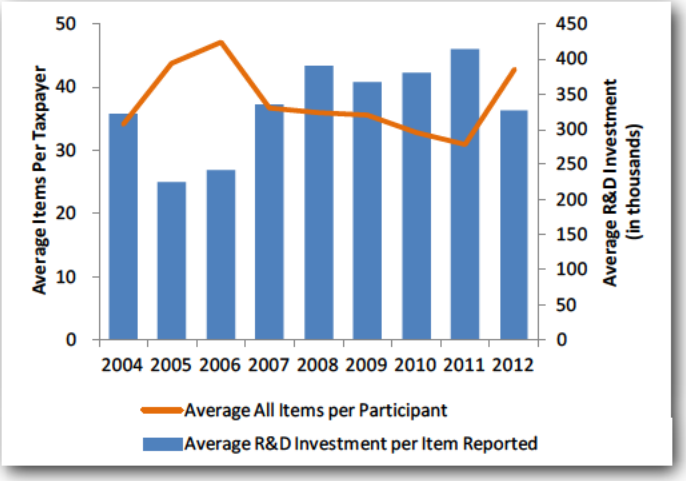
A large spike in on-going projects occurred in 2005 and 2006 and then dropped greatly beginning in 2007. On-going projects started rising again in 2012.

R&D investment fell during 2009, the second year of the Great Recession, but increased each year since. In 2012, R&D investment increased by over $980 million. However, the average R&D investment per item dropped because of the large increase in new items and on-going projects.

Table 4.2
All Industries
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	621	16,369	4,786	6,799,953,526
2005	554	13,025	11,262	5,440,161,788
2006	522	11,605	12,961	5,930,058,133
2007	542	13,366	6,566	6,677,917,782
2008	519	12,888	5,738	7,271,298,036
2009	523	11,550	7,079	6,834,496,393
2010	572	11,405	7,393	7,141,803,312
2011	605	11,113	7,581	7,735,255,264
2012	623	15,880	10,765	8,718,009,475

Chart 4.10
All Industries
Average All Items and Average R&D Investment per Item



The table contains detail information. In addition, the chart shows the average of all items per participant, and the average R&D investment per item reported.

Differences can be seen for each industry involved in the high tech incentives: advanced computing, advanced materials, biotechnology, electronic device technology, and environmental technology.

Advanced Computing:

The largest number of participants report under the advanced computing industry. The number of advanced computing participants reporting new items or on-going projects dropped from 2004 through 2008, the first year of the Great Recession. However, the number of participants reporting increased annually since 2009.

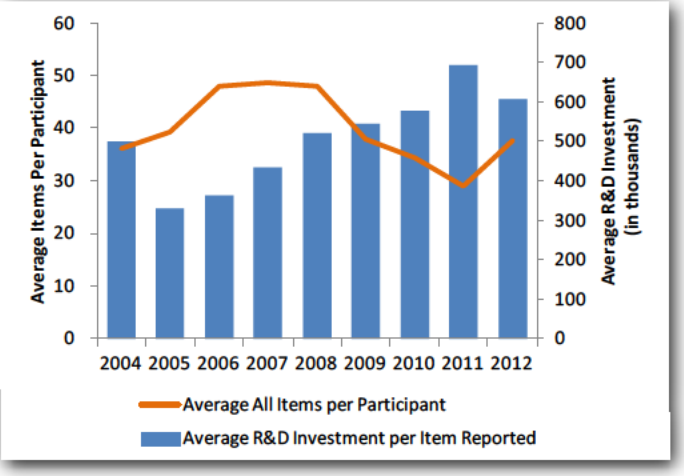
The total R&D investment by advanced computing participants increased each year since 2005, while the number of new items and on-going projects remained fairly steady through 2011, varying from about 9,000 to 11,000 per year. For these reasons, the average R&D investment per item increased from 2005 to 2011. In 2012, the number of all items increased, outpacing the R&D investment and causing the first decrease in average R&D investment per item since 2005.

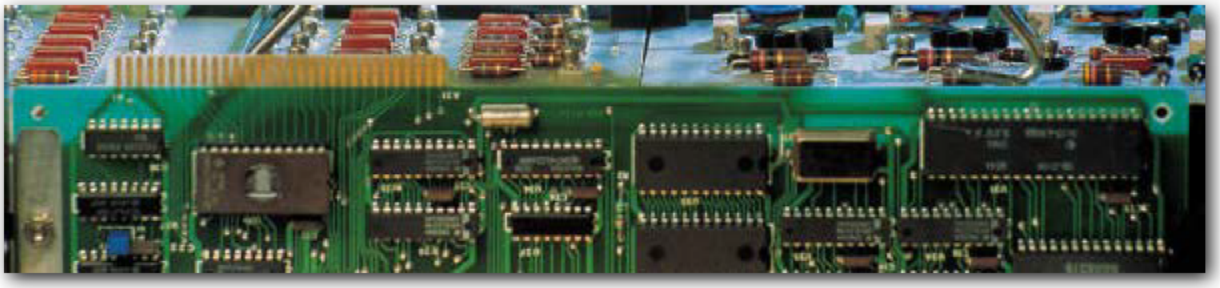
As with most industries, the data in the advanced computing industry hint at a lag between the R&D investment and the number of new items and on-going projects. When the average number of items was higher, the average R&D investment was lower. As the number of items dropped, the average R&D investment increased again. The chart and table to the right provide additional detail.

Table 4.3
Advanced Computing
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	262	8,156	1,300	4,725,687,882
2005	256	7,946	2,127	3,335,427,391
2006	225	8,077	2,731	3,924,163,749
2007	222	7,953	2,844	4,690,819,893
2008	207	7,916	2,004	5,155,544,124
2009	268	7,951	2,202	5,530,284,359
2010	286	7,592	2,250	5,679,937,709
2011	305	7,007	1,841	6,137,725,056
2012	317	9,654	2,263	7,238,111,016

Chart 4.11
Advanced Computing
Average All Items and Average R&D Investment per Item





Advanced Materials:

In direct contrast to the advanced computing industry, the advanced materials industry has one of the smallest sets of participants in the high tech industries. Because of the small number of participants, the industry data appear more volatile.

While the total number of participants fluctuated from year to year, the total R&D investment for this industry increased each year since 2006. In 2009, the total R&D investment more than doubled from the previous year, and continues to remain high.

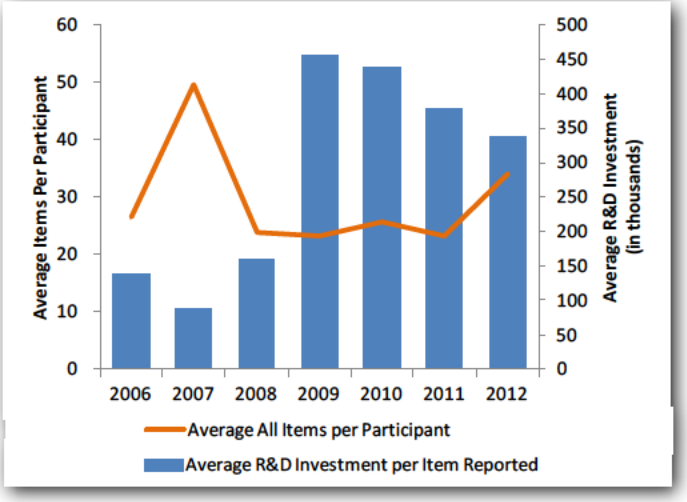
The past four years, the average R&D investment per item has been much greater than previous years. This may be part of the reason for the increase in the average number of products between 2011 and 2012, since most industries show a lag between increased R&D investment and an increase in items produced.

See the table and chart for additional detail.

Table 4.4
Advanced Materials
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	32	882	74	194,257,422
2005	24	150	160	276,826,514
2006	27	362	351	99,016,142
2007	29	1,056	381	127,340,878
2008	35	732	102	133,387,290
2009	33	506	261	349,736,511
2010	33	508	341	372,084,029
2011	44	632	387	385,258,403
2012	37	794	466	424,605,404

Chart 4.12
Advanced Materials
Average All Items and Average R&D Investment per Item



Biotechnology:

Biotechnology participants increased from 2009 through 2012. R&D investment also increased significantly in biotechnology since 2006. However, the industry has not seen similar growth in the total of new items and on-going projects until 2012. The number of new items more than doubled between 2011 and 2012 and the number of on-going items nearly doubled.

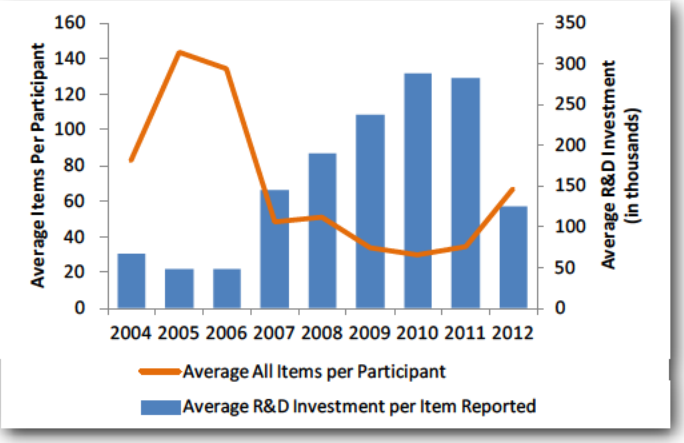
The biotechnology industry is reported as having one of the longest periods of time to get a product to market. It often takes 10 to 15 years to receive Food and Drug Administration approval. Additionally, less than 1 percent of new items make it to market. This may account for the inconsistent changes in the total of new items and on-going projects in this industry.

The table and chart provide additional detail.

Table 4.5
Biotechnology
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	86	4,821	2,289	474,169,129
2005	72	2,683	7,642	496,473,160
2006	74	1,056	8,869	474,330,532
2007	76	2,105	1,576	535,208,656
2008	77	1,832	2,109	746,931,795
2009	98	1,226	2,055	779,669,888
2010	117	1,284	2,191	1,001,196,349
2011	117	1,258	2,750	1,132,954,240
2012	127	2,972	5,493	1,050,348,171

Chart 4.13
Biotechnology
Average All Items and Average R&D Investment per Item



Electronic Device Technology:

R&D investment increased for the electronic device technology industry since 2008, and does not appear impacted by the Great Recession.

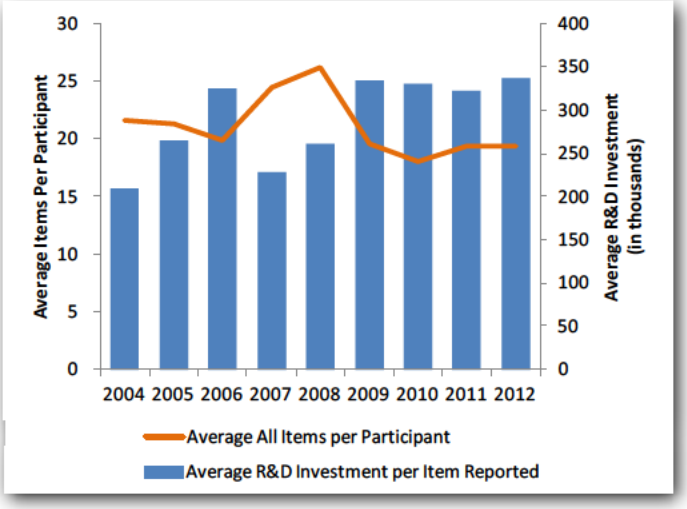
This industry shows the most stability in terms of the average number of items per participant and the average R&D investment per year. The average R&D investment appears lowest just when the average number of new and on-going items increased. This could be the result of the increase in the average R&D investment which occurred in the years just prior to the growth in the average number of items. Again, this indicates a lag between increases in R&D investment and items produced.

The table and chart to the right provide additional detail.

Table 4.6
Electronic Devices
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	154	2,322	1,004	695,874,638
2005	152	2,131	1,112	860,058,872
2006	143	1,991	845	923,166,391
2007	139	2,078	1,326	777,147,336
2008	130	2,085	1,324	887,386,723
2009	150	1,579	1,351	981,204,114
2010	178	1,835	1,376	1,062,241,821
2011	180	1,764	1,726	1,123,498,385
2012	177	2,099	1,323	1,151,545,811

Chart 4.14
Electronic Devices
Average All Items and Average R&D Investment per Item



Environmental Technology:

The environmental technology industry averages tell a similar story to those of the other industries – just in a more dramatic way. The industry invested greatly in R&D between 2004 and 2006 and then R&D investment started dropping – just as the average number of items per participant increased greatly.

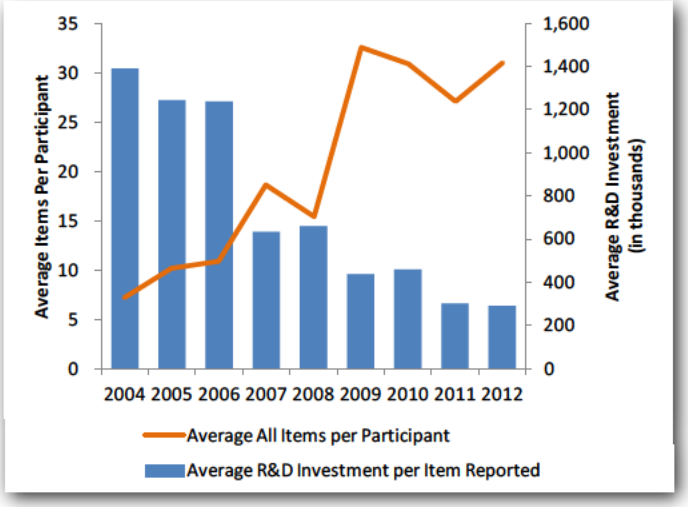
The small number of participants in this industry may account for these more dramatic results.

The table and chart provide additional detail.

Table 4.7
Environmental Technology
New Items, On-going Projects and R&D Investment

Year	Number Participants Reporting	New Items	Ongoing Projects	R&D Investment of Taxpayers
2004	43	188	119	427,631,363
2005	33	115	221	418,374,109
2006	26	119	165	351,716,440
2007	33	174	439	388,223,123
2008	34	323	199	344,540,988
2009	46	288	1,210	653,338,524
2010	46	186	1,235	655,753,807
2011	49	452	877	398,117,215
2012	51	361	1,220	455,922,278

Chart 4.15
Environmental Technology
Average All Items and Average R&D Investment per Item



All Industry Summary:

While each industry follows its own pattern, there appears to be a lag between an increase in R&D investment and the increase in the average number of new items produced.

New versus On-going

The percentage of new and on-going items by industry shows clearly that advanced computing dominates new items produced by the high tech participants. However, biotechnology has the most on-going projects.

From year to year swings occur in the number of new items each industry reports. On average, the advanced computing industry's percentage of new items averaged 64 percent between 2009 and 2012 – the next closest percentage is electronic device technology with 15 percent.

By contrast, biotechnology has 38 percent of the on-going projects while advanced computing has 26 percent. The length of time it takes to bring biotechnology research to a new product, service, or process likely accounts for the difference between biotechnology and the other industries.

Chart 4.16
Average New Items by Industry
2009 to 2012

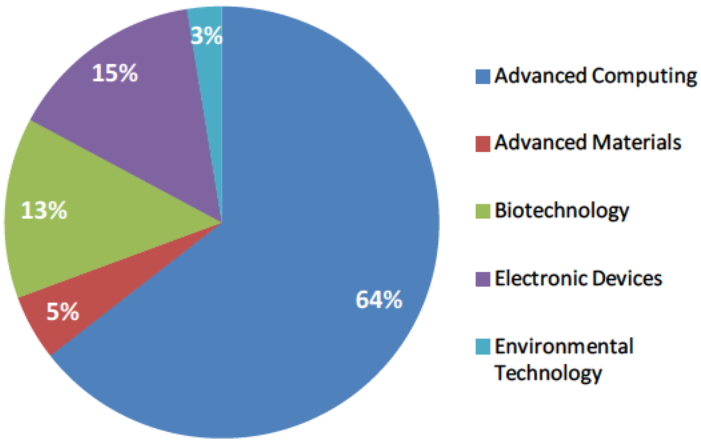
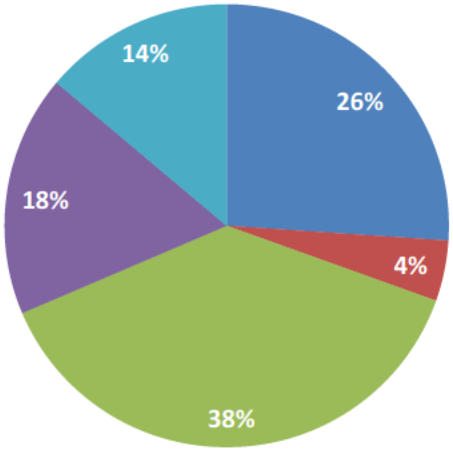


Chart 4.17
Average On-going Projects by Industry
2009 to 2012



Diversification of the State's Economy

Analysis of patent data from the U.S. Patent and Trademark Office indicates Washington continues to expand its technology expertise. Washington has:

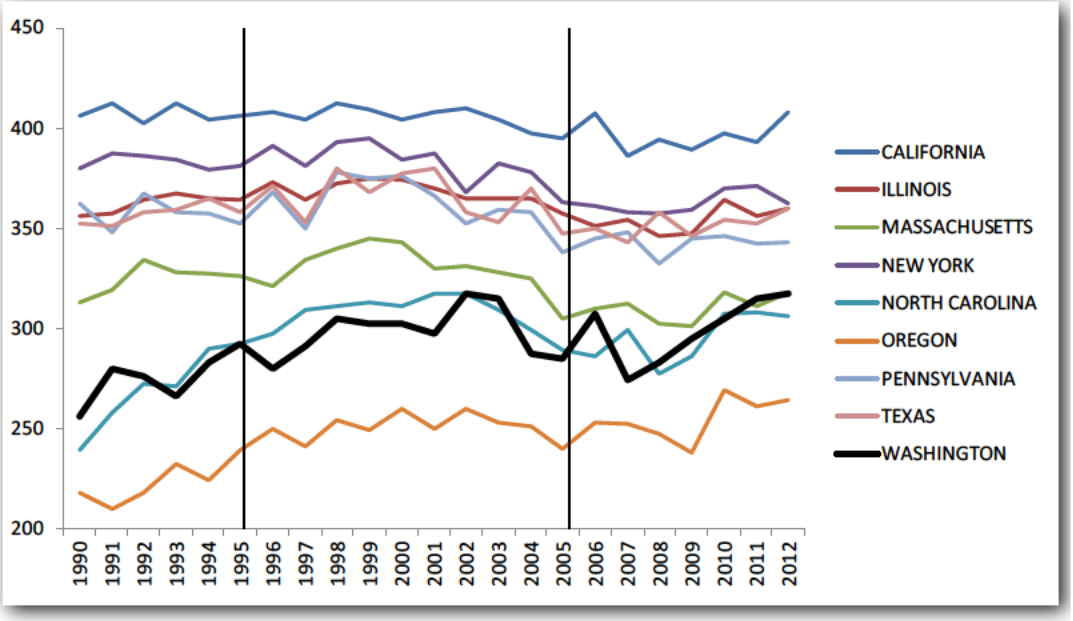
- Increased the number of classifications in which patents have been granted (breadth), and
- Increased the number of patents, especially in the high tech incentive patent classifications (depth).

Comparisons are shown for Washington and eight other states. The following criteria were used to select the states:

- The number of approved high tech patents over a 5-year period
- Potential expansion locations for WA employers
- Home state of firms competing with WA employers
- Independent reports as to competitive high tech locations in the United States

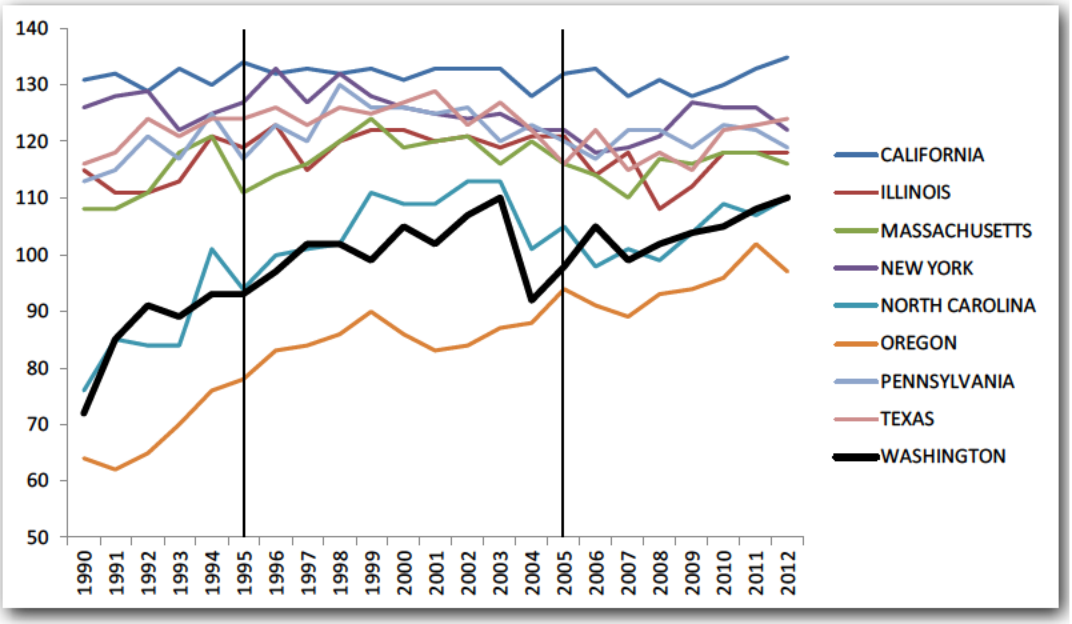
Breadth of Patent Classifications: Since 2007, there has been an increase in the number of classifications for patents where the first named investor resides in Washington.

Chart 4.18
Number of Classifications in Which Patents Granted For Selected States



In the other selected states, the number of classifications has remained relatively flat. The chart above shows the number of classifications patents granted in each selected state.

Chart 4.19
Number of High Tech Classifications in Which Patents Granted For Selected States

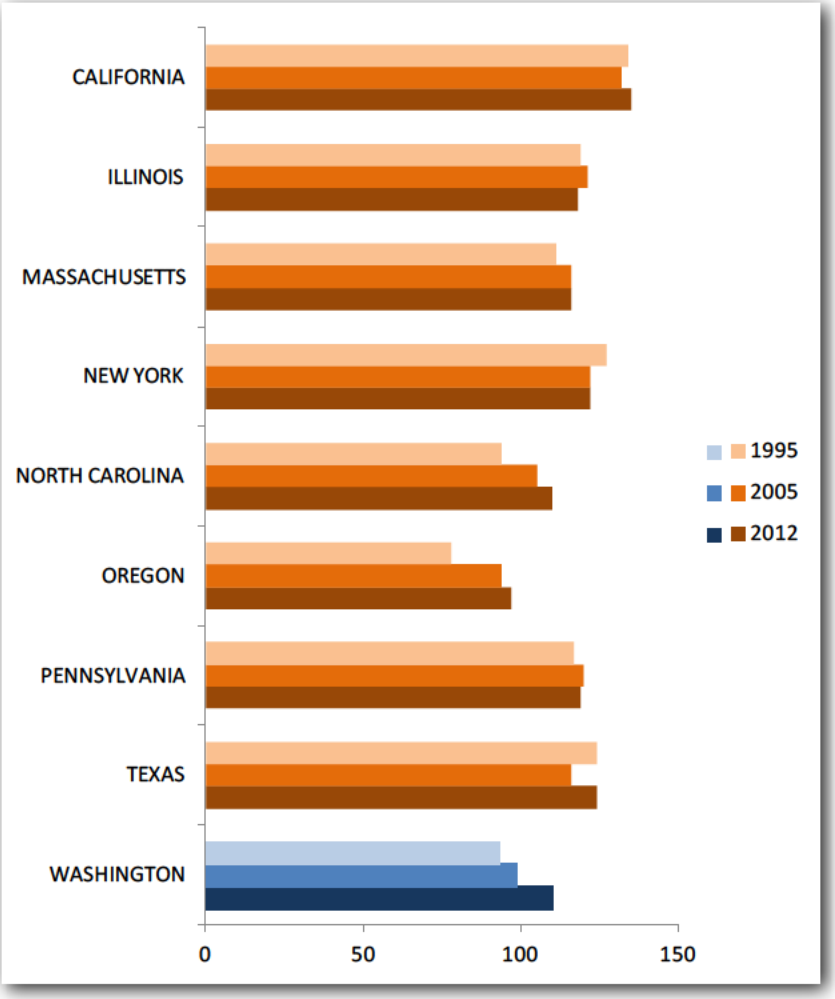


High Tech Classifications: Washington has seen similar growth in the number of high tech incentive patent classifications.

Again, the majority of the selected states remained flat.

The chart shows information per selected state.

Chart 4.20
Number of High Tech Patent Classifications for Selected States
1995, 2005, and 2012



Growth for most of the selected states appears fairly flat. To view the overall change in the number of high tech incentive patent classifications the chart to the left compares three points in time. These years were selected because:

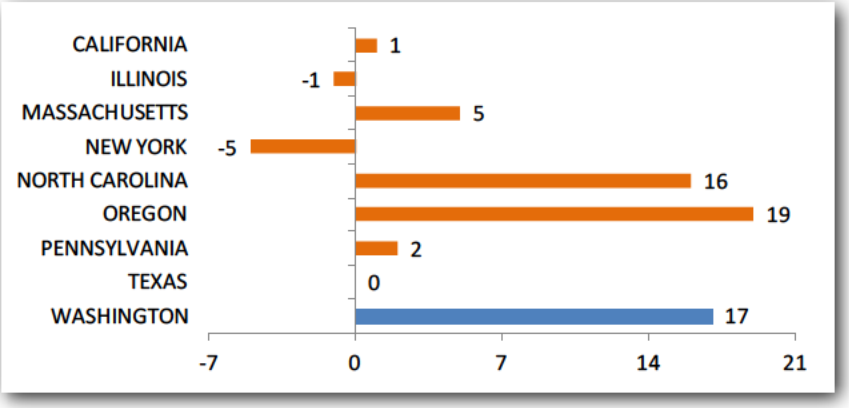
- The high tech incentive programs became effective in 1995,
- Significant changes were made to the high tech credit calculation in 2005, and
- 2012 is the most current year of data available.

The only states to show a significant and steady increase in the number of high tech classifications in which patents are granted between 1995, 2005 and 2012 include North Carolina, Oregon, and Washington.

The new classifications for Washington grew by 17 classifications between 1995 and 2012. Oregon had a larger increase, but still had patents granted in fewer high tech incentive patent classifications than Washington.

The chart to the right provides the details for the selected states.

Chart 4.21
Additional High Tech Patent Classifications for Selected States
Between 1995 and 2012



Depth of Patent Classifications: Washington's growth in the number of patents received per one million people grew faster than the other selected states. The chart to the right shows patents per one million people in selected states for comparison.

Chart 4.22
Patents per One Million Capita for Selected States

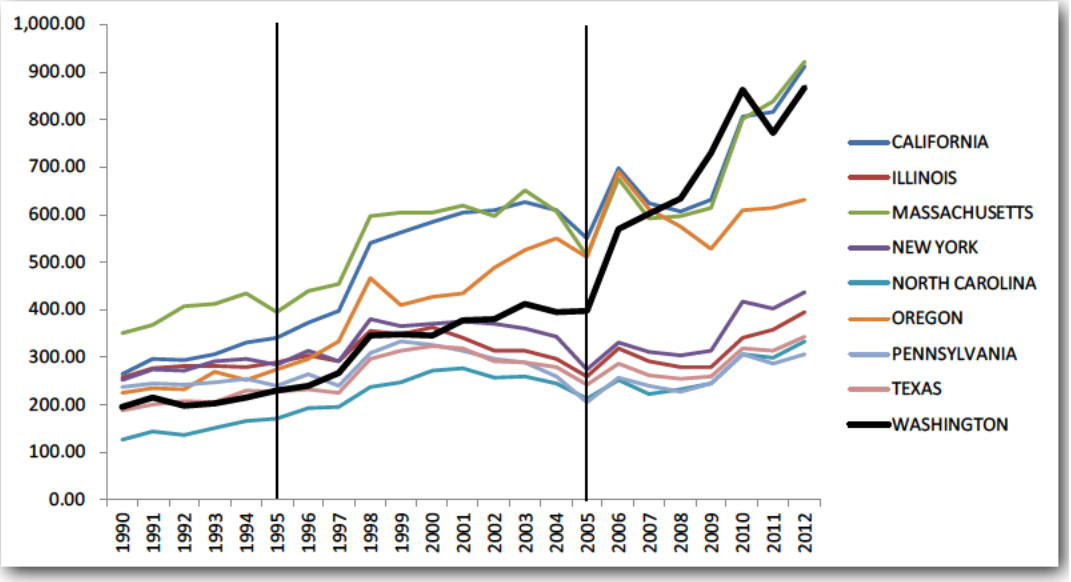
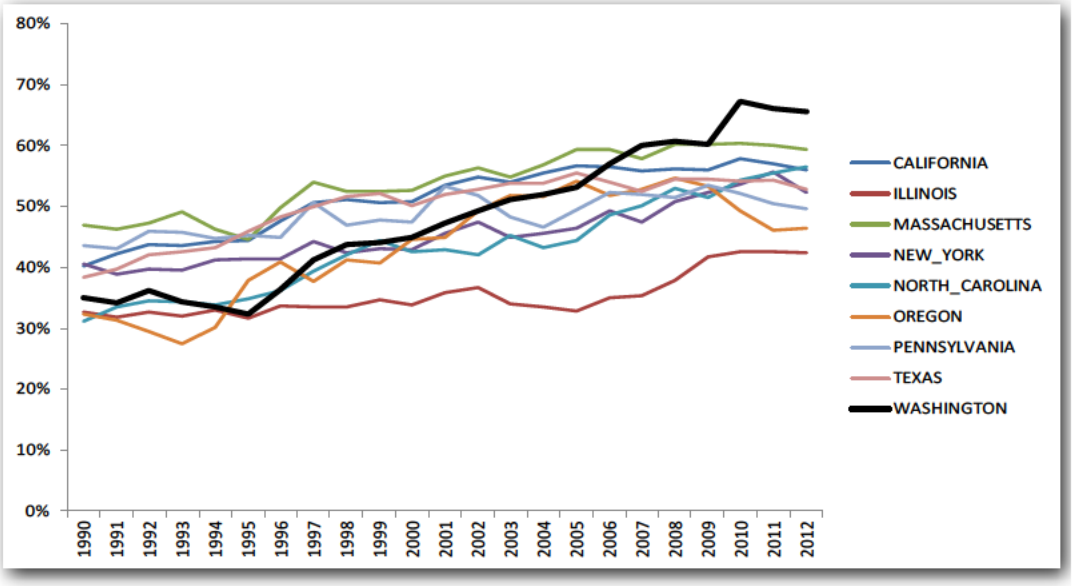


Chart 4.23
Percentage of Patents in High Tech Classifications for Selected States



Washington greatly increased the percentage of its patents in high tech incentive patent classifications since the high tech incentives became effective in 1995. Chart 4.23 shows the increase in the percentage of high tech patents for each of the selected states.

In 1995, 32 percent of Washington's patents occurred in high tech incentive classifications. By 2005, the percentage increased to 53 percent of Washington's patents occurring in high tech incentive classifications. By 2012, Washington's percentage of patents in high tech incentive classifications reached 66 percent.

Table 4.8
Patent Average Annual Growth
For Selected States
1990 to 2012

State	Average Annual Growth
CALIFORNIA	6.4%
ILLINOIS	2.4%
MASSACHUSETTS	4.6%
NEW YORK	2.8%
NORTH CAROLINA	5.8%
OREGON	5.9%
PENNSYLVANIA	1.4%
TEXAS	4.5%
WASHINGTON	**8.0%**

From 1990 to 2012 the average annual growth in the number of patents attributed to Washington residents grew annually by 8.0 percent. By comparison, California grew 6.4 percent and Oregon grew 5.9 percent.

The average annual growth from 1990 to 2012 for each selected state can be found in the table to the left.

Patent growth by high tech industry:
Much of the growth for Washington's patents occurred in the advanced computing industry and the electronic device industry. Charts 4.24 through 4.28 show the number of patents per one million people for each high tech incentives industry for the selected states.

Advanced Computing:
The number of patents for the advanced computing industry in Washington grew on average annually by 22 percent a year between 1995 and 2012.

The Washington advance computing industry averaged:

- 44 patents per year between 1993 and 1995, and
- 2,186 patents per year between 2010 and 2012.

Chart 4.24
Advanced Computing
Patents per One Million Capita in the Selected States
1995, 2005, 2012

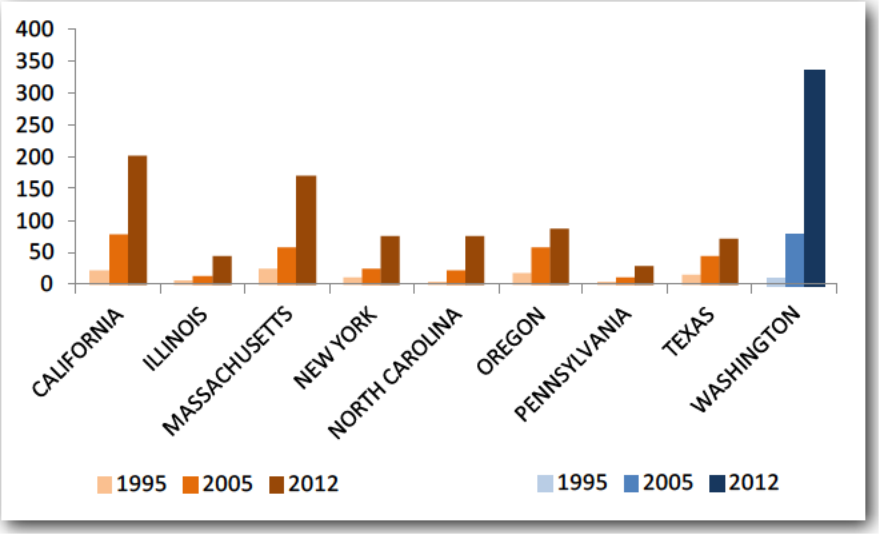
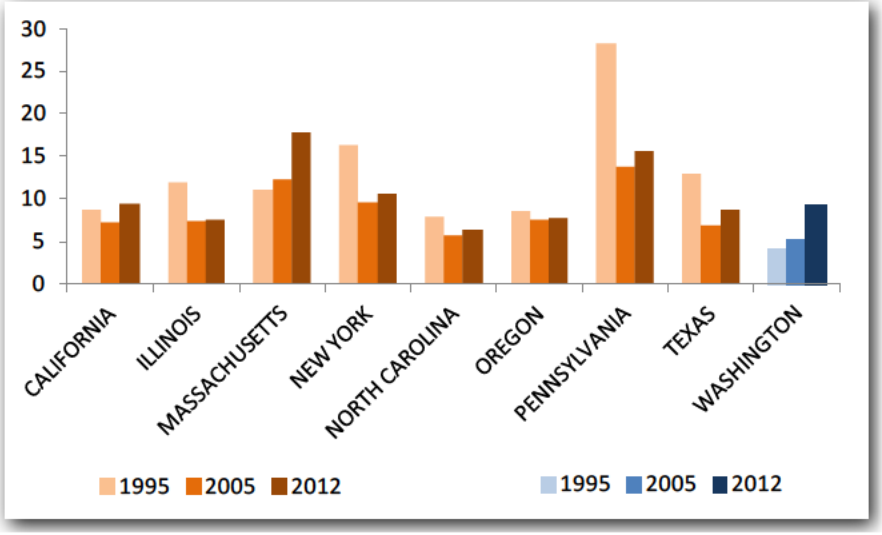


Chart 4.25
Advanced Materials
Patents per One Million Capita in the Selected States
1995, 2005, 2012



Advanced Materials:
The number of patents for the advanced materials industry in Washington grew on average annually by 6 percent between 1995 and 2012. The advanced materials industry averaged:

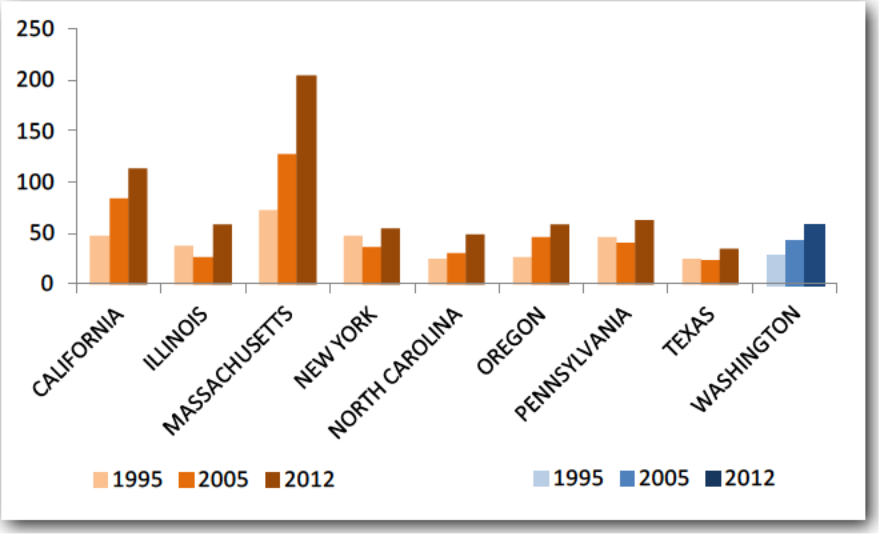
- 26 patents per year between 1993 and 1995, and
- 48 patents per year between 2010 and 2012.

Biotechnology:
The Washington biotechnology industry averaged:

- 144 patents per year between 1993 and 1995, and
- 422 patents per year between 2010 and 2012.

The number of patents for Washington's biotechnology industry grew on average annually by 5 percent between 1995 and 2012.

Chart 4.26
Biotechnology
Patents per One Million Capita in the Selected States
1995, 2005, 2012



Electronic Device Technology:

The number of patents in the electronic device technology industry grew on average annually by 14 percent between 1995 and 2012. The electronic device industry averaged:

- 59 patents per year between 1993 and 1995, and
- 860 patents per year between 2010 and 2012.

Chart 4.27
Electronic Device Technology
Patents per One Million Capita in the Selected States
1995, 2005, 2012

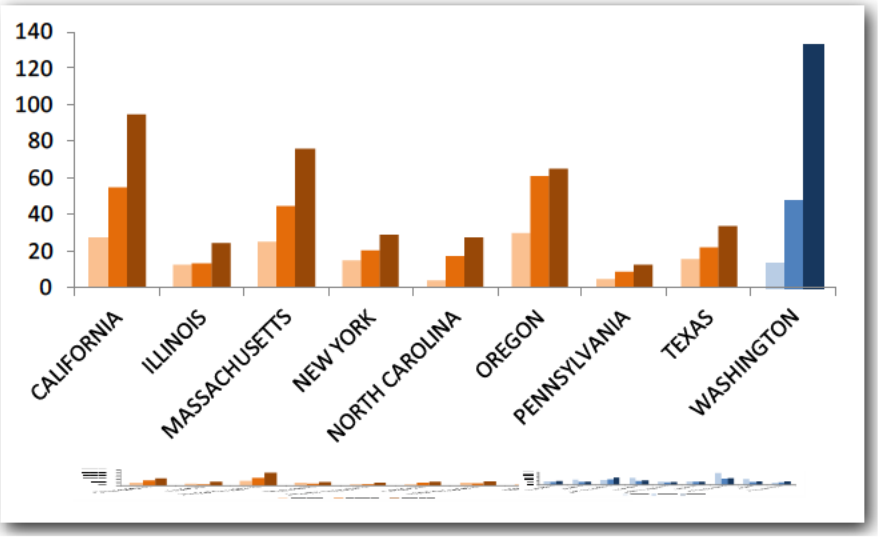
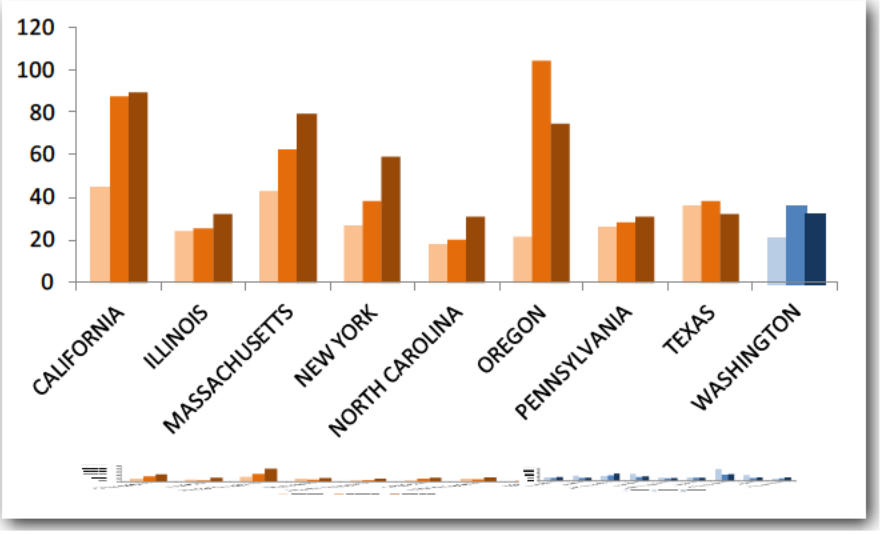


Chart 4.28
Environmental Technology
Patents per One Million Capita in the Selected States
1995, 2005, 2012



Environmental Technology:

In environmental technology, Washington averaged:

- 113 patents per year between 1993 and 1995, and
- 251 patents per year between 2010 and 2012.

The number of patents grew on average by 4 percent a year between 1995 and 2012 for the environmental technology industry in Washington.

High Tech Participants:

On the annual survey, high tech incentive participants report the number of patents, trademarks and copyrights they received in the last year. This report assumes high tech participants report all their patents including patents outside the high tech incentive classifications identified in the above patent analysis. In all these industries, except advanced computing, there was a significant drop in the number of patents in either 2007 or 2008.

Table 4.9 shows the average annual growth in the number of patents for each industry and the average annual growth for the high tech participants overall from 2008 through 2012.

Table 4.9
High Tech Participant
Average Annual Growth
2008 through 2012

Technology	Average Annual Growth
Advanced Computing	18%
Advanced Materials	20%
Biotechnology	2%
Electronic Device Technology	13%
Environmental Technology	16%
High Tech Participants	**17%**

The number of patents in advanced computing far surpasses the numbers in the other industries. Chart 4.29 shows the number of patents reported on the annual survey by advanced computing participants. Chart 4.30 shows the other 4 industries combined.

Chart 4.29
Advanced Computing
Number of Patents – as Reported of the Annual Survey

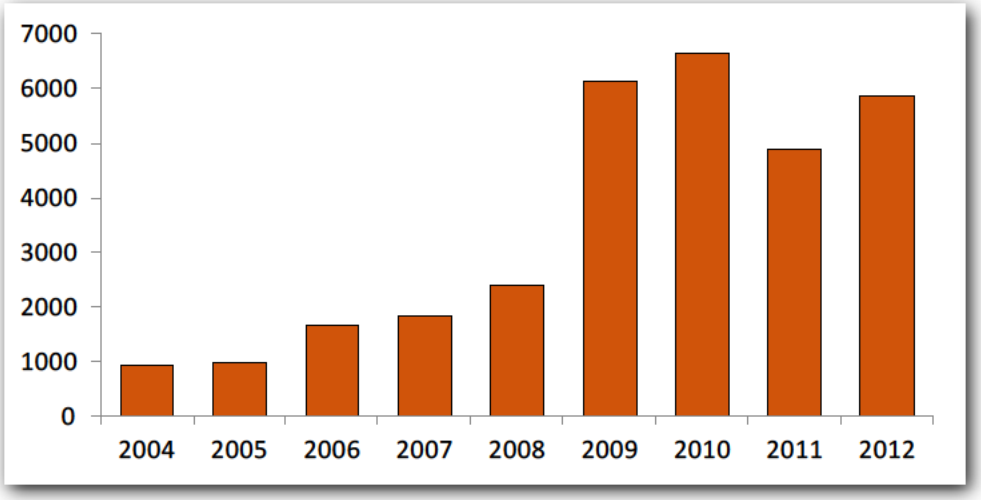
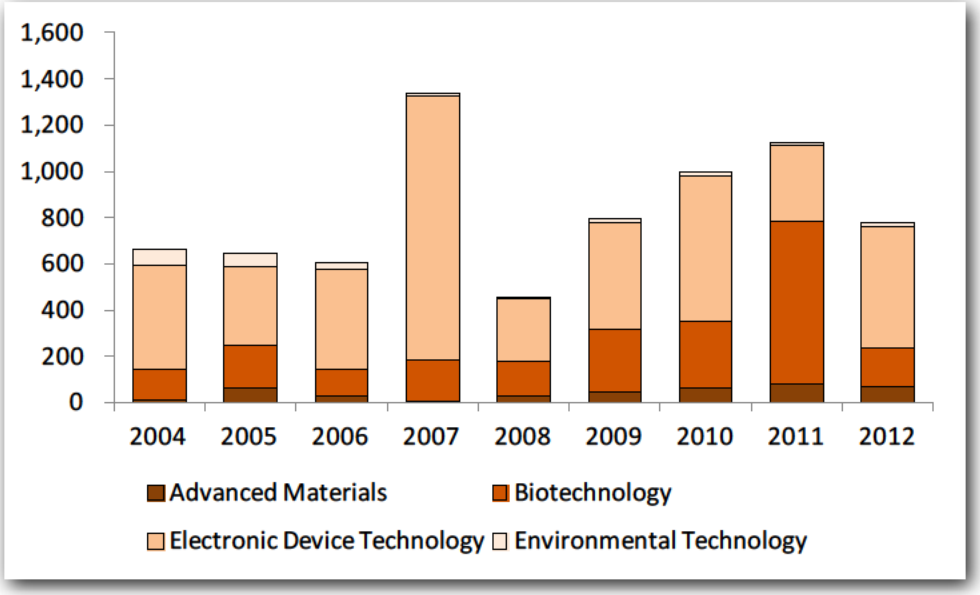
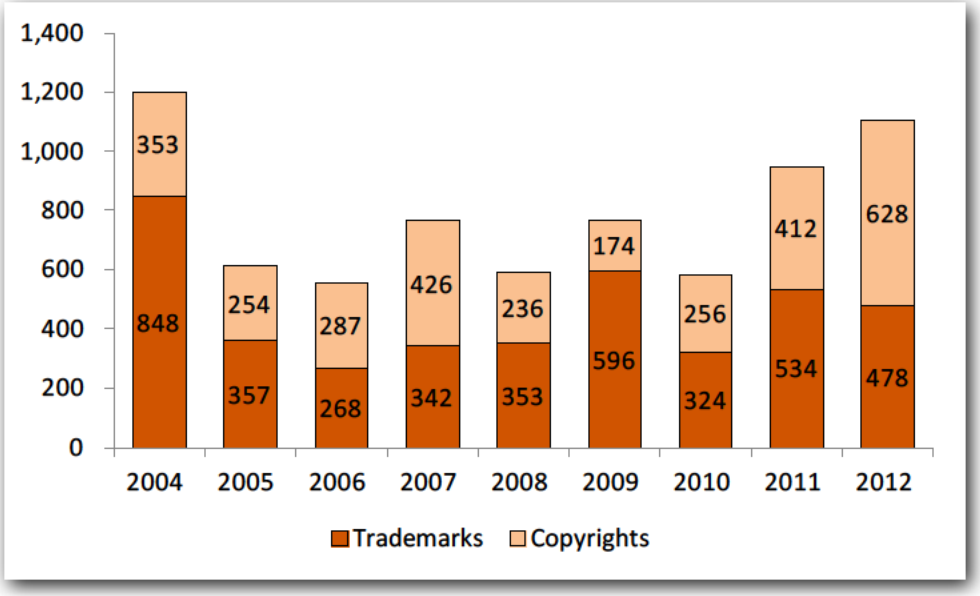


Chart 4.30
Advanced Materials, Electronic Devices, Biotechnology, and Environmental Technology
Number of Patents – as Reported on the Annual Survey



The number of reported trademarks and copyrights fluctuates similarly to the number of patents as can be seen in the chart below.

Chart 4.31
High Tech Participant - Trademarks and Copyrights
As Reported on the Annual Survey



Growth in Research and Development Investment

The Bureau of Economic Analysis (BEA) completed a comprehensive revision to the National Income and Product Accounts (NIPAs). Most importantly,

- The reference year was updated from 2005 to 2009, and
- Spending on research and development (R&D) changed from being expenditures to being investments.

This revision created the intellectual property products category which includes three subcategories of investment:

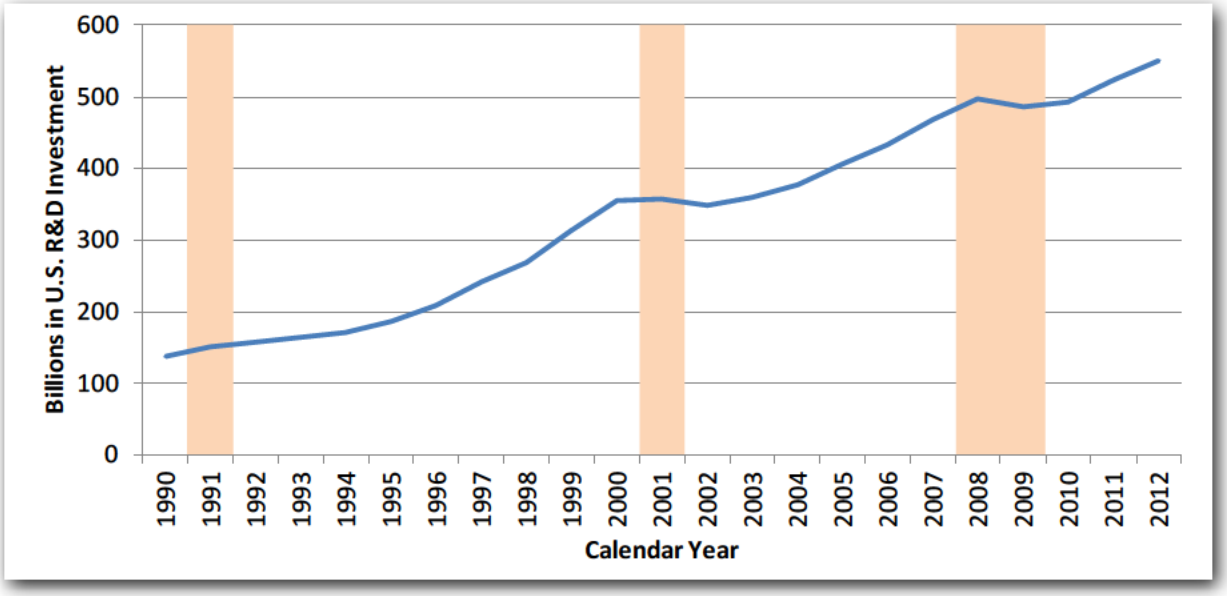
1. Research and Development,
2. Software, and
3. Entertainment, Literature and Artistic Originals.

The BEA data used in this section includes R&D investment for the total of the intellectual property product sub-categories of (1) R&D and (2) Software.

U.S. R&D investments:

R&D investment fluctuates greatly with the economy. In times of economic recessions, R&D investment growth either stays flat or declines. The chart below shows this by overlaying R&D investment with the last three recessions.

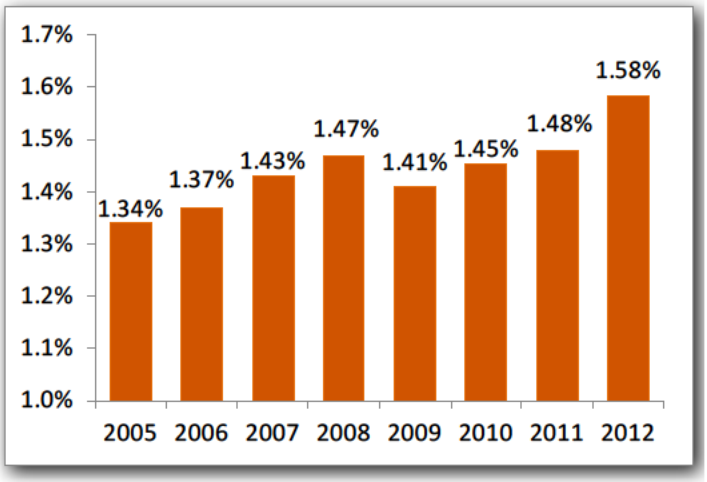
Chart 4.32
U.S. R&D Investments and U.S. Recessions



Washington high tech incentive participants followed the U.S. trend by decreasing R&D investments during the Great Recession.

Between 2008 and 2009 the high tech participants invested $600 million less in R&D, a 7.6 percent year over year decline and significantly more than the 2.1 percent decline in U.S. R&D Investment.

Chart 4.33
Washington High Tech Participants Share
U.S. R&D Investment



Since 2009 Washington's high tech participants R&D investment increased at a faster rate than for the U.S. In 2012 Washington's high tech incentive participants' R&D investment increased to 1.58 percent of the U.S. R&D investment. The chart above provides further information about the Washington participants' share of the U.S. R&D investment.

During the Great Recession, Washington's high tech participants' R&D investment declined for a single year. However, the high tech participants' use of the sales tax exemption for machinery and equipment (M&E) declined for two years. Since the declines, the use of the M&E sales tax exemption by Washington's high tech participants grew over six times faster than the growth in Washington's high tech taxpayers' R&D investment. Chart 4.34 shows the slow, steady growth of high tech taxpayers' R&D investment compared to the faster growth in the use of the M&E sales tax exemption as shown in Chart 4.35.

Chart 4.34
Washington High Tech Taxpayers
R&D Investment

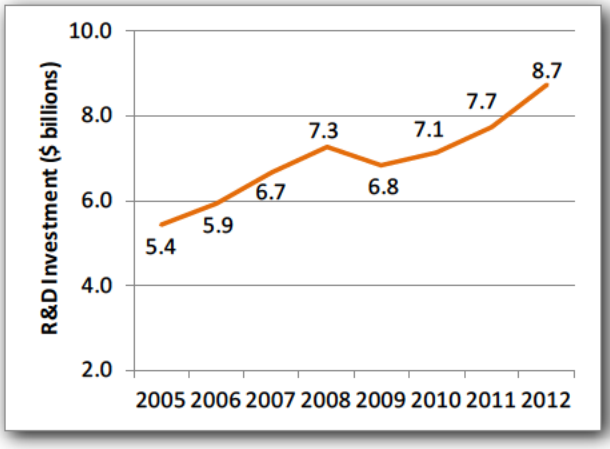
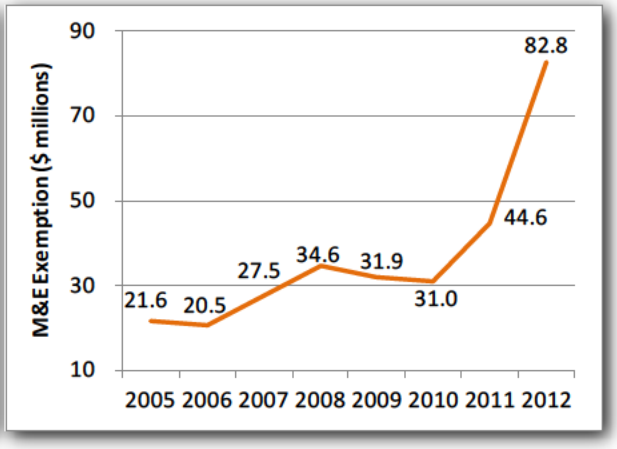


Chart 4.35
Washington High Tech Taxpayers
M&E Sales Tax Exemption



The table below contains detailed information about the Washington high tech participants' R&D investment and their use of the M&E sales tax exemption.

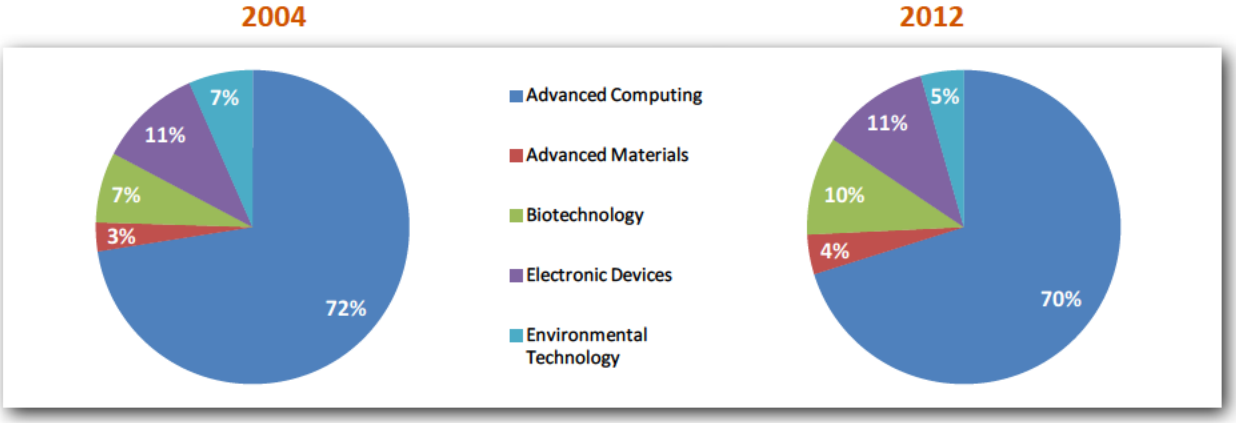
Table 4.10
Washington R&D Investment and M&E Sales Tax Exemption
As Reported on the Annual Survey

Year	R&D Investment	Participant Count	M&E Sales Tax Exemption
2004	6,799,953,526	621	2,374,660
2005	5,440,161,788	554	21,620,930
2006	5,930,058,133	522	20,544,731
2007	6,677,917,782	542	27,477,817
2008	7,271,298,036	519	34,582,587
2009	6,834,496,393	523	31,949,956
2010	7,141,803,312	572	30,975,773
2011	7,735,255,264	605	44,576,691
2012	8,718,009,475	623	82,759,151

Note: Question about M&E was voluntary in 2004, and became a required question from 2005 forward.

While some overlap occurs between industries, the percentage of R&D investment by industry shows only a little change from 2004 to 2012. Comparing the 2004 percentages in the pie charts below to the 2012 percentages, you can see no change in the percentage of R&D investment for the electronic device technology industry in Washington. The advanced computing and environmental technology industries percentage decreased slightly. And finally, biotechnology and advanced materials increased slightly between 2004 and 2012.

Chart 4.35
Washington R&D Investment by High Tech Industry
As Reported on the Annual Survey



Movement of Taxpayers or Consolidation of Taxpayer's Operation into the State

One of the goals of these programs is to bring, keep, or expand the participant's operations in Washington. To evaluate the movement or consolidation of employment there are several survey questions related to the movement or consolidation of the participant's operations.

Table 4.11 shows the number of participants answering the survey questions about activities that:

- Moved activities into Washington,
- Expanded existing activities in Washington,
- Created new activities in Washington, or
- Moved activities out of Washington.

Table 4.11
Movement or Consolidation of Activity As Reported on Annual Survey

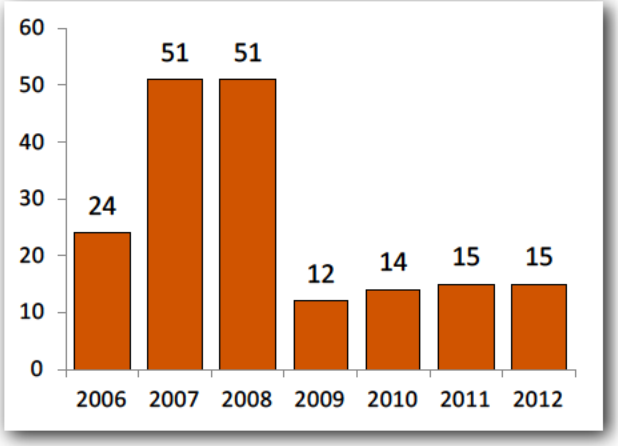
Year	Moved Activities into Washington	Expanded Existing Activities in Washington	Created New Activities in Washington	Moved Activities out of Washington
2004	12	35	6	9
2005	6	38	6	14
2006	24	70	17	12
2007	51	227	51	10
2008	51	231	43	25
2009	14	230	47	18
2010	14	293	34	15
2011	16	300	32	28
2012	15	328	37	16

Number of taxpayers that moved activities into Washington:

Between 2006 and 2007 a sharp increase in the number of taxpayers that moved activities into Washington occurred, making the decline between 2008 and 2009 even more dramatic. The Great Recession likely contributed to less movement of activities beginning in 2009.

Since 2009 slow growth occurred in the number of high tech participants moving activities to Washington. The number of participants moving activities into Washington is still more than 70 percent below the number from 2008 and about 38 percent below the number that moved activities into Washington in 2006.

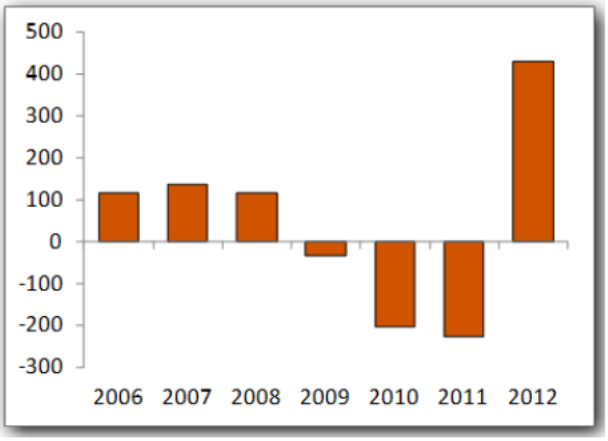
Chart 4.36
High Tech Participants Moving Activities Into Washington



Net movement of employees into and out of Washington:

The effect of the economic turmoil of the Great Recession shows in the net movement of employees into and out of Washington by high tech incentive participants as seen in Chart 4.37.

Chart 4.37
Net Movement of Employees by High Tech Taxpayers



- Through 2008 participants moved more employees into Washington than moved out.
- During the economic recovery period more employees were moved out of Washington than in, as shown by the negative net movement in 2009, 2010, and 2011.
- In 2012, Washington high tech participants moved significantly more employees into Washington than out for the first time in 4 years.

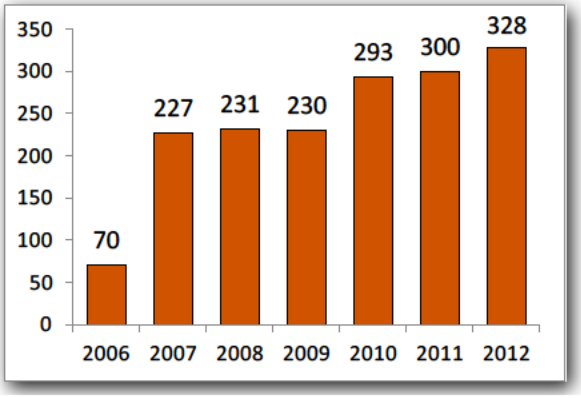
Type of employees moved out of Washington:

The types of employees moving out of Washington changed since the last study in 2009.

Lost employment in manufacturing and distribution jobs was 49 percent of total employment lost for the four years prior to the recession (2005 to 2008). This dropped to 10 percent of the total employment lost between 2009 and 2012.

By comparison, lost employment for research jobs was 20 percent between 2005 and 2008 and this increased to 50 percent between 2009 and 2012.

Chart 4.38
Expanded Existing Activities



Participants expanding existing activities in Washington:

The Great Recession slowed those high tech participants' expansion of existing activities in Washington.

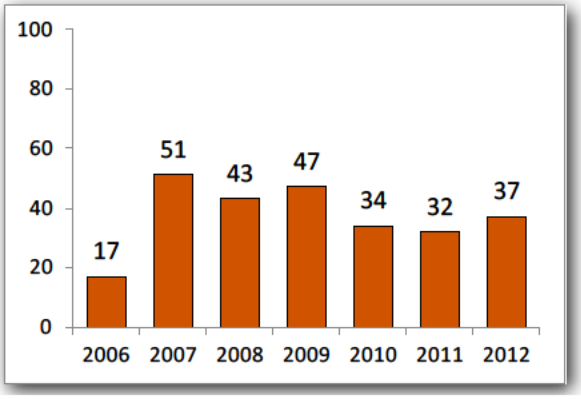
The number of participants expanding activities in Washington picked up after the Great Recession ended and increased to a high of 328 in 2012.

Participants creating new activities in Washington:

Participants that created a new activity in Washington increased between 2008 and 2009 and then dropped for two years.

In 2012, the increase in those that created new activities still keeps the number of participants creating a new activity lower than prior to the Great Recession.

Chart 4.39
Created New Activities



Chapter Five: Similar Incentives in Other States

Overview

The Legislature identified several areas of interest for analysis of the high tech incentives. Chapter 4 provided insights about:

- Job creation,
- Jobs created for Washington residents,
- Company growth,
- The introduction of new products,
- The diversification of the state's economy,
- Growth in research & development (R&D) investment,
- The movement of taxpayers or the consolidation of taxpayers into the state.

The law also directs the Department to analyze other areas of interest. This chapter compares Washington's competitiveness to eight other states with and without the high tech incentives for five hypothetical taxpayers. The two incentives will have an effect on diversification and growth if they serve to make Washington more competitive.

Analysis shows:
Washington compares well to the eight competitor states in terms of total state and local taxes paid by high tech taxpayers.
The high tech B&O tax credit has a modest effect on Washington's competitive position improving two of five taxpayer types modeled, when all major business taxes are considered.
The sales and use tax deferral for new R&D facilities improved the competitive position of Washington taxpayers engaged in high tech R&D for three of the five taxpayer types, when all major business taxes are considered.
Washington's high tech incentive programs provide more tax relief on average than the other states' incentives considered here.
The sales and use tax deferral for new R&D facilities provides greater tax savings than the high tech credit when savings are stated as a percent of ten-year total tax burden.

Chapter Five: Similar Incentives in Other States

Methodology

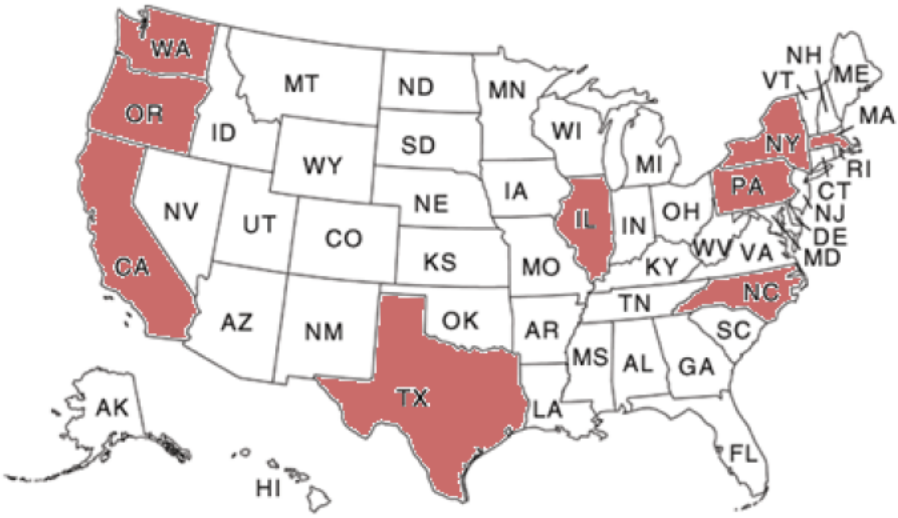
Hypothetical taxpayer analyses are used to measure the relative impact of the high tech incentives on the competitive position of Washington taxpayers. The incentive programs are modeled as components of the major state and local business taxes in the selected states in order to address the incremental impact of the programs on Washington's overall tax competitiveness.

This is point in time analysis. Research was completed in May, 2013 for tax information for Washington and the eight competitor states. Tax legislation that passed after that date is not included in the analysis.

Competitor States and Their Tax Systems

Tax comparisons were modeled for the nine states listed below:

- Washington
- California
- Illinois
- Massachusetts
- New York
- North Carolina
- Oregon
- Pennsylvania
- Texas



<u>Criteria used to select states:</u>

- The number of approved high tech patents over a 5-year period
- Potential expansion locations for WA employers
- Home state of firms competing with WA employers
- Independent reports as to competitive high tech locations in the United States

<u>Major state and local business taxes included:</u>

- Washington B&O tax
- Corporate income and franchise taxes in other states
- Sales and use taxes paid by business
- Property taxes paid on real and personal business property

Hypothetical Taxpayer Profiles

The study uses detailed taxpayer profiles containing characteristics such as sales receipts, corporate income and profits, taxable purchases, and property holdings. Profiles were constructed with data from financial filings, the Internal Revenue Service (IRS), state tax return information, industry experts, and other sources.

The results of interstate tax comparisons can be affected by a number of factors, including the relative cost of inputs, payroll taxes, personal income taxes, apportionment, and state exports. Because analysis resources are scarce, comparison studies limit consideration only to those factors having a direct impact on the issue(s) of concern. The most widely referenced tax comparisons are static, typically a simple ranking of total taxes paid in different jurisdictions. Factors excluded from the analysis would likely have an effect on the static, total tax burden.

This analysis is not simply a static, total ranking. The comparisons in this study are not concerned with the total tax burden at a point in time, or even with the composition of that static burden. Instead, a marginal analysis of each firm is completed, both with R&D incentives and without. The study measures the *change* in tax burden when these programs are used relative to when they are not available. Because the R&D spending and the facility must be entirely within the modeled states, we have no reason to expect that the marginal change in rankings will be significantly different for the excluded factors.

<u>There are five taxpayer types analyzed in the study:</u>

- A small aircraft and parts manufacturer
- A manufacturer of instruments for navigation, measuring, and related uses
- A semiconductor or other electronic component manufacturer
- A biotechnology/pharmaceutical integrated manufacturer and wholesaler
- A small software originator

Data on sales, R&D spending, and investment in new R&D facilities are presented in Table 5.1 on the following page. These data were used for the analysis of both the high tech credit for R&D spending and for the high tech deferral/exemption. More detailed taxpayer data is found in Appendix C.

Table 5.1
Hypothetical Taxpayer Characteristics
Pertaining to the R&D Credit and R&D Facilities Sales Tax Deferral

Taxpayer	Annual Sales YR5 (Millions)	10 Yr. NPV Sales* (Millions)	R&D Spending YR5 (Percent of Sales)	Investment in R&D Facility YR2 (Millions)
Small aircraft and parts	$55	$422	9.7%	$4.70
Instruments and related	$30	$241	9.6%	$0.50
Semiconductor and related	$250	$2,046	9.6%	$20.90
Biotechnology/pharmaceutical	$100	$833	12.7%	$10.97
Software originator	$15	$121	9.7%	$1.00

*NPR = Net Present Value. The interest rate used in the net present value calculation is 3.72 percent, the rate on ten-year AA corporate bonds as of June 25, 2013.

Annual sales:
The taxpayers in the analyses are typical Washington taxpayers, not the giants of their respective industries. The software originator is the smallest taxpayer with annual sales of $15 million. The small aircraft manufacturer is a supplier rather than a seller of aircraft, and has $55 million in annual sales. The largest taxpayer is the manufacturer of semiconductor and related electronic devices with annual sales of $250 million, which is a modest-sized facility in this industry.

R&D Spending as a percent of sales:
To determine R&D spending by the hypothetical taxpayers, National Science Foundation (NSF) data were used. NSF data provided costs for industrial R&D by industry North American Industry Classification System (NAICS) and company size. R&D spending for the small aircraft, instruments, semiconductor, and software taxpayers is approximately 9 to 10 percent of sales revenues. The integrated biotech/pharmaceutical taxpayer R&D spending is 12.7 percent.

Investment in R&D facility:
The assumed investment in new R&D facilities ranges from $0.5 million for the instruments taxpayer to $20.9 million for semiconductor taxpayer.

Tax savings:
Total tax burden is estimated for each of the taxpayers in each of the nine different states. Taxes are ranked by the total ten-year net present value of the estimated tax payments. Tax savings due to the incentives can be determined by taking the difference between total tax burden with and without the incentives. To study the effect of taxes alone, labor and other business costs, federal taxes, regulatory structure, and similar factors are assumed to be the same for all of the states.

Tax due:

Any particular taxpayer's actual tax payments will in reality vary considerably due to factors such as ownership form, corporate structure, and apportionment methods used. To hold these constant, the taxpayers are modeled as independent entities or as parts of larger corporations that are considered on a stand-alone basis.

Additional assumptions:

- Taxpayers sell all products in-state.
- Taxpayers take full advantage of the available credits and exemptions, such as Washington's sales and use tax exemption for manufacturers' machinery and equipment. For example, North Carolina, Texas, Illinois, and New York provide general sales tax incentives that are similar to Washington's M&E sales tax exemption. California, Massachusetts, and Pennsylvania did not have these types of general sales tax incentives at the time of the study.
- All taxpayers are located in areas where high tech businesses typically locate; therefore, taxpayers are not modeled as taking advantage of programs designed for specific distressed areas, enterprise zones, or rural areas.
- All taxpayers are profitable.
- Incentive programs in which participation is at the discretion of local authorities are not modeled. The details for the states' programs, the location of the taxpayers, taxes, and assumptions are found in Appendix C.

Nine State Comparisons

The hypothetical taxpayer analysis has two parts which answer two separate questions.

- What is the change in Washington's relative tax burden with the high tech incentives?
- Which type of high tech incentives offer the greatest amount of tax relief?

Separate Analyses for the Credit and Deferral:

Each question is further split into two separate analyses; this allows the high tech credit and the high tech deferral program to each be evaluated on their own. Washington's high tech credit for R&D spending is compared with R&D credits granted by other states against their corporate income and franchise taxes. However, the high tech tax deferral for R&D facilities is found only in Washington. Washington's high tech deferral more closely compares to other states' incentives targeting investment in new R&D facilities in general.

CHANGE IN WASHINGTON'S RELATIVE TAX BURDEN CAUSED BY THE HIGH TECH INCENTIVES

Washington State's high tech incentives improve the competitive position of Washington high tech taxpayers. In this part of the analysis the hypothetical taxpayers are taxed under current law for each of the eight comparative states and Washington State. The ten-year net present value tax burden is compared and the states are ranked according to their total tax burdens. Washington's ranking is compared both with and without its tax incentives.

Effects of the High Tech B&O Tax Credit for R&D Spending on Tax Rankings

Washington ranks sixth or better out of the nine states both with and without the high tech credit program, where 1st is the lowest tax burden and 9th is the highest. When the high tech credit is included in the analysis, the Washington rank of the small aircraft improves from 6th to 5th. For instrument and equipment Washington improves from 2nd to 1st. Results for the other taxpayer types rank Washington the same both with and without the high tech credit: 5th for semiconductor and related, 1st for integrated biotech and 3rd for small software originators.

Table 5.2 summarizes Washington's ranking for the hypothetical taxpayers in the five industries.

Table 5.2
Washington's Total Tax Rank
WA with and without the High Tech Credit; Other States are Current Law

Washington Firms	WA With Credit	WA Without Credit
Small aircraft and parts	5	6
Instruments and equipment	1	2
Semiconductor and related	5	5
Biotech/pharmaceutical	1	1
Small software originators	3	3

The first two columns in Table 5.3 show Washington's relative tax burden with the high tech credit for R&D included in the analysis. The total tax burden is the ten-year net present value of sales and use taxes, property taxes, and corporate income, franchise, and/or B&O taxes paid by the taxpayers. The second two columns show Washington's total tax burden in the absence of Washington's high tech credit compared to the current-law tax burden in the other six states (e.g. with other states' 2012 R&D credit programs).

Table 5.3

Washington with and without the High Tech Credit; Other States are Current Law

Net Present Value: 10 Years of Expected Taxes in $Millions/Rank: 1=lowest tax burden, 9=highest tax burden

Firm	State	With WA B&O Credit for R&D $ Millions	With WA B&O Credit for R&D Rank	No WA B&O Credit for R&D $ Millions	No WA B&O Credit for R&D Rank
Small Aircraft and Parts	Oregon	3.15	1	3.15	1
	North Carolina	3.62	2	3.62	2
	Massachusetts	3.98	3	3.98	3
	Illinois	4.02	4	4.02	4
	Washington	**4.29**	**5**	**4.89**	**6**
	California	4.68	6	4.68	5
	New York	5.90	7	5.90	7
	Pennsylvania	6.54	8	6.54	8
	Texas	7.40	9	7.40	9
Instruments and Equipment	**Washington**	**3.62**	**1**	**3.96**	**2**
	North Carolina	3.76	2	3.76	1
	Oregon	4.11	3	4.11	3
	Illinois	4.53	4	4.53	4
	Massachusetts	7.14	5	7.14	5
	New York	7.22	6	7.22	6
	California	7.56	7	7.56	7
	Texas	9.03	8	9.03	8
	Pennsylvania	10.24	9	10.24	9
Semiconductor and Related	North Carolina	15.16	1	15.16	1
	Oregon	17.38	2	17.38	2
	California	19.53	3	19.53	3
	Illinois	20.21	4	20.21	4
	Washington	**21.20**	**5**	**23.86**	**5**
	New York	31.11	6	31.11	6
	Pennsylvania	33.17	7	33.17	7
	Texas	39.22	5	39.22	8
	Massachusetts	39.54	9	39.54	9
Integrated Biotech Pharmaceutical	**Washington**	**9.40**	**1**	**10.87**	**1**
	Oregon	11.93	2	11.93	2
	North Carolina	12.77	3	12.77	3
	Illinois	15.11	4	15.11	4
	California	17.51	5	17.51	5
	Texas	17.85	6	17.85	6
	New York	18.65	7	18.65	7
	Pennsylvania	24.44	8	24.44	8
	Massachusetts	28.72	9	28.72	9
Small Software Originator	Oregon	1.37	1	1.37	1
	North Carolina	1.44	2	1.44	2
	Washington	**1.98**	**3**	**2.14**	**3**
	Illinois	2.29	4	2.29	4
	Massachusetts	2.32	5	2.32	5
	California	2.41	6	2.41	6
	Texas	2.70	7	2.70	7
	New York	3.31	8	3.31	8
	Pennsylvania	3.71	9	3.71	9

Effect of the High Tech Sales and Use Tax Deferral on Tax Rankings

The other states have no tax incentive programs directly comparable to Washington's sales and use tax deferral/exemption for new, expanded, or renovated R&D facilities. The Washington deferral was instead compared to any statewide incentive program in the other states that would apply to new or expanded facilities in the five industries modeled. The tax regimes of Washington and the other states were applied to the initial investment in a new R&D facility and ten years of subsequent operations.

The tax rankings for Washington's high tech deferral were relatively similar to the rankings for the high tech credit. The deferral program does improve the rankings for three of the five taxpayer types. With the use of the deferral, small aircraft moves from 5th to 4th. Instruments and equipment result in the most improvement by jumping from 4th to 1st. Integrated biotech moves from 2nd to 1st. The semiconductor and related taxpayer and the small software originators remain constant at 4th and 3rd.

Table 5.4 below summarizes Washington's ranking for the hypothetical taxpayers investing in new, expanded, or renovated R&D facilities in the five industries modeled.

Table 5.4
Washington's Total Tax Rank
WA with and without the High Tech Deferral for R&D Facilities
(Other states have general incentives for new facilities)

Firm	WA With Sales Tax Deferral	WA Without Sales Tax Deferral
Small aircraft and parts	4	5
Instruments and equipment	1	4
Semiconductor and related	4	4
Biotech/pharmaceutical	1	2
Small software originators	3	3

The first two columns of Table 5.5 show Washington's relative tax burden with its high tech deferral modeled. The second two columns show Washington's ten-year net present value total tax burden with the high tech deferral excluded from the analysis. The other states are modeled with their current law programs effective for Calendar Year 2012.

The analysis of the deferral, and similar programs, uses the ten year net present values just like the analysis for R&D credits does. However, the ten measurement years in the two analyses are not the same set of years. The deferral scenarios model a new facility, so scenarios start with "year 1." The R&D credit scenarios model an up-and-running concern so start with "year 3." For this reason the dollar values in the first data columns of tables 5.3 and 5.5 do not match with the incentives turned "on."

Table 5.5

Washington with and without the High Tech Deferral; Other States, Current Law

Net Present Value: 10 Years of Expected Taxes in $Millions/Rank: 1=lowest tax burden, 9=highest tax burden

Firm	State	With WA Sales Tax Deferral		No WA Sales Tax Deferral	
		$ Millions	Rank	$ Millions	Rank
Small Aircraft and Parts	Oregon	2.15	1	2.15	1
	Illinois	2.79	2	2.79	2
	North Carolina	2.82	3	2.82	3
	Washington	**3.16**	**4**	**4.17**	**5**
	Massachusetts	3.66	5	3.66	4
	California	4.39	6	4.39	6
	New York	4.63	7	4.63	7
	Texas	5.70	8	5.70	8
	Pennsylvania	5.80	9	5.80	9
Instruments and Equipment	**Washington**	**2.68**	**1**	**3.58**	**4**
	North Carolina	2.97	2	2.97	1
	Oregon	2.98	3	2.98	2
	Illinois	3.41	4	3.41	3
	New York	5.33	5	5.33	5
	Massachusetts	6.42	6	6.42	6
	Texas	6.60	7	6.60	7
	California	7.17	8	7.17	8
	Pennsylvania	9.04	9	9.04	9
Semiconductor and Related	Oregon	12.19	1	12.19	1
	North Carolina	12.76	2	12.76	2
	Illinois	15.74	3	15.74	3
	Washington	**16.08**	**4**	**20.97**	**4**
	New York	23.65	5	23.65	5
	California	25.56	6	25.56	6
	Texas	30.84	7	30.84	7
	Pennsylvania	34.08	8	34.08	8
	Massachusetts	34.24	9	34.24	9
Integrated Biotech Pharmaceutical	**Washington**	**6.83**	**1**	**8.59**	**2**
	Oregon	7.75	2	7.75	1
	North Carolina	8.68	3	8.68	3
	Illinois	9.91	4	9.91	4
	New York	12.82	5	12.82	5
	Texas	13.23	6	13.23	6
	California	14.60	7	14.60	7
	Pennsylvania	19.23	8	19.23	8
	Massachusetts	21.50	9	21.50	9
Small Software Originator	Oregon	0.74	1	0.74	1
	North Carolina	0.83	2	0.83	2
	Washington	**1.24**	**3**	**1.55**	**3**
	Illinois	1.61	4	1.61	4
	California	1.78	5	1.78	5
	Massachusetts	1.82	6	1.82	6
	Texas	1.97	7	1.97	7
	New York	2.26	8	2.26	8
	Pennsylvania	2.59	9	2.59	9

COMPARISON OF HIGH TECH INCENTIVE PROGRAMS IN NINE STATES

Next, the hypothetical taxpayer analysis compares high tech incentive programs in each of the nine states to determine which high tech incentive programs offer the greatest tax relief. Detailed information about each state's incentive programs is found in Appendix C.

Washington High Tech B&O Tax Credit for R&D Expenses and Similar Programs in Other States

R&D credit programs in some of the selected states are similar in that a percentage of qualified R&D spending can be taken as a credit against the B&O tax, corporate income tax, or franchise taxes levied on businesses. The programs differ in the type of activity qualifying, the ability to carry credits forward, the allowable credit limit, and the amount of the credit. One major difference is that some states grant credits on incremental R&D spending over an initial base year's R&D spending, often following the complex federal procedure; Oregon and California use these types of programs. North Carolina's R&D credit is similar to Washington's in that credits are calculated as a percentage of qualified spending, though both states' credit rates are lower than the rates found in a federal style program. The Washington and North Carolina style of R&D credit makes it easier for businesses. The R&D credits in Texas have expired and there are no comparable R&D credits available in New York.

Tax Savings from Programs Similar to the High Tech Credit

Table 5.6 presents the tax savings in all nine states for tax incentives similar to the high tech credit. The savings are presented both in dollar terms and as a percentage of the total taxes (both are the ten-year net present value). A value of "0.00" denotes no change in tax payments.

Washington's rank is 3rd in the small aircraft, semiconductor, and integrated biotech taxpayers. Washington was 2nd in the small software taxpayer and 1st in the instruments and equipment taxpayer.

Washington's credit is taken for the full amount of R&D expenditures over the threshold, not just the addition over an initial base. This tends to compensate for the higher credit rates allowed in some of the other states.

Another difference is the Washington high tech credit's relative simplicity, since there is no need to determine a base level of research spending. R&D credit programs in those states that piggyback on the federal program are known for their difficulty of use. There is anecdotal evidence that it is extremely difficult for small taxpayers in many states to qualify for R&D credit programs.

Table 5.6

Washington's High Tech Credit Compared with R&D Credits in Other States

Net Present Value: 10 Years of Expected Taxes in $Millions/Rank: 1=lowest tax relief, 9=highest tax relief

Firm	State	Tax Savings $ Millions	Savings Rank	Savings as a Percent of Total Tax Burden	Savings Rank
Small Aircraft and Parts	Massachusetts	(2.36)	1	59.4%	1
	California	(0.81)	2	17.2%	2
	Washington	**(0.60)**	**3**	**13.9%**	**3**
	Illinois	(0.53)	4	13.3%	4
	North Carolina	(0.39)	5	10.7%	5
	Oregon	(0.34)	6	10.7%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Instruments and Equipment	**Washington**	**(0.31)**	**1**	**8.7%**	**1**
	North Carolina	(0.25)	2	6.7%	2
	Illinois	(0.21)	3	4.6%	3
	California	(0.13)	4	1.7%	4
	Oregon	(0.13)	5	3.1%	5
	Texas	0.00	6	0.0%	6
	Massachusetts	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Semiconductor and Related Devices	Massachusetts	(10.18)	1	25.7%	1
	California	(2.93)	2	15.0%	2
	Washington	**(2.66)**	**3**	**12.6%**	**3**
	North Carolina	(1.87)	4	12.3%	4
	Illinois	(1.86)	5	9.2%	5
	Oregon	(0.55)	6	3.1%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Integrated Biotech Pharmaceutical	Massachusetts	(5.33)	1	18.6%	1
	California	(2.11)	2	12.0%	3
	Washington	**(1.47)**	**3**	**15.7%**	**2**
	Oregon	(1.18)	4	9.9%	4
	Illinois	(1.12)	5	7.4%	5
	North Carolina	(0.14)	6	1.1%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Small Software Originator	California	(0.26)	1	10.7%	1
	Washington	**(0.16)**	**2**	**8.0%**	**2**
	Illinois	(0.16)	3	6.8%	3
	North Carolina	(0.14)	4	9.7%	4
	Oregon	(0.10)	5	7.1%	5
	Texas	0.00	6	0.0%	6
	Massachusetts	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9

Washington Sales and Use Tax Deferral for New R&D Facilities and General Incentives for New R&D Facilities in Other States

The high tech deferral/exemption is not taken on a continuing basis like the R&D credits, but only when a taxpayer invests in a new or expanded R&D facility or acquires eligible equipment. Washington's high tech deferral/exemption is unique among the states in the study, but the modeling effort had to assume that taxpayers governed by other states' laws would take advantage of all incentives for new investment in general. New investment incentives in other states are included if they are generally available when new facilities are brought on line or when facilities are expanded.

Other exemptions and tax treatments are applied in Washington and all states whether the facility is new or existing; these include machinery and equipment exemptions, inventory exemptions, special property tax treatment, and others.

High tech R&D taxpayers are assumed to locate in areas that attract similar investment; they are not placed in distressed areas, enterprise zones, or in other areas targeted for special relief. It is also assumed that all taxpayer types will meet the criteria necessary to convert Washington's and other states' deferrals into exemptions.

Tax Savings from Programs Similar to the High Tech Tax Deferral

Table 5.7 shows the tax savings for Washington's high tech deferral and similar tax incentives in the other eight states. Tax savings are presented both in terms of (ten-year net present value) total taxes and as a percentage of (ten-year net present value) total taxes on the new, renovated, or expanded R&D facility.

The Washington high tech deferral/exemption for new R&D facilities provides greater tax savings than found in most of the other states modeled. For small software taxpayers Washington ranked 1st. For all other taxpayers Washington ranked 2nd to Massachusetts. When comparing savings as a percent of total tax burden, Washington ranks 1st across all taxpayers.

One of the primary reasons for these rankings is that California, Oregon, and Texas have incentives that are at the discretion of local authorities. Their current investment incentives are: (1) narrowly targeted to enterprise zones or other special areas, (2) require applications that may be rejected by local authorities, or (3) the programs result in negotiated taxes.

This analysis places high tech taxpayers in broadly defined, major high tech centers where new high tech taxpayers tend to locate, typically not distressed areas.

Table 5.7

WA High Tech Deferral Compared to Other States' Incentives for R&D Facilities

Net Present Value: 10 Years of Expected Taxes in $Millions/Rank: 1=lowest tax relief, 9=highest tax relief

Firm	State	Tax Savings $Millions	Savings Rank	Savings as a Percent of total tax burden	Savings Rank
Small Aircraft and Parts	Massachusetts	(1.07)	1	29.2%	2
	Washington	**(1.02)**	**2**	**32.2%**	**1**
	Illinois	(0.38)	3	13.6%	3
	North Carolina	0.00	4	0.0%	4
	California	0.00	5	0.0%	5
	Oregon	0.00	6	0.0%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Instruments and Equipment	Massachusetts	(0.97)	1	15.1%	2
	Washington	**(0.90)**	**2**	**33.6%**	**1**
	Illinois	(0.22)	3	6.3%	3
	North Carolina	0.00	4	0.0%	4
	California	0.00	5	0.0%	5
	Oregon	0.00	6	0.0%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Semiconductor and Related Devices	Massachusetts	(5.55)	1	16.2%	2
	Washington	**(4.89)**	**2**	**30.4%**	**1**
	Illinois	(2.05)	3	13.0%	3
	North Carolina	0.00	4	0.0%	4
	California	0.00	5	0.0%	5
	Oregon	0.00	6	0.0%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Integrated Biotech Pharmaceutical	Massachusetts	(5.40)	1	25.1%	2
	Washington	**(1.76)**	**2**	**25.8%**	**1**
	Illinois	(0.60)	3	6.1%	3
	North Carolina	0.00	4	0.0%	4
	California	0.00	5	0.0%	5
	Oregon	0.00	6	0.0%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9
Small Software Originator	**Washington**	**(0.30)**	**1**	**24.5%**	**1**
	Illinois	(0.24)	2	15.2%	2
	Massachusetts	(0.21)	3	11.5%	3
	North Carolina	0.00	4	0.0%	4
	California	0.00	5	0.0%	5
	Oregon	0.00	6	0.0%	6
	Texas	0.00	7	0.0%	7
	New York	0.00	8	0.0%	8
	Pennsylvania	0.00	9	0.0%	9

Table 5.8 below compares Washington's results for the high tech credit and for the deferral for new R&D facilities. The two different rankings are constructed in the same manner, but are based on slightly different ten year time periods. The R&D facility deferral must involve the construction or start-up phase while the high tech credit is concerned primarily with ongoing sales and ongoing R&D expenditures. The methodology uses years one through ten for the high tech deferral, incorporating the construction/start-up phase; however, the high tech credit follows years four through thirteen to ensure the capture of ten years of sales.

The results in Table 5.8 demonstrate that after the post construction/start-up the high tech credit provides Washington with a competitive ranking in the top one third for all the hypothetical taxpayers modeled. During the construction/start-up period the high tech deferral positions Washington ahead of all the other states compared in this study.

Table 5.8

Tax Savings as a Percent of Total Tax Burden

Net Present Value: 10 Years of Expected Taxes Divided by Total Tax Burden

Washington Firm	Sales Tax Savings R&D Facility (Yrs 1-10)	Savings Rank	B&O Tax Savings R&D Credit (Yrs 4-13)	Savings Rank
Small Aircraft and Parts Firm	32.2%	1	13.9%	3
Instruments and Equipment	33.6%	1	8.7%	1
Semiconductor & Related	30.4%	1	12.6%	3
Biotech/Pharmaceutical	25.8%	1	15.7%	3
Small Software Originators	24.5%	1	8.0%	2

Summary

The high tech tax incentives in nine states are compared as they relate to diversification and growth. Washington's overall position in five diversified taxpayer types was relatively competitive without the incentives, because other states had significant income tax burdens on the profitable taxpayers modeled. The results also show that with the high tech incentives Washington's tax ranking is moderately improved.

Appendix A: Detail for Survival Rates of Taxpayers

The table below calculates the percentage of businesses that continue to be open from the first year the business uses a high tech incentive. For example, for businesses that first used a high tech incentive in 2007, 81.3 percent were still open three years later.

Detail for Chart 3.3

Survival Rates of Participants – Measured from First Use of High Tech Incentive

Years Open	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	93.9%	89.2%	89.3%	90.8%	91.5%	84.6%	84.0%	92.6%	90.8%	92.4%	89.8%	83.8%	94.5%	90.4%	87.0%	91.2%	94.6%	94.1%
2	91.3%	80.4%	84.3%	83.4%	81.0%	75.3%	77.9%	86.7%	82.4%	87.6%	83.5%	77.5%	89.0%	80.8%	82.4%	83.5%	93.7%	
3	86.7%	76.4%	78.1%	77.9%	72.5%	67.9%	71.8%	76.6%	76.8%	78.1%	77.2%	71.2%	81.3%	75.3%	75.9%	82.4%		
4	81.9%	68.2%	72.5%	71.8%	70.6%	63.6%	65.6%	71.8%	73.9%	73.3%	73.2%	69.4%	79.1%	71.2%	74.1%			
5	73.6%	64.2%	68.0%	69.3%	68.0%	56.2%	61.8%	68.6%	72.5%	69.5%	66.9%	64.9%	76.9%	65.8%				
6	69.3%	56.1%	60.7%	68.7%	65.4%	53.1%	60.3%	62.2%	69.0%	63.8%	60.6%	64.0%	75.8%					
7	64.5%	50.7%	59.0%	65.0%	61.4%	50.0%	58.0%	58.0%	57.7%	57.1%	56.7%	62.2%						
8	61.9%	50.0%	56.7%	61.3%	58.8%	46.3%	56.5%	55.3%	54.9%	52.4%	52.8%							
9	58.6%	49.3%	52.8%	60.1%	56.9%	42.0%	53.4%	52.7%	50.7%	48.6%								
10	55.8%	46.6%	50.0%	57.7%	54.9%	37.7%	49.6%	51.1%	48.6%									
11	53.8%	45.3%	47.8%	57.7%	52.9%	37.7%	48.1%	48.4%										
12	52.5%	44.6%	47.2%	53.4%	51.6%	37.0%	43.5%											
13	49.9%	40.5%	44.9%	52.1%	50.3%	36.4%												
14	47.7%	39.2%	43.3%	49.7%	49.0%													
15	45.8%	37.2%	41.6%	44.2%														
16	44.2%	37.2%	37.6%															
17	41.8%	32.4%																
18	37.0%																	

Appendix A: Detail for Survival Rates of Taxpayers

Participants may not utilize a high tech incentive in the same year they open their business. The table below measures the percentage of participants that continue to be open from the year they opened their business. For example, for businesses that opened in 2007, 78.1 percent were still open three years later.

Detail for Chart 3.4
Survival Rates of Participants – Measured from Year Business Opened

Years Open	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	97.0%	91.9%	98.6%	94.1%	93.7%	90.5%	94.3%	95.2%	91.6%	96.3%	92.4%	90.5%	91.8%	93.3%	90.9%	92.8%	85.4%	88.9%
2	93.3%	84.4%	94.4%	86.7%	84.5%	83.4%	89.4%	89.4%	83.2%	92.6%	87.3%	85.1%	87.7%	82.7%	84.8%	82.6%	83.3%	
3	91.1%	81.5%	89.4%	77.8%	78.2%	77.5%	83.7%	84.6%	78.9%	83.3%	79.7%	81.1%	78.1%	81.3%	80.3%	76.8%		
4	87.4%	75.6%	85.2%	71.9%	73.6%	75.1%	74.0%	78.8%	76.8%	78.7%	75.9%	78.4%	75.3%	73.3%	78.8%			
5	82.2%	66.7%	77.5%	68.9%	69.5%	66.3%	66.7%	71.2%	74.7%	71.3%	68.4%	75.7%	68.5%	69.3%				
6	80.0%	62.2%	73.2%	67.4%	66.1%	61.5%	64.2%	68.3%	71.6%	64.8%	65.8%	74.3%	68.5%					
7	77.8%	58.5%	69.0%	62.2%	63.2%	58.0%	61.0%	67.3%	67.4%	55.6%	64.6%	74.3%						
8	72.6%	56.3%	62.7%	59.3%	60.3%	52.1%	58.5%	56.7%	56.8%	51.9%	62.0%							
9	69.6%	54.1%	59.9%	56.3%	57.5%	46.2%	55.3%	53.8%	54.7%	46.3%								
10	68.1%	51.9%	56.3%	53.3%	55.2%	44.4%	53.7%	50.0%	53.7%									
11	65.2%	48.9%	54.9%	51.9%	51.1%	44.4%	51.2%	48.1%										
12	63.7%	48.9%	52.8%	45.9%	49.4%	41.4%	47.2%											
13	61.5%	47.4%	50.0%	45.2%	48.3%	40.2%												
14	57.8%	43.7%	49.3%	44.4%	47.1%													
15	57.0%	41.5%	48.6%	42.2%														
16	54.8%	40.0%	43.7%															
17	52.6%	31.9%																
18	47.4%																	

Appendix A: Detail for Survival Rates of Taxpayers

For comparison, the table below measures percentages of all businesses within the high tech industry (see Appendix B) that continue to be open from the year opened their business. For example, 42.3 percent of the high tech taxpayers that opened a business in 2007 remained open three years later.

Detail for Chart 3.5
Survival Rates of High Tech Taxpayers – Measured from Year Business Opened

Years Open	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	75.7%	73.8%	76.8%	77.8%	74.7%	74.0%	72.9%	71.1%	70.4%	70.0%	70.9%	71.5%	71.1%	71.8%	72.4%	72.5%	75.1%	83.4%
2	69.7%	67.7%	69.6%	70.3%	67.2%	67.0%	66.1%	63.8%	62.7%	62.7%	61.0%	53.2%	52.1%	50.2%	50.7%	50.2%	73.3%	
3	65.2%	63.3%	64.8%	64.8%	62.4%	62.7%	61.5%	55.9%	55.5%	51.7%	50.1%	44.2%	42.3%	41.2%	40.4%	45.0%		
4	61.8%	59.7%	60.9%	61.0%	59.0%	59.4%	56.1%	52.0%	49.0%	46.1%	45.0%	39.5%	37.8%	36.4%	37.8%			
5	58.8%	56.6%	57.9%	58.1%	56.2%	54.8%	53.1%	46.7%	44.8%	42.5%	41.5%	36.1%	34.3%	33.4%				
6	56.4%	54.2%	55.4%	55.5%	52.3%	52.3%	49.3%	43.3%	42.0%	39.7%	38.8%	33.4%	30.4%					
7	54.3%	52.3%	53.2%	51.8%	50.0%	49.1%	46.2%	40.9%	39.6%	37.6%	36.8%	27.3%						
8	52.7%	50.4%	49.9%	49.7%	47.7%	46.5%	44.3%	39.1%	37.9%	35.8%	28.6%							
9	51.0%	47.4%	47.9%	47.6%	45.3%	44.8%	42.6%	37.5%	36.2%	27.8%								
10	47.6%	45.4%	46.0%	45.4%	43.6%	43.1%	41.3%	36.1%	28.6%									
11	41.6%	43.7%	44.4%	43.8%	41.7%	41.9%	40.1%	33.6%										
12	40.0%	42.2%	42.9%	42.0%	40.6%	40.8%	38.3%											
13	38.6%	40.7%	41.5%	40.8%	39.5%	39.7%												
14	37.5%	39.4%	40.5%	39.6%	38.5%													
15	36.4%	38.4%	39.4%	37.9%														
16	35.5%	37.4%	35.1%															
17	34.6%	22.9%																
18	18.9%																	

Appendix B: High Tech NAICS

Selecting high tech non-participants

Non-participants were only included if they were in the same high tech NAICS as a participant. Participants were included regardless of their NAICS, but only taxpayers in the following NAICS that have never participated in either the high tech credit or high tech deferral were included.

North American Industrial Code System (NAICS) used to identify Non-Participants	
325211	Plastics Material and Resin Manufacturing
325320	Pesticide and Other Agricultural Chemical Manufacturing
325411	Medicinal and Botanical Manufacturing
325412	Pharmaceutical Preparation Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing
326140	Polystyrene Foam Product Manufacturing
326199	All Other Plastics Product Manufacturing
327992	Ground or Treated Mineral and Earth Manufacturing
331110	Iron and Steel Mills and Ferroalloy Manufacturing
331313	Alumina Refining and Primary Aluminum Production
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)
332216	Saw Blade and Hand Tool Manufacturing
332439	Other Metal Container Manufacturing
332710	Machine Shops
332911	Industrial Valve Manufacturing
333241	Food Product Machinery Manufacturing
333249	Other Industrial Machinery Manufacturing
333314	Optical Instrument and Lens Manufacturing
333318	Other Commercial and Service Industry Machinery Manufacturing
333511	Industrial Mold Manufacturing
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
333997	Scale and Balance Manufacturing
333999	All Other Miscellaneous General Purpose Machinery Manufacturing
334111	Electronic Computer Manufacturing
334112	Computer Storage Device Manufacturing
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing

Appendix B: High Tech NAICS

North American Industrial Code System (NAICS) used to identify Non-Participants	
334290	Other Communications Equipment Manufacturing
334310	Audio and Video Equipment Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334514	Totalizing Fluid Meter and Counting Device Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
334516	Analytical Laboratory Instrument Manufacturing
334517	Irradiation Apparatus Manufacturing
334519	Other Measuring and Controlling Device Manufacturing
334613	Blank Magnetic and Optical Recording Media Manufacturing
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing
335129	Other Lighting Equipment Manufacturing
335210	Small Electrical Appliance Manufacturing
335311	Power, Distribution, and Specialty Transformer Manufacturing
335313	Switchgear and Switchboard Apparatus Manufacturing
335314	Relay and Industrial Control Manufacturing
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing
336390	Other Motor Vehicle Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336611	Ship Building and Repairing
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing
339114	Dental Equipment and Supplies Manufacturing
339920	Sporting and Athletic Goods Manufacturing
339999	All Other Miscellaneous Manufacturing
511120	Periodical Publishers
511210	Software Publishers
512110	Motion Picture and Video Production
512191	Teleproduction and Other Postproduction Services

Appendix B: High Tech NAICS

North American Industrial Code System (NAICS) used to identify Non-Participants	
517110	Wired Telecommunications Carriers
517210	Wireless Telecommunications Carriers (except Satellite)
517410	Satellite Telecommunications
517911	Telecommunications Resellers
517919	All Other Telecommunications
518210	Data Processing, Hosting, and Related Services
519110	News Syndicates
519130	Internet Publishing and Broadcasting and Web Search Portals
519190	All Other Information Services
541213	Tax Preparation Services
541214	Payroll Services
541310	Architectural Services
541330	Engineering Services
541380	Testing Laboratories
541420	Industrial Design Services
541430	Graphic Design Services
541490	Other Specialized Design Services
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541513	Computer Facilities Management Services
541519	Other Computer Related Services
541611	Administrative Management and General Management Consulting Services
541613	Marketing Consulting Services
541614	Process, Physical Distribution, and Logistics Consulting Services
541618	Other Management Consulting Services
541620	Environmental Consulting Services
541690	Other Scientific and Technical Consulting Services
541711	Research and Development in Biotechnology
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
541720	Research and Development in the Social Sciences and Humanities
541810	Advertising Agencies
541921	Photography Studios, Portrait
541940	Veterinary Services
541990	All Other Professional, Scientific, and Technical Services
562211	Hazardous Waste Treatment and Disposal
562920	Materials Recovery Facilities
562998	All Other Miscellaneous Waste Management Services

Appendix B: High Tech NAICS

North American Industrial Code System (NAICS) used to identify Non-Participants	
621111	Offices of Physicians (except Mental Health Specialists)
621310	Offices of Chiropractors
621511	Medical Laboratories
621610	Home Health Care Services
621991	Blood and Organ Banks
621999	All Other Miscellaneous Ambulatory Health Care Services
622110	General Medical and Surgical Hospitals
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals

Appendix C: State Rates and Incentives

State Tax Rates and Incentives

The state tax rates and incentive programs described here are used to estimate the ten-year net present value of state taxes for the tax comparisons among the nine states. Expenditures, such as public expenditures on access roads or economic development grants and loans to businesses, are not modeled. Data used are the most current available as of August 15, 2013. Sales tax and property tax rates depend on location, so the analysis sets the business location.

State and Local Taxes and Tax Rates

Taxes modeled are paid by business taxpayers. Sales or other excise taxes collected by taxpayers and remitted to state and local authorities are excluded. However, the model includes sales and use taxes paid on taxpayer purchases. Property taxes on real and personal taxpayer property are included. The models also include corporate income, franchise, and gross receipts taxes, such as Washington's business and occupation tax.

Sales, use, and property tax rates include both state and local rates for fairly broad, but specific areas, such as a particular county or a metropolitan area. The rates used in the analyses are typically averages, such as an average county rate or an average of rates found in typical locations (tax code areas) in the region. Average rates were found in published sources, calculated from aggregated collections and tax base data, or calculated as simple averages of rates in the region.

The model includes state income, franchise, or gross receipts taxes, but not local taxes on business income or receipts. The model does not include excise taxes other than state and local sales and use taxes. For example, fuel taxes, industry or product specific excise taxes are not included in the model.

Sales tax rates are measured in percents. The model uses the property tax effective rates from the Minnesota Taxpayers Association "50 State Property Tax Study 2010." Property tax effective rates express the relationship between net property taxes and the market value of the property. Property tax rates are shown per $1,000 of taxable value. All businesses except software use the "Industrial Property Tax Rates" tables where personal property represents 50 percent. Personal property includes machinery & equipment (M&E), inventories and fixtures. The software business' property tax is based on the "Urban Commercial Property Tax" table and does not include M&E or inventories.

The Washington business and occupation tax rate represents the applicable statutory rate. Other than the high tech credit for R&D expenses, the model makes no adjustments for deductions or credits.

Appendix C: State Rates and Incentives

Statutory corporate income tax rates were converted into effective corporate tax rates with the use of Internal Revenue Service (IRS) data. The corporate income tax states modeled to a large extent follow the definitions in the Internal Revenue Code, so IRS data for the five industries was used to adjust the statutory rate down to reflect commonly taken deductions. The data below provide the effective rates used for each industry in each state.

State Incentives

State taxes and incentives were modeled as accurately as possible. The model includes three kinds of incentives:

- Those that apply to all businesses in a state or to the businesses in the modeled industries, such as sales and use tax exemptions for items for resale, or manufacturing machinery, or construction labor;
- Credits for R&D expenditures; and
- The Washington high tech deferral/exemption for new, renovated, or expanded R&D facilities and similar incentives for general investment in new, renovated, or expanded facilities in other states.

Note: The model includes investment incentives in other states broadly available to all businesses meeting the program requirements. The model does note include incentives that:

- Narrowly targeted locations,
- Require approval by local authorities, or
- Require negotiated tax payments.

Washington

Firm location: Metropolitan King County, within the regional transit district

Total sales tax rate: 9.5 percent, King County-RTA (state portion, 6.5 percent)

Effective property tax rate:

Firm Type (in King County)	Percent	Per $1,000 of taxable value
All firms, except software	0.65%	$6.50
Software firms	0.783%	$7.83

B&O tax rate: The B&O tax rate for all businesses except the small aircraft was 0.484 percent or 0.00484 of sales. The rate for the small aircraft business was 0.2904 percent. The reduced semiconductor rate was not used because that program is so narrowly drawn that only a few firms can make use of it.

Incentives modeled: **High tech R&D sales and use tax deferral/exemption,** which expires January 1, 2015. This study assumed the incentive will be extended.

High tech credit, which expires January 1, 2015. This study assumed the incentive will be extended.

Machinery and equipment exemption provides a general sales and use tax exemption for qualified machinery and equipment used in manufacturing.

Notes: **Washington's high tech credit:** The credit is much easier to understand, and the forms are easier to fill out, than many other states' incremental approaches, often piggybacking on the complex federal program. There is hearsay evidence and some data indicating that businesses, particularly small businesses, are less likely to take R&D credits in some other states because of the difficulty in qualifying and in obtaining help with the programs.

Machinery and equipment exemption: This study assumes all businesses in all comparisons and scenarios use the M&E exemption. The state rankings include the M&E exemption in both the "with" and "without" estimates. The M&E exemption does not contribute to the changes in rankings.

California

Firm location: Santa Clara County (Silicon Valley)

Total sales tax rate: Effective April 1, 2013 - 8.75 percent (state portion, 6.5 percent)

Effective property tax rate:

Firm Type (in Los Angeles)	Percent	Per $1,000 of taxable value
All firms, except software	1.016%	$10.16
Software firms	1.270%	$12.70

Corporate income tax and franchise tax rates: 8.84 percent (income and franchise are essentially the same tax for different business forms). Effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 8.4 percent for pharmaceuticals,
- 6.63 percent for semiconductor,
- 7.43 percent for instruments,
- 8.22 percent for aircraft, and
- 7.6 percent for software.

Incentives modeled: **Federal alternative incremental R&D credit:** Businesses receive a 15 percent credit for R&D expenses in California that are over a base amount. The analysis bases its calculation on the California schedule 3523 (2008). Businesses that make research payments to qualified institutions receive a credit of 24 percent. The credits can be carried forward.

Notes: Sales tax incentives in California are expired. At the time of this study pending legislation would offer a sales and use tax exemption for manufacturing and R&D equipment. The model does not include this pending legislation.

A post-analysis review indicates California has passed legislation that takes effect on July 1, 2014. It provides a partial sales and use tax exemption on certain manufacturing and R&D equipment. The partial exemption applies to the state sales and use tax. Local sales and use taxes still apply.

Illinois

Firm location: Chicago, Cook County

Total sales tax rate: 9.25 percent in Chicago (state portion, 6.25 percent)

Effective property tax rate:

Firm Type (in Chicago)	Percent	Per $1,000 of taxable value
All firms, except software	1.184%	$11.84
Software firms	1.793%	$17.93

Corporate income tax / Franchise tax rate: Combined rate is 9.5 percent. Corporate tax rate is 7.0 percent; Franchise tax rate is 2.5 percent. Effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 9.03 percent for pharmaceuticals,
- 7.13 percent for semiconductor,
- 7.98 percent for instruments,
- 8.84 percent for aircraft, and
- 8.17 percent for software.

Incentives modeled:

Manufacturer's Purchase Credit: Illinois provides a state sales tax credit of 50 percent of the 6.25 percent state tax on qualifying production-related tangible personal property used or consumed by the purchaser for R&D. Expires: August 31, 2014, carry forward ends Dec. 31, 2015. This study assumes the incentive will be extended.

R&D Credit: Businesses receive a credit for 6.5 percent of the excess expenses over a base period. There is a five year carry forward period to use the credit. This incentive expires January 1, 2015. This study assumes the incentive will be extended.

Economic Development for a Growing Economy (EDGE) Credit: Illinois provides a corporate income tax credit based on new employees. This study assumes a credit of 50 percent of the employees' incremental personal income tax.

High Impact Business Program Investment Credit: Businesses receive a 0.5 percent credit for tangible personal property. Note: the chip plant is the only model that meets the employee criteria (>500). 5 year carry forward.

Massachusetts

Firm location: Boston, Suffolk County

Total sales tax rate: 6.25 percent in Boston (Massachusetts has no local rates)

Effective property tax rate:

Firm Type (in Boston)	Percent	Per $1,000 of taxable value
All firms, except software	1.307%	$13.07
Software firms	2.399%	$23.99

Corporate income tax rate: Corporate tax rate is 8.0 percent. Effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 7.6 percent for pharmaceuticals,
- 6.0 percent for semiconductor,
- 6.72 percent for instruments,
- 7.44 percent for aircraft, and
- 6.88 percent for software.

Franchise tax rate: Franchise tax rate is $2.60 per $1,000 of the greater of tangible personal property or taxable net worth. This study uses taxable net worth.

Incentives modeled: **Investment Credit:** 3 percent of the cost of qualifying tangible property, which can be carried forward for three years.

Research and Development: Sum of 10 percent of any excess qualified research expenses for the taxable year over the base amount plus 15 percent of the basic research payments determined under IRC §41. Credit amount is limited to 100 percent of the taxpayer's first $25,000 of excise tax liability plus 75 percent of the liability over $25,000. A single $25,000 limitation applies to all members of an aggregated group.

New York

Firm location: New York City, New York County

Total sales tax rate: 8.875 percent in New York City (state portion, 4.0 percent)

Effective property tax rate:

Firm Type (in New York City)	Percent	Per $1,000 of taxable value
All firms, except software	1.984%	$19.84
Software firms	3.307%	$33.07

Corporate income tax rate: Corporate tax rate is 7.1 percent. Effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 6.75 percent for pharmaceuticals,
- 5.33 percent for semiconductor,
- 5.96 percent for instruments,
- 6.60 percent for aircraft, and
- 6.11 percent for software.

Incentives modeled: **Research and Development Personal Property Exemption:** A sales and use tax exemption is allowed on tangible personal property (TPP) used directly in R&D. TPP broadly include materials worked on, and machinery, equipment and supplies used to perform the R&D work.

Note: **Excelsior Job Program Credit:** This credit was considered but not modeled in the study. The application and approval process indicates a low participant count, compared to the total New York businesses applying.

North Carolina

Firm location: Raleigh-Durham-Chapel Hill research triangle (Durham, Wake, or Orange County.) The estimates assume the location to be: (1) in a tier 3 county, and (2) not in an urban progress or agrarian growth zone.

Total sales tax rate: Effective April 1, 2012 - 6.75 percent (state portion, 4.75 percent)

Privilege tax: 1 percent on manufacturing machinery and equipment up to $8,000 in value (maximum of $80 tax).

Effective property tax rate:

Firm Type (in Raleigh)	Percent	Per $1,000 of taxable value
All firms, except software	0.723%	$7.23
Software firms	0.905%	$9.05

Corporate income tax rates: 6.9 percent. Net taxable income is similar to federal definitions, so effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 6.56 percent for pharmaceuticals,
- 5.18 percent for semiconductor,
- 5.80 percent for instruments,
- 6.42 percent for aircraft, and
- 5.93 percent for software.

Franchise tax: 0.15 percent of whichever yields the highest:

1. Capital stock, surplus, and undivided profits, apportioned to the state,
2. Investments in North Carolina tangible property, or
3. 55 percent of the appraised tangible property plus intangible property in the state.

The model includes nontrivial tax using the third definition, without intangible property.

Incentives modeled: A variable credit for R&D spending over a base amount where:

- 1.25 percent is granted on non-university R&D spending up to $50 million,
- 2.25 percent on spending between $50 million and $250 million, and
- 3.25 percent on spending over $250 million.

Oregon

Firm location: Portland, Multnomah County

Total sales tax rate: Oregon does not have a sales tax.

Effective property tax rate:

Firm Type (in Portland)	Percent	Per $1,000 of taxable value
All firms, except software	1.202%	$12.02
Software firms	1.302%	$13.02

Corporate income tax rate: The greater of: (1) 6.6 percent on the first $250,000 and 7.6 percent thereafter, or (2) a minimum tax set out in the Minimum Tax Table found in the Oregon Corporation Excise Tax Form 20 Instructions.

Effective corporate income tax rate calculations use IRS data by industry. Effective rates on amounts under $250,000 and over $250,000:

Industry	Under $250,000	Over $250,000
Pharmaceuticals	6.27%	7.22%
Semiconductor	4.95%	5.70%
Instruments	5.54%	6.38%
Aircraft	6.14%	7.07%
Software	5.68%	6.54%

Incentives modeled: **Qualified Research Activities Credit:** This study uses the calculation methodology that takes 5 percent of an increase in qualified research expenses that exceed 10 percent of Oregon sales found in Form 20. Oregon limits the credit to $1 million of research activities that occur in Oregon. The credits can be carried forward.

Notes: **Incentives for new investment:** The model does not include Oregon's incentives for enterprise zones and rural enterprise zones. The most well-known program not limited to enterprise zones is the Strategic Investment Program (SIP). Enrollment in SIP requires approval of local governments and often carries job and other requirements. SIP caps assessed values at $100 million, though property value does rise later. The model does not include this because it requires the discretion of local officials, negotiations over taxes and fees, and other conditions.

Oregon does not levy property taxes on construction in progress. However, property taxes are modeled using a standard assessment practice for all comparisons, and does not affect the “before” and “after” changes in state rankings.

Construction and capital investment costs reflect Oregon’s lack of retail sales tax or use tax.

Pennsylvania

Firm location: Philadelphia, Philadelphia County

Total sales tax rate: 8.0 percent in Philadelphia (state portion, 6.0 percent)

Effective property tax rate:

Firm Type (in Philadelphia)	Percent	Per $1,000 of taxable value
All firms, except software	2.041%	$20.41
Software firms	3.401%	$34.01

Corporate income tax rate: Corporate tax rate is 9.9 percent. Effective corporate income tax rate calculations use IRS data by industry.

Effective rates include:

- 9.49 percent for pharmaceuticals,
- 7.49 percent for semiconductor,
- 8.39 percent for instruments,
- 9.29 percent for aircraft, and
- 5.89 percent for software.

Incentives modeled: **Research and Development Credit:** A 10 percent credit (20 percent for qualified small businesses) of the excess of total Pennsylvania qualified R&D expense for the taxable year over the Pennsylvania base amount. Expires: December 31, 2015. This study assumes the incentive will be extended.

Texas

Firm location: Austin area, Travis County

Total sales tax rate: 8.25 percent in Austin (state portion, 6.25 percent)

Effective property tax rate:

Firm Type (in Austin)	Percent	Per $1,000 of taxable value
All firms, except software	2.317%	$23.17
Software firms	2.130%	$21.30

Franchise tax rate: 1 percent tax due of the lesser of:

- 70 percent of revenue,
- Total revenue minus total cost of goods sold, or
- Total revenue minus compensation.

If total revenue is less than $10 million, the firm may use a rate of 0.575 percent of total revenue.

Incentives modeled: **Manufacturing Exemption:** The model includes the tangible personal property directly used or consumed in or during the manufacturing, processing, or fabrication of tangible personal property for sale. The property must be used or consumed as necessary or essential to the manufacturing process and make or cause a chemical or physical change in the manufactured product.

Notes: The Texas R&D credit incentive expired in 2006. At the time of this study there is pending legislation that would allow an R&D credit on qualified R&D spending. The model does not include this pending legislation.

A post-analysis review indicates Texas has passed legislation that takes effect on January 1, 2014.

Firm Profiles

Calculation of state tax payments requires an operating description of each of the five firms analyzed. The primary assumptions describing the firms are presented in the five firm profiles found in Tables D.1 through D.5.

Table D.1
Small Aircraft and Parts Producer - NAICS 33641
Firm Profile

(in $ millions unless otherwise specified)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Gross Operating Revenues (Sales)		$34.8	$41.2	$48.3	$51.1	$55.0	$58.9	$62.7	$66.5
Number of Employees (each, full time)		76	85	91	95	99	103	106	110
Wages, Salaries, and Benefits		$7.8	$8.9	$9.8	$10.5	$11.2	$11.9	$12.6	$13.4
Value of Property		$18.7	$18.2	$17.6	$17.4	$17.3	$17.2	$17.2	$17.2
Capitalized Expenditures:	% of sales (yr. 5)								
Additional Structures	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Additional Machinery and Equipment	1.7%	0.7	0.7	0.6	0.8	0.9	1.0	1.0	1.0
Operating Expenditures:									
Taxable materials purchased (WA definition)	5.3%	$2.0	$2.5	$2.5	$2.7	$2.9	$3.2	$3.3	$3.5
Non-taxable Materials purchased	48.1%	18.2	22.3	22.8	24.6	26.5	28.4	29.8	31.9
Leased building and equipment	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repairs	0.7%	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5
Interest expenses	1.4%	0.5	0.6	0.6	0.7	0.8	0.8	1.2	1.7
Depreciation & Amortization	3.7%	3.7	3.6	2.5	1.9	2.0	2.1	2.1	2.2
Subtotal		$24.8	$29.3	$28.8	$30.3	$32.6	$35.0	$36.9	$39.8
Other Income/Expense NEC	16.2%	0.7	0.7	8.1	8.2	8.9	9.6	10.0	10.4
Total Operating Expenditures		$25.5	$30.0	$37.0	$38.5	$41.5	$44.6	$46.9	$50.2
Profit (percent of sales, before all local taxes)		3.3%	4.5%	2.4%	3.4%	3.5%	3.3%	4.3%	3.6%
Profit		$1.13	$1.85	$1.14	$1.75	$1.92	$1.92	$2.71	$2.41
Research and Development Expenditures	9.7%	$3.4	$4.0	$4.7	$5.0	$5.3	$5.7	$6.1	$6.5
These amounts are included in the expenditures shown above, they are not additional expenditures.									

Notes:

- The firm profile is not a complete income statement, but merely provides enough information to calculate taxes.
- A dash, - , indicates a tax amount of zero.
- $0.00 represents estimated taxes of less than $5,000.
- $5,000 rounds up to $10,000 and appears as $0.01.

Table D.2
Instruments and Related Equipment - NAICS 3345
Firm Profile

(in $ millions unless otherwise specified)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Gross Operating Revenues (Sales)		$22.1	$25.8	$27.9	$29.1	$30.0	$30.8	$31.6	$32.3
Number of Employees (each, full time)		44	48	50	51	52	53	54	54
Wages, Salaries, and Benefits		$6.1	$6.8	$7.3	$7.6	$7.9	$8.3	$8.6	$8.9
Value of Property		$31.1	$32.8	$34.1	$35.8	$37.8	$39.7	$41.4	$43.3
Capitalized Expenditures:	% of sales (yr. 5)								
Additional Structures	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Additional Machinery and Equipment	17.1%	4.3	4.3	4.1	4.7	5.1	5.3	5.4	5.5
Operating Expenditures:									
Taxable materials purchased (WA definition)	3.7%	$0.9	$1.0	$1.1	$1.1	$1.1	$1.1	$1.2	$1.2
Non-taxable materials purchased	33.7%	7.8	9.0	9.6	9.9	10.1	10.3	10.4	10.5
Leased building and equipment	0.8%	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Repairs	0.6%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Interest expenses	0.3%	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Depreciation & Amortization	3.0%	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.0
Subtotal		$9.7	$11.2	$11.9	$12.4	$12.6	$12.9	$13.2	$13.4
Other Income/Expense NEC	26.7%	4.9	6.3	7.3	7.4	8.0	8.6	8.5	8.4
Total Operating Expenditures		$14.6	$17.5	$19.2	$19.8	$20.7	$21.5	$21.7	$21.8
Profit (percent of sales, before all local taxes)		4.9%	4.9%	4.1%	4.8%	3.6%	2.3%	3.1%	3.8%
Profit		$1.08	$1.27	$1.13	$1.41	$1.07	$0.70	$0.99	$1.23
Research and Development Expenditures	9.6%	$2.1	$2.5	$2.7	$2.8	$2.9	$3.0	$3.0	$3.1
These amounts are included in the expenditures shown above, they are not additional expenditures.									

Notes:

- The firm profile is not a complete income statement, but merely provides enough information to calculate taxes.
- A dash, - , indicates a tax amount of zero.
- $0.00 represents estimated taxes of less than $5,000.
- $5,000 rounds up to $10,000 and appears as $0.01.

Table D.3
Semiconductor Manufacturer - NAICS 3344
Firm Profile

(in $ millions unless otherwise specified)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Gross Operating Revenues (Sales)		$201.2	$218.3	$229.9	$240.3	$250.0	$259.1	$267.6	$275.4
Number of Employees (each, full time)		506	529	545	559	571	582	593	602
Wages, Salaries, and Benefits		$58.8	$63.1	$66.6	$70.0	$73.3	$76.6	$80.0	$83.3
Value of Property		$170.9	$157.5	$145.8	$135.7	$127.0	$120.3	$114.4	$108.8
Capitalized Expenditures:	% of sales (yr. 5)								
Additional Structures	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Additional Machinery and Equipment	1.0%	2.1	1.9	2.1	2.3	2.5	3.5	3.5	3.5
Operating Expenditures:									
Taxable materials purchased (WA definition)	3.2%	$6.4	$6.9	$7.2	$7.5	$7.9	$8.2	$8.5	$8.7
Non-taxable Materials purchased	18.2%	36.2	39.7	43.2	44.7	45.5	47.1	48.7	50.1
Leased building and equipment	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repairs	0.2%	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Interest expenses	2.9%	5.7	6.3	6.2	6.4	7.2	7.5	7.7	8.0
Depreciation & Amortization	4.9%	14.8	16.0	15.6	15.3	12.3	3.3	3.6	3.9
Subtotal		$63.2	$69.3	$72.6	$74.3	$73.4	$66.5	$68.9	$71.2
Other Income/Expense NEC	35.5%	74.2	70.2	78.2	80.2	88.8	107.6	107.1	106.6
Total Operating Expenditures		$137.4	$139.4	$150.8	$154.5	$162.2	$174.1	$176.0	$177.7
Profit (percent of sales, before all local taxes)		1.5%	6.4%	4.7%	5.9%	5.1%	2.6%	3.7%	0.0%
Profit		$3.07	$13.92	$10.76	$14.14	$12.85	$6.67	$9.95	$0.00
Research and Development Expenditures	9.6%	$19.3	$21.0	$22.1	$23.1	$24.0	$24.9	$25.7	$26.4
These amounts are included in the expenditures shown above, they are not additional expenditures.									

Notes:

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- $5,000 rounds up to $10,000 and appears as $0.01.

Table D.4
Biotech, an integrated firm that manufactures and wholesales pharmaceuticals - NAICS 3254
Firm Profile

(in $ millions unless otherwise specified)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Gross Operating Revenues (Sales)		$76.6	$86.4	$90.7	$95.3	$100.0	$105.0	$110.3	$115.8
Number of Employees (each, full time)		125	126	127	128	130	131	132	134
Wages, Salaries, and Benefits		$15.7	$16.3	$16.9	$17.5	$18.1	$18.7	$19.4	$20.1
Value of Property		$51.2	$53.1	$55.1	$57.1	$59.2	$61.4	$63.7	$66.0
Capitalized Expenditures:	% of sales (yr. 5)								
Additional Structures	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Additional Machinery and Equipment	6.3%	3.0	5.6	5.9	6.1	6.3	6.6	6.8	7.0
Operating Expenditures:									
Taxable materials purchased (WA definition)	3.4%	$2.6	$2.9	$3.1	$3.2	$3.4	$3.5	$3.7	$3.9
Non-taxable Materials purchased	3.4%	2.6	2.9	3.1	3.2	3.4	3.5	3.7	3.9
Leased building and equipment	0.5%	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.6
Repairs	0.2%	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4
Interest expenses	0.9%	1.0	0.8	0.9	0.9	0.9	1.0	1.0	1.1
Depreciation & Amortization	5.8%	5.7	6.3	7.5	6.6	5.8	6.8	7.5	8.4
Subtotal		$12.3	$13.6	$15.2	$14.7	$14.2	$15.6	$16.9	$18.2
Other Income/Expense NEC	57.7%	42.3	46.5	44.2	51.0	57.7	58.5	60.1	61.7
Total Operating Expenditures		$54.7	$60.1	$59.4	$65.6	$71.9	$74.1	$76.9	$79.9
Profit (percent of sales, before all local taxes)		7.2%	10.7%	15.1%	11.9%	9.2%	10.8%	11.8%	0.0%
Profit		$5.50	$9.29	$13.74	$11.35	$9.17	$11.33	$13.05	$0.00
Research and Development Expenditures	12.7%	$9.7	$11.0	$11.5	$12.1	$12.7	$13.3	$14.0	$14.7

These amounts are included in the expenditures shown above, they are not additional expenditures.

Notes:

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Table D.5
Software, originators of software - NAICS 51120
Firm Profile

(in $ millions unless otherwise specified)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Gross Operating Revenues (Sales)		$8.4	$10.4	$11.9	$13.6	$15.0	$16.2	$17.1	$18.2
Number of Employees (each, full time)		32	40	45	50	53	56	57	59
Wages, Salaries, and Benefits		$4.8	$6.1	$7.0	$7.9	$8.7	$9.3	$9.9	$10.4
Value of Property		$5.6	$6.0	$6.3	$6.7	$7.0	$7.4	$7.8	$8.2
Capitalized Expenditures:	% of sales (yr. 5)								
Additional Structures	0.0%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Additional Machinery and Equipment	7.7%	1.3	1.0	1.1	1.1	1.2	1.2	1.3	1.3
Operating Expenditures:									
Taxable materials purchased (WA definition)	2.1%	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4
Non-taxable Materials purchased	2.1%	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Leased building and equipment	3.9%	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7
Repairs	0.0%	-	-	-	-	-	0.2	0.2	0.2
Interest expenses	1.4%	1.0	0.8	0.4	0.2	0.2	0.2	0.2	0.2
Depreciation & Amortization	8.6%	1.2	1.5	1.7	1.5	1.3	1.1	1.1	1.1
Subtotal		$2.9	$3.1	$3.1	$2.8	$2.7	$2.8	$2.9	$3.0
Other Income/Expense NEC	12.6%	0.7	0.9	1.2	1.6	1.9	2.1	2.3	2.4
Total Operating Expenditures		$3.6	$4.1	$4.3	$4.4	$4.6	$4.9	$5.2	$5.4
Profit (percent of sales, before all local taxes)		-1.7%	1.0%	4.3%	8.2%	10.1%	10.4%	10.7%	11.9%
		($0.15)	$0.10	$0.52	$1.12	$1.51	$1.69	$1.84	$2.16
Research and Development Expenditures	9.7%	$0.8	$1.0	$1.2	$1.3	$1.5	$1.6	$1.7	$1.8
These amounts are included in the expenditures shown above, they are not additional expenditures.									

Notes:

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- $5,000 rounds up to $10,000 and appears as $0.01.

Detailed State Taxes

Chapter 5 describes the results of total tax comparisons for Washington and six other states. Tables D.6 through D.10 on the following pages contain detailed data concerning the incentives comparison. They show estimated annual taxes for each of the three major tax sources when firms take available incentives in any of the nine states.

Table D.6
Small Aircraft and Parts Producer - NAICS 33641
Calculated Tax Payments with All Incentives in All States

Tax Detail (in $ millions)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year NPV
Washington State Taxes											
B&O Tax	$0.06	$0.07	$0.08	$0.08	$0.09	$0.09	$0.10	$0.11	$0.11	$0.12	**$0.72**
Sales Tax	0.22	0.26	0.26	0.29	0.32	0.34	0.35	0.38	0.40	0.43	**2.62**
Property Tax	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	**0.95**
Total	0.40	0.45	0.46	0.49	0.52	0.54	0.56	0.60	0.63	0.66	**4.29**
California Taxes											
Corporate Income Tax	$0.00	$0.01	$0.00	$0.05	$0.05	$0.05	$0.11	$0.07	$0.02	($0.06)	**$0.25**
Sales Tax	0.25	0.29	0.29	0.33	0.36	0.39	0.40	0.42	0.45	0.47	**2.95**
Property Tax	0.20	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.18	0.18	**1.49**
Total	0.45	0.49	0.48	0.56	0.58	0.61	0.68	0.67	0.65	0.58	**4.68**
Illinois Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.07	$0.08	$0.02	$0.00	**$0.13**
Sales Tax	0.19	0.23	0.24	0.25	0.27	0.29	0.31	0.33	0.35	0.37	**2.29**
Property Tax	0.22	0.21	0.20	0.19	0.19	0.19	0.19	0.18	0.18	0.18	**1.61**
Total	0.41	0.44	0.44	0.45	0.46	0.48	0.56	0.59	0.56	0.55	**4.02**
Massachusetts Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.01	$0.08	$0.03	$0.00	**$0.09**
Sales Tax	0.18	0.21	0.21	0.24	0.26	0.28	0.29	0.30	0.32	0.34	**2.11**
Property Tax	0.24	0.23	0.23	0.22	0.21	0.21	0.20	0.20	0.20	0.20	**1.78**
Total	0.43	0.45	0.43	0.45	0.47	0.48	0.50	0.59	0.55	0.54	**3.98**
New York Taxes											
Corporate Income Tax	$0.05	$0.11	$0.06	$0.10	$0.12	$0.12	$0.17	$0.15	$0.11	$0.05	**$0.84**
Sales Tax	0.20	0.24	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.39	**2.37**
Property Tax	0.37	0.36	0.34	0.33	0.32	0.31	0.31	0.31	0.31	0.31	**2.70**
Total	0.62	0.70	0.65	0.69	0.72	0.73	0.80	0.80	0.78	0.74	**5.90**
North Carolina Taxes											
Corp. Income & Franchise Taxes	$0.05	$0.08	$0.05	$0.08	$0.10	$0.10	$0.15	$0.13	$0.09	$0.03	**$0.70**
Sales Tax	0.15	0.19	0.19	0.21	0.22	0.24	0.25	0.27	0.29	0.30	**1.86**
Property Tax	0.14	0.14	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.13	**1.06**
Total	0.35	0.40	0.38	0.42	0.44	0.46	0.52	0.52	0.50	0.46	**3.62**
Oregon Taxes											
Corporate Income Tax	$0.04	$0.09	$0.05	$0.11	$0.13	$0.14	$0.20	$0.18	$0.14	$0.75	**$1.39**
Property Tax	0.23	0.23	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.21	**1.76**
Total	0.28	0.31	0.27	0.32	0.34	0.35	0.41	0.39	0.35	0.96	**3.15**
Pennsylvania Taxes											
Corporate Income Tax	$0.00	$0.15	$0.08	$0.14	$0.16	$0.16	$0.23	$0.20	$0.15	$0.06	**$1.07**
Sales Tax	0.23	0.27	0.27	0.30	0.33	0.35	0.37	0.39	0.41	0.43	**2.70**
Property Tax	0.38	0.37	0.35	0.34	0.33	0.32	0.32	0.32	0.31	0.31	**2.78**
Total	0.61	0.78	0.70	0.78	0.81	0.83	0.92	0.91	0.88	0.81	**6.54**
Texas Taxes											
Franchise Tax	$0.13	$0.15	$0.18	$0.19	$0.21	$0.22	$0.24	$0.25	$0.26	$0.28	**$1.70**
Sales Tax	0.19	0.23	0.24	0.26	0.28	0.30	0.31	0.33	0.35	0.38	**2.30**
Property Tax	0.45	0.43	0.42	0.41	0.40	0.40	0.40	0.40	0.40	0.40	**3.40**
Total	0.77	0.82	0.84	0.86	0.88	0.92	0.95	0.98	1.02	1.05	**7.40**

Table D.7
Instruments and Related Equipment - NAICS 3345
Calculated Tax Payments with All Incentives in All States

Tax Detail (in $ millions)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year NPV
Washington State Taxes											
B&O Tax	$0.08	$0.09	$0.10	$0.10	$0.11	$0.11	$0.11	$0.11	$0.12	$0.12	**$0.85**
Sales Tax	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	**0.81**
Property Tax	0.19	0.20	0.21	0.22	0.23	0.25	0.26	0.27	0.28	0.29	**1.95**
Total	0.35	0.39	0.41	0.42	0.44	0.46	0.47	0.49	0.50	0.52	**3.62**
California Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Sales Tax	0.46	0.48	0.47	0.53	0.57	0.58	0.60	0.61	0.62	0.63	**4.51**
Property Tax	0.30	0.32	0.33	0.35	0.36	0.38	0.40	0.42	0.44	0.45	**3.05**
Total	0.76	0.80	0.80	0.87	0.93	0.97	1.00	1.03	1.06	1.08	**7.56**
Illinois Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.03	**$0.02**
Sales Tax	0.09	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	**0.96**
Property Tax	0.35	0.37	0.39	0.40	0.42	0.45	0.47	0.49	0.51	0.53	**3.55**
Total	0.44	0.47	0.50	0.52	0.54	0.57	0.59	0.62	0.64	0.69	**4.53**
Massachusetts Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Sales Tax	0.33	0.34	0.34	0.38	0.41	0.42	0.43	0.43	0.44	0.45	**3.22**
Property Tax	0.38	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.58	**3.92**
Total	0.71	0.75	0.77	0.82	0.87	0.91	0.94	0.98	1.00	1.03	**7.14**
New York Taxes											
Corporate Income Tax	$0.00	$0.00	$0.02	$0.05	$0.03	$0.01	$0.03	$0.04	$0.05	$0.05	**$0.22**
Sales Tax	0.10	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.14	**1.05**
Property Tax	0.58	0.62	0.65	0.68	0.71	0.75	0.79	0.82	0.86	0.89	**5.95**
Total	0.68	0.73	0.79	0.86	0.88	0.89	0.95	1.00	1.04	1.08	**7.22**
North Carolina Taxes											
Corp. Income & Franchise Taxes	$0.02	$0.05	$0.06	$0.07	$0.06	$0.05	$0.06	$0.07	$0.07	$0.04	**$0.44**
Sales Tax	0.11	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.16	**1.15**
Property Tax	0.21	0.23	0.24	0.25	0.26	0.27	0.29	0.30	0.31	0.32	**2.17**
Total	0.35	0.40	0.42	0.45	0.46	0.47	0.50	0.52	0.54	0.52	**3.76**
Oregon Taxes											
Corporate Income Tax	$0.02	$0.02	$0.06	$0.08	$0.07	$0.05	$0.07	$0.09	$0.10	$0.11	**$0.51**
Property Tax	0.35	0.37	0.39	0.41	0.43	0.45	0.48	0.50	0.52	0.54	**3.61**
Total	0.37	0.39	0.45	0.49	0.50	0.50	0.55	0.58	0.62	0.64	**4.11**
Pennsylvania Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Sales Tax	0.42	0.44	0.43	0.48	0.52	0.53	0.54	0.55	0.56	0.57	**4.12**
Property Tax	0.60	0.64	0.67	0.70	0.73	0.77	0.81	0.85	0.88	0.91	**6.12**
Total	1.02	1.08	1.10	1.18	1.25	1.30	1.35	1.40	1.44	1.49	**10.24**
Texas Taxes											
Franchise Tax	$0.08	$0.10	$0.10	$0.11	$0.11	$0.12	$0.12	$0.12	$0.12	$0.13	**$0.90**
Sales Tax	0.09	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.41	**1.17**
Property Tax	0.68	0.72	0.76	0.79	0.83	0.88	0.92	0.96	1.00	1.04	**6.95**
Total	0.86	0.93	0.98	1.02	1.06	1.12	1.16	1.21	1.25	1.57	**9.03**

Table D.8
Semiconductor Manufacturer - NAICS 3344
Calculated Tax Payments with All Incentives in All States

Tax Detail (in $ millions)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year NPV
Washington State Taxes											
B&O Tax	$0.71	$0.77	$0.81	$0.85	$0.88	$0.92	$0.95	$0.97	$1.00	$1.03	**$7.24**
Sales Tax	0.62	0.68	0.72	0.74	0.80	0.83	0.86	0.88	0.91	0.93	**6.48**
Property Tax	1.21	1.11	1.03	0.95	0.88	0.83	0.78	0.74	0.71	0.68	**7.49**
Total	2.54	2.57	2.55	2.54	2.56	2.58	2.59	2.60	2.62	2.64	**21.20**
California Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Sales Tax	0.75	0.79	0.84	0.88	0.93	1.04	1.07	1.10	1.12	1.14	**7.84**
Property Tax	1.89	1.74	1.60	1.48	1.38	1.29	1.22	1.16	1.11	1.06	**11.68**
Total	2.64	2.53	2.44	2.36	2.31	2.33	2.29	2.26	2.23	2.21	**19.53**
Illinois Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.17	$0.64	**$0.56**
Sales Tax	0.60	0.64	0.67	0.70	0.74	0.77	0.79	0.81	0.84	0.86	**6.03**
Property Tax	2.20	2.02	1.86	1.73	1.61	1.50	1.42	1.35	1.29	1.24	**13.61**
Total	2.80	2.67	2.54	2.42	2.35	2.27	2.22	2.17	2.30	2.74	**20.21**
Massachusetts Taxes											
Corporate Income Tax	$0.00	$0.00	$2.28	$3.08	$3.07	$2.74	$2.95	$3.14	$3.32	$3.49	**$18.91**
Sales Tax	0.54	0.57	0.60	0.63	0.67	0.75	0.77	0.78	0.80	0.82	**5.60**
Property Tax	2.43	2.23	2.06	1.91	1.77	1.66	1.57	1.50	1.43	1.37	**15.03**
Total	2.97	2.80	4.94	5.62	5.51	5.15	5.29	5.42	5.55	5.68	**39.54**
New York Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.22	$0.27	$0.45	$0.60	$0.75	$0.88	**$2.34**
Sales Tax	0.58	0.64	0.67	0.69	0.73	0.76	0.78	0.81	0.83	0.85	**5.96**
Property Tax	3.69	3.39	3.12	2.89	2.69	2.52	2.39	2.27	2.17	2.08	**22.81**
Total	4.27	4.03	3.79	3.58	3.64	3.55	3.62	3.68	3.74	3.81	**31.11**
North Carolina											
Corp. Income & Franchise Taxes	$0.15	$0.14	$0.13	$0.18	$0.45	$0.28	$0.36	$0.43	$0.49	$0.09	**$2.17**
Sales Tax	0.46	0.50	0.52	0.54	0.57	0.60	0.62	0.64	0.65	0.67	**4.69**
Property Tax	1.34	1.24	1.14	1.05	0.98	0.92	0.87	0.83	0.79	0.76	**8.31**
Total	1.95	1.87	1.79	1.78	2.00	1.80	1.85	1.89	1.94	1.51	**15.16**
Oregon Taxes											
Corporate Income Tax	$0.10	$0.10	$0.10	$0.10	$0.69	$0.36	$0.56	$0.73	$0.89	$1.04	**$3.56**
Property Tax	2.23	2.05	1.89	1.75	1.63	1.53	1.45	1.38	1.31	1.26	**13.82**
Total	2.33	2.15	1.99	1.85	2.32	1.88	2.00	2.10	2.20	2.29	**17.38**
Pennsylvania Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.41	$0.83	$1.03	$1.22	**$2.52**
Sales Tax	0.69	0.73	0.77	0.81	0.85	0.95	0.98	1.00	1.02	1.05	**7.17**
Property Tax	3.79	3.49	3.21	2.98	2.77	2.59	2.46	2.33	2.23	2.14	**23.47**
Total	4.48	4.21	3.98	3.78	3.62	3.55	3.84	4.16	4.29	4.40	**33.17**
Texas											
Franchise Tax	$0.68	$0.74	$0.78	$0.82	$0.85	$0.88	$0.91	$0.93	$0.96	$0.99	**$6.94**
Sales Tax	0.54	0.60	0.63	0.65	0.69	0.72	0.74	0.76	0.79	0.81	**5.64**
Property Tax	4.30	3.96	3.65	3.38	3.14	2.94	2.79	2.65	2.53	2.42	**26.64**
Total	5.53	5.30	5.06	4.85	4.68	4.54	4.44	4.35	4.28	4.22	**39.22**

Table D.9
Biotech, an integrated firm that manufactures and wholesales pharmaceuticals - NAICS 3254
Calculated Tax Payments with All Incentives in All States

Tax Detail (in $ millions)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year NPV
Washington State Taxes											
B&O Tax	$0.24	$0.27	$0.28	$0.29	$0.31	$0.32	$0.34	$0.36	$0.37	$0.39	**$2.56**
Sales Tax	0.34	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.54	0.56	**3.72**
Property Tax	0.34	0.33	0.35	0.36	0.37	0.39	0.40	0.41	0.43	0.45	**3.11**
Total	0.92	0.99	1.03	1.08	1.13	1.18	1.23	1.28	1.34	1.40	**9.40**
California Taxes											
Corporate Income Tax	$0.00	$0.35	$0.90	$0.67	$0.47	$0.64	$0.77	$0.90	$1.04	$1.19	**$5.45**
Sales Tax	0.52	0.78	0.82	0.85	0.89	0.93	0.97	1.01	1.05	1.10	**7.20**
Property Tax	0.53	0.52	0.54	0.56	0.58	0.60	0.62	0.65	0.67	0.69	**4.86**
Total	1.05	1.65	2.25	2.08	1.94	2.17	2.36	2.56	2.76	2.98	**17.51**
Illinois Taxes											
Corporate Income Tax	$0.03	$0.40	$1.00	$0.81	$0.62	$0.81	$0.95	$1.11	$1.27	$1.45	**$6.63**
Sales Tax	0.25	0.29	0.31	0.32	0.34	0.36	0.37	0.39	0.41	0.43	**2.82**
Property Tax	0.62	0.61	0.63	0.65	0.68	0.70	0.73	0.75	0.78	0.81	**5.66**
Total	0.90	1.29	1.94	1.78	1.63	1.86	2.05	2.25	2.46	2.69	**15.11**
Massachusetts Taxes											
Corporate Income Tax	$0.42	$2.28	$2.53	$2.27	$2.04	$2.16	$2.26	$2.37	$2.50	$2.65	**$17.33**
Sales Tax	0.37	0.56	0.58	0.61	0.64	0.66	0.69	0.72	0.75	0.78	**5.14**
Property Tax	0.68	0.67	0.69	0.72	0.75	0.77	0.80	0.83	0.86	0.89	**6.25**
Total	1.47	3.50	3.80	3.60	3.42	3.60	3.75	3.92	4.11	4.32	**28.72**
New York Taxes											
Corporate Income Tax	$0.26	$0.59	$0.88	$0.72	$0.57	$0.72	$0.83	$0.95	$1.08	$1.21	**$6.23**
Sales Tax	0.26	0.30	0.32	0.33	0.35	0.37	0.39	0.41	0.43	0.45	**2.93**
Property Tax	1.03	1.02	1.05	1.09	1.13	1.18	1.22	1.26	1.31	1.36	**9.49**
Total	1.55	1.90	2.26	2.15	2.06	2.26	2.44	2.62	2.82	3.02	**18.65**
North Carolina Taxes											
Corp. Income & Franchise Taxes	$0.23	$0.66	$0.95	$0.80	$0.65	$0.80	$0.91	$1.03	$1.16	$1.29	**$6.77**
Sales Tax	0.22	0.27	0.28	0.29	0.31	0.32	0.34	0.36	0.37	0.39	**2.55**
Property Tax	0.38	0.37	0.38	0.40	0.41	0.43	0.44	0.46	0.48	0.49	**3.46**
Total	0.82	1.29	1.61	1.49	1.38	1.55	1.70	1.85	2.01	2.18	**12.77**
Oregon Taxes											
Corporate Income Tax	$0.22	$0.51	$0.87	$0.71	$0.56	$0.72	$0.84	$0.97	$1.11	$1.25	**$6.18**
Property Tax	0.63	0.62	0.64	0.66	0.69	0.71	0.74	0.77	0.79	0.82	**5.75**
Total	0.85	1.12	1.51	1.38	1.25	1.43	1.58	1.74	1.90	2.08	**11.93**
Pennsylvania Taxes											
Corporate Income Tax	$0.03	$0.78	$1.20	$0.97	$0.76	$0.96	$1.12	$1.29	$1.46	$1.64	**$8.10**
Sales Tax	0.47	0.71	0.75	0.78	0.81	0.85	0.88	0.92	0.96	1.00	**6.58**
Property Tax	1.06	1.05	1.08	1.12	1.17	1.21	1.25	1.30	1.35	1.40	**9.76**
Total	1.57	2.54	3.03	2.87	2.74	3.02	3.26	3.51	3.77	4.04	**24.44**
Texas Taxes											
Franchise Tax	$0.37	$0.42	$0.44	$0.47	$0.49	$0.51	$0.54	$0.57	$0.59	$0.62	**$4.07**
Sales Tax	0.24	0.27	0.29	0.31	0.32	0.34	0.36	0.38	0.40	0.42	**2.69**
Property Tax	1.21	1.19	1.23	1.28	1.32	1.37	1.42	1.47	1.53	1.58	**11.08**
Total	1.82	1.88	1.96	2.05	2.13	2.23	2.32	2.42	2.52	2.63	**17.85**

Table D.10
Software, originators of software - NAICS 51120
Calculated Tax Payments with All Incentives in All States

Tax Detail (in $ millions)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year NPV
Washington State Taxes											
B&O Tax	$0.03	$0.04	$0.04	$0.05	$0.05	$0.06	$0.06	$0.06	$0.07	$0.07	**$0.42**
Sales Tax	0.11	0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.17	0.18	**1.13**
Property Tax	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	**0.43**
Total	0.18	0.18	0.20	0.22	0.23	0.26	0.27	0.29	0.31	0.32	**1.98**
California Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.03	$0.12	$0.14	$0.15	**$0.32**
Sales Tax	0.14	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21	0.22	**1.39**
Property Tax	0.06	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.11	**0.70**
Total	0.21	0.20	0.22	0.23	0.24	0.27	0.31	0.42	0.45	0.48	**2.41**
Illinois Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.01	$0.09	$0.11	$0.13	**$0.25**
Sales Tax	0.11	0.10	0.11	0.12	0.13	0.13	0.14	0.15	0.16	0.17	**1.05**
Property Tax	0.09	0.10	0.11	0.11	0.12	0.13	0.13	0.14	0.15	0.15	**0.99**
Total	0.19	0.20	0.22	0.23	0.24	0.26	0.28	0.38	0.41	0.45	**2.29**
Massachusetts Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Sales Tax	0.10	0.09	0.10	0.11	0.11	0.13	0.13	0.14	0.15	0.16	**0.99**
Property Tax	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	**1.33**
Total	0.22	0.23	0.24	0.26	0.27	0.30	0.31	0.33	0.35	0.36	**2.32**
New York Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.06	$0.10	$0.12	$0.13	$0.15	**$0.42**
Sales Tax	0.10	0.10	0.10	0.11	0.12	0.14	0.15	0.15	0.16	0.17	**1.05**
Property Tax	0.16	0.19	0.20	0.21	0.22	0.23	0.24	0.26	0.27	0.28	**1.83**
Total	0.26	0.28	0.30	0.32	0.34	0.44	0.49	0.53	0.57	0.61	**3.31**
North Carolina Taxes											
Corp. Income & Franchise Taxes	$0.00	$0.00	$0.00	$0.01	$0.03	$0.06	$0.09	$0.11	$0.13	$0.14	**$0.44**
Sales Tax	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.08	0.09	**0.49**
Property Tax	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	**0.50**
Total	0.09	0.10	0.11	0.11	0.15	0.19	0.23	0.26	0.28	0.31	**1.44**
Oregon Taxes											
Corporate Income Tax	$0.00	$0.01	$0.01	$0.02	$0.05	$0.12	$0.14	$0.16	$0.17	$0.19	**$0.65**
Property Tax	0.06	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11	**0.72**
Total	0.07	0.08	0.09	0.10	0.13	0.21	0.23	0.26	0.28	0.30	**1.37**
Pennsylvania Taxes											
Corporate Income Tax	$0.00	$0.00	$0.00	$0.00	$0.00	$0.06	$0.14	$0.17	$0.19	$0.21	**$0.56**
Sales Tax	0.13	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	**1.27**
Property Tax	0.17	0.19	0.20	0.22	0.23	0.24	0.25	0.26	0.28	0.29	**1.88**
Total	0.30	0.31	0.33	0.35	0.37	0.46	0.56	0.61	0.66	0.70	**3.71**
Texas Taxes											
Franchise Tax	$0.04	$0.04	$0.05	$0.06	$0.06	$0.07	$0.07	$0.08	$0.08	$0.09	**$0.51**
Sales Tax	0.09	0.09	0.10	0.10	0.11	0.14	0.14	0.15	0.16	0.17	**1.01**
Property Tax	0.10	0.12	0.13	0.13	0.14	0.15	0.16	0.17	0.17	0.18	**1.18**
Total	0.24	0.25	0.27	0.30	0.32	0.35	0.37	0.39	0.42	0.44	**2.70**

Appendix E: State Tax Incentives

Types of Incentives

This study found incentives specific to R&D in almost all states.

The incentive types include:

1. Corporate Income / Franchise Tax
2. Personal Income Tax
3. Fiduciary Income Tax
4. Business Taxes
5. Direct Financing
6. Sales and Use Tax
7. Transaction Privilege Tax
8. Property Tax
9. Training/Other Assistance
10. Withholding Tax
11. Financial Institution Excise Tax
12. Insurance Tax
13. Adjusted Gross Income Tax
14. Corporate License Tax
15. Gross Receipts Tax
16. Public Utilities Excise Tax
17. Dealers in Intangibles Tax
18. Commercial Activity Tax
19. Corporate Excise Tax
20. Capital Stock and Franchise Tax
21. Business and Occupation Tax

Depending on the particular incentive, states identified a specific industry or made the incentive available to all or most industries.

Incentives by State

The following table provides the state, incentive name, industry and tax incentive code included with the incentive type listed above.

State	Incentive	Industry	Incentive Code
Alabama	Port Authority Property Investment Tax Credit (State Docks Capital Credit)	All/Most Industries	1,2,8
Alabama	Certified Capital Company Program (CAPCO)	Manufacturing	5
Alabama	Construction-Related Transaction Taxes Abatement	Manufacturing	6,8
Alabama	Tariff Credit	Warehousing/Distribution	1,2,11
Arizona	Solar Liquid Fuel Credit	All/Most Industries	1,2
Arizona	Research and Development Credit	All/Most Industries	1,2
Arizona	Clean Room Exemptions	All/Most Industries	7
Arizona	Research and Development Machinery and Equipment Exemption	All/Most Industries	7
Arizona	Mining Exemptions	Mining	7

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Arkansas	University-Based Research Credits	All/Most Industries	1
Arkansas	In-House Research Credit	All/Most Industries	1
Arkansas	Donations or Sales of Equipment to Educational Institutions Credit	All/Most Industries	1,2
Arkansas	In-House Research in an Area of Strategic Value Credit	All/Most Industries	1
Arkansas	In-House Research by a Targeted Business Credit	All/Most Industries	1
Arkansas	Biotechnology Research Credit	Biotechnology	1,2
Arkansas	Biotechnology Research Partnership Credit	Biotechnology	1,2
Arkansas	Arkansas Science and Technology Authority (ASTA) Fund	Technology	5
Arkansas	Research Under Arkansas Science and Technology Authority (ASTA) Programs Credit	Technology	1
California	Research and Development Credit	All/Most Industries	1,2
California	California Alternative Energy and Advanced Transportation Financing Authority Green Manufacturing Exclusion	Energy Systems/Facilities	6
Colorado	Aircraft Manufacturers Credit	Aerospace	1
Colorado	Biotechnology Sales and Use Tax Refund	Biotechnology	6
Connecticut	Non-incremental Research and Development Expenditures Credit	All/Most Industries	1
Connecticut	Incremental Research and Experimental Expenditures Credit	All/Most Industries	1
Connecticut	Research and Development Credit for Grants to Institutions of Higher Education	All/Most Industries	1
Connecticut	Aircraft Exemptions	Aerospace	6
Connecticut	Connecticut Innovations Bioscience Facilities Fund	Biotechnology	5
Connecticut	Manufacturing Machinery and Equipment Tax Phase-Out	Biotechnology	8
Connecticut	Machinery and Equipment Exemption	Biotechnology	8
Delaware	Research and Development Credit	All/Most Industries	1
Delaware	New Jobs Creation Credit	Aerospace	1

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Florida	Exemption for Machinery/Equipment and Labor Used in Research and Development	All/Most Industries	6
Florida	Business Technology Commercialization	Manufacturing	9
Florida	Research and Development Credit	Other Industries	1
Georgia	Research Tax Credit	All/Most Industries	1
Hawaii	Small Business Innovation Research Grant Program	All/Most Industries	5
Hawaii	Expenditures on Research Activities Credit	All/Most Industries	1,2
Hawaii	High Technology Business Investment Credit	Biotechnology	1,2,11,12
Hawaii	Hawaii Technology Development Venture (HTDV)	Defense Contractors	5
Idaho	Increased Research Activities Tax Credit	All/Most Industries	1,2
Idaho	Manufacturing Exemptions	Agriculture	6
Idaho	Tech Help	Manufacturing	9
Idaho	Research and Development Exemption	Manufacturing	6
Illinois	Economic Development for a Growing Economy (EDGE) Credit	All/Most Industries	1
Illinois	Research and Development Expenditures Credit	All/Most Industries	1
Illinois	Manufacturer's Purchase Credit	Manufacturing	6
Illinois	Academic or Research Institute Abatement	Other Industries	8
Indiana	SBIR/STTR Phase I Matching Program	All/Most Industries	5
Indiana	Research Expense Credit	All/Most Industries	13
Indiana	Research and Development Equipment Refund or Exemption	All/Most Industries	6
Iowa	Research Credits	All/Most Industries	1
Iowa	Iowa Industrial New Jobs Training (260E)	Manufacturing	9
Iowa	Iowa Jobs Training Program (260F)	Manufacturing	9
Iowa	Web Search Portal Equipment Exemption	Technology	6
Kansas	Research and Development Credit	All/Most Industries	1
Kansas	Economic Revitalization and Reinvestment Bonds	All/Most Industries	5
Kansas	Bioscience Net Operating Loss (NOL) Transfer Program	Biotechnology	1
Kentucky	Research Facilities Credit	All/Most Industries	1,2

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Louisiana	Technology Commercialization Credit	All/Most Industries	1,2,3
Louisiana	Research and Development Credit	All/Most Industries	1,2,3
Louisiana	Dedicated Research Investment Fund Contribution Credit	All/Most Industries	1,2,3
Maine	Research Expense Credit	All/Most Industries	1
Maine	Super Credit for Increased Research and Development	All/Most Industries	1
Maine	Machinery and Equipment Exemption	Manufacturing	6
Maryland	Manufacturing Property Exemption	All/Most Industries	8
Maryland	Research and Development Credits	All/Most Industries	1,2
Maryland	Maryland Industrial Partnership Program	All/Most Industries	5
Maryland	Research and Development Exemption	All/Most Industries	6
Maryland	InvestMaryland	Biotechnology	5
Maryland	InvestMaryland Challenge	Biotechnology	5
Maryland	Cellulosic Ethanol Technology Research and Development Credit	Biotechnology	1,2
Massachusetts	Research and Development Credit	All/Most Industries	19
Massachusetts	Research and Development Exemption	All/Most Industries	6
Massachusetts	Life Sciences Incentive Tax Credits	All/Most Industries	1,2,6
Massachusetts	Medical Device Credit	Biotechnology	1,2
Massachusetts	Massachusetts and Lombardia Biotechnology and Medical Research Agreement	Biotechnology	5,9
Massachusetts	John Adams Innovation Institute Fund Awards	Non-Profit	5
Michigan	Research and Development Contribution Credit	All/Most Industries	4
Michigan	Start-Up Business Exemption	All/Most Industries	8
Michigan	Start-Up Business Credit	All/Most Industries	4
Michigan	Research and Development Credit	All/Most Industries	4
Michigan	Pharmaceutical Research Expense Credit (Expired)	Biotechnology	4
Michigan	Engineering for Automotive Battery Technologies Credit	Energy Systems/Facilities	4
Michigan	Alternative Energy Business Activity Credit	Energy Systems/Facilities	4
Michigan	Alternative Energy Personal Property Exemption	Energy Systems/Facilities	8
Michigan	Photovoltaic Energy Manufacturer Credit	Energy Systems/Facilities	4
Michigan	Vehicle Engineering Credit	Manufacturing	4
Michigan	Industrial Processing Exemption	Manufacturing	6

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Minnesota	Research and Development Credit	All/Most Industries	1
Minnesota	Industrial Production Exemption	All/Most Industries	6
Minnesota	Bioscience Business Development Public Infrastructure Grant Program	Biotechnology	5
Minnesota	Minnesota SBIR/STTR Assistance Program	Biotechnology	9
Minnesota	Science and Technology Fund	Technology	5
Mississippi	Research and Development Skills New Jobs Credit	All/Most Industries	1
Mississippi	Clean Energy and Aerospace Business Enterprises Exemption	Aerospace	1
Missouri	Research and Development Exemption	All/Most Industries	6
Missouri	Business Modernization and Technology (Seed Capital) Credit	All/Most Industries	1,2,11
Missouri	MoFast Initiative	Biotechnology	9
Montana	Credit for Increasing Research Activities	All/Most Industries	14
Montana	Small Business Innovation Research and Small Business Technology Transfer Technical Assistance Program	All/Most Industries	9
Montana	Reduced Rate for Research and Development Property	All/Most Industries	8
Montana	Clean Advanced Coal Research and Development Equipment Abatement	Mining	8
Nebraska	Nebraska Advantage Rural Development Act Tax Credit	All/Most Industries	1,2,6
Nebraska	Nebraska Advantage Act Tax Credit and Refund	All/Most Industries	1,2,6
Nebraska	Nebraska Advantage Research and Development Expenditures Tax Credit	All/Most Industries	1,2,6
Nebraska	Biodiesel Facility Credit	All/Most Industries	1,2
New Hampshire	Granite State Technology Innovation Grant	All/Most Industries	5
New Hampshire	Research and Development Credit	All/Most Industries	4
New Jersey	Research and Development Credit	All/Most Industries	4
New Jersey	Research and Development Exemption	All/Most Industries	6
New Jersey	Small Business Innovation Research Bridge Grant Program	Biotechnology	5
New Jersey	Technology Tax Credit Certificate Program	Technology	1
New Mexico	Research and Development Small Business Credit	All/Most Industries	15,10
New Mexico	Research and Development Personal Property Exemption	All/Most Industries	6

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
New York	Excelsior Jobs Program	Agriculture	1,2
New York	Economic Transformation and Facility Redevelopment Program	Agriculture	1,2,12
New York	Qualified Emerging Technology Company (QETC) Facilities, Operations, and Training Credit	Technology	1
North Carolina	Research and Development Credit	All/Most Industries	1,2
North Carolina	Analytical Services Refund	All/Most Industries	6
North Carolina	One North Carolina SBIR/SBTT Incentive Funding Program	All/Most Industries	5
North Carolina	One North Carolina SBIR/SBTT Phase I Matching Funds Program	All/Most Industries	5
North Carolina	Reduced Rate for Qualified Research and Development Purchases	All/Most Industries	6
North Carolina	Small Business Research Loans	Biotechnology	5
North Carolina	Reduced Rate for Qualified Purchases by Software Publishers	Other Industries	6
North Dakota	North Dakota Development Fund	All/Most Industries	5
North Dakota	Investment in Venture Capital Corporations Credit	All/Most Industries	1,2
North Dakota	Seed Capital Investment Credit	All/Most Industries	1,2
North Dakota	Credit for Research and Experimental Expenditures	All/Most Industries	1
North Dakota	Basic and Applied Research Grants	Agriculture	5
North Dakota	Marketing and Utilization Grants	Agriculture	5
North Dakota	Manufacturing and Recycling Equipment Exemption	Agriculture	6
Ohio	Property and Payroll Factor Exclusions for Qualified Research	All/Most Industries	1
Ohio	Technology Investment Credit	All/Most Industries	1,2,16,17
Ohio	Qualified Research Expense Credit	All/Most Industries	1,18
Ohio	Research and Development Investment Loan Fund	All/Most Industries	5
Ohio	Research and Development Exemption	All/Most Industries	6
Ohio	High Tech Company Net Worth Exclusion	Biotechnology	1
Ohio	Qualified Research and Development Loan Credit	Technology	1,18,2,16,17
Oklahoma	New Jobs in Computer, Research, and Development Businesses Credit	Technology	1,2
Oklahoma	Exemption for Computer Services and Data Processing or Research Development Facilities	Technology	6

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Oregon	Qualified Research Activities Credit	All/Most Industries	19,1
Oregon	Alternative Qualified Research Activities Credit	All/Most Industries	19,1
Oregon	Industrial Development Revenue Bonds	Manufacturing	5
Pennsylvania	Manufacturing Exemption	All/Most Industries	6
Pennsylvania	Alternative Energy Production Tax Credit	All/Most Industries	1,2,20
Pennsylvania	Research and Development Credit	All/Most Industries	1,20,2
Pennsylvania	Ben Franklin Technology Development Authority University Research Commercialization Grant Funding	Biotechnology	5
Pennsylvania	Second Stage Loan Program	Biotechnology	5
Pennsylvania	Ben Franklin Technology Partners — Challenge Grant	Biotechnology	5
Pennsylvania	Technology Collaborative	Technology	5,9
Rhode Island	Qualified Research Expenses Credit	All/Most Industries	1,12
Rhode Island	Research and Development Exemption	All/Most Industries	6
Rhode Island	Elective Deduction for Research & Development Facilities	All/Most Industries	1,2
Rhode Island	Research and Development Property Credit	All/Most Industries	1,12
South Carolina	Research and Development Facilities Exemption	All/Most Industries	8
South Carolina	Research and Development Credit	All/Most Industries	1
South Carolina	Research and Development Machinery Exemption	All/Most Industries	6
South Carolina	Hydrogen Infrastructure Development Credit	All/Most Industries	1
South Carolina	Ethanol and Biodiesel Research and Development Credit	Biotechnology	1
South Carolina	Natural Hazard Research and Testing Facility Exemption	Contracting/Housing	6
South Dakota	Small Business Innovative Research	Health Care	5
South Dakota	Jobs Credit	All/Most Industries	1,19
Texas	Emerging Technology Fund	All/Most Industries	5
Texas	Credit for Research and Development Activities	All/Most Industries	1
Texas	Research and Development Exemption	All/Most Industries	6
Utah	Research Machinery and Equipment Credit	All/Most Industries	1,2
Utah	Increasing Research Activities Credit	All/Most Industries	1,2
Utah	Semiconductor Fabricating and Processing Materials Exemptions	Manufacturing	6

Appendix E: State Tax Incentives

State	Incentive	Industry	Incentive Code
Vermont	Agricultural, Commercial, and Industrial Research Exemption	All/Most Industries	6
Vermont	Research and Development Credit	All/Most Industries	1,2
Virginia	Research and Development Expenses Credit	All/Most Industries	1,2
Virginia	Basic Research and Development Exemption	All/Most Industries	6
Virginia	Economic Development Access Program	All/Most Industries	5
Virginia	Semiconductors/Semiconductor Wafer Exemption	Manufacturing	6
Virginia	High-Technology Research Exemption	Technology	6
Washington	Washington Economic Development Finance Authority	All/Most Industries	5
Washington	Credit for Aerospace Manufacturer Product Development Expenditures	Aerospace	21
Washington	High Technology Deferral/Waiver	Biotechnology	6
Washington	High Technology Credit	Biotechnology	21
Washington	Deferral/Waiver on Construction of Cold Storage and Certain Food Manufacturing/Processing Facilities	Manufacturing	6
Washington	Manufacturing Machinery and Equipment Exemption	Manufacturing	6
West Virginia	Research and Commercialization Program	All/Most Industries	5
West Virginia	Strategic Research and Development Credit	All/Most Industries	1,2
West Virginia	Research and Development Exemption	All/Most Industries	6
West Virginia	Research Credit-Use of Patents	Manufacturing	1,2
West Virginia	High-Tech 2000 Research Parks and Zones Credits	Manufacturing	1
West Virginia	Research Credit-Developing Patents	Manufacturing	1,2
Wisconsin	Super Research and Development Credit	All/Most Industries	1
Wisconsin	Qualified Expenditures Research Facilities Credit	All/Most Industries	1
Wisconsin	Technology Development Fund (TDF)	All/Most Industries	5
Wisconsin	Research Qualified Expenditures Credit	All/Most Industries	1
Wisconsin	Early Stage Seed Investment Credit	Agriculture	1,2
Wisconsin	Manufacturing and Biotechnology Research Exemption	Biotechnology	6
Wisconsin	Technology Assistance Grant	Technology	5
Wyoming	Wyoming SBIR/STTR Initiative (WSSI)	All/Most Industries	5,9
Wyoming	Wyoming Research Products Center	All/Most Industries	9

Appendix E: State Tax Incentives

Links to State Websites

Click on a link below to find more information about incentives available in each state and the District of Columbia.

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming