Washington Research Council

Policy Brief

February 13, 2014 PB 14-06

# Supporting Research and Development with Responsible Tax Policy

**Briefly**

*Two tax incentive programs that stimulate R&D activities in the state are scheduled to expire at the end of 2014. The costs of these programs are modest. Most of the states we compete against for high tech jobs offer such incentives. They should be extended.*

The Washington Research Council has written extensively on business taxation and tax policies, including tax incentives. Most recently, we published *Toward a Thoughtful Review of Tax Policies*. Previously, we issued a comprehensive assessment of "tax preferences" (a term defined in statute) in *Leveling the Playing Field with Tax Preferences*.

This brief continues our examination, focusing on research and development (R&D) incentives. As we discuss below, these programs are common, demonstrated to increase R&D activity, and supported by leading economists studying the technology sector.

## Overview

In 1994, the Legislature created two tax incentive programs intended to encourage R&D activities in the fields of advanced computing, advanced materials, biotechnology, electronic device technology, and environmental technology (E2SSB 6347). For the purposes of these incentives, R&D is defined as "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."

The first of these programs is a business and occupation (B&O) tax credit for R&D spending in the five fields. To be eligible for the credit, the taxpayer's qualified R&D spending must exceed 0.92 percent of revenues subject to the B&O tax. The amount of the credit is generally equal to 1.5 percent of the amount by which qualified R&D spending exceeds 0.92 percent of taxable revenues. (The exception is the case where the R&D is conducted under contract for another party, in which case the amount of the credit is equal to 1.5 percent of the amount by which 80 percent of the amount received under the contract exceeds 0.92 percent of taxable revenue. The credit can be assigned to the contracting party.) The amount of credit that a taxpayer may take in any year is capped at $2 million.

The second program created in 1994 is a deferral of state and local sales taxes on the construction of R&D and pilot scale manufacturing facilities in the five fields and on the purchase of related machinery and equipment. Projects must be approved by the Department of Revenue (DOR) before the start of construction or the purchase of equipment. The deferred taxes are waived (so that the deferral becomes an exemption) over an eight-year period following the completion of the project, so long as the property continues to be used for the intended purposes.

Both programs require affected taxpayers to submit annual reports to DOR under RCW 82.32.585.

Between 1995 and 2012, 2,259 taxpayers used the R&D credit, while 383 taxpayers used the sales tax deferral. (These

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totals include 212 taxpayers who used both programs.) Over this 18-year period, the value of B&O credits taken was $434 million ($24 million per year, on average), the amount of state sales taxes exempted or deferred was $510 million ($28 million per year), and the amount of local sales taxes exempted was $182 million ($10 million per year).

Initially the B&O credit was scheduled to expire at the end of 2004, and the sales tax deferral/exemption program was to be closed to new projects on June 30, 2004. In 2004 the Legislature extended both programs through the end of 2014.

To continue these programs, lawmakers must act this year.

## Proposals to Extend the Incentives

Two bills to extend the R&D incentives (SB 6267 and SB 6430) have had hearings in the Senate this session:

SB 6267 would extend the current credit and sales tax deferral for one year, until January 1, 2016. The bill creates a "high-technology research and development workgroup," which is to develop recommendations for the Legislature on (1) ways to improve the coordination of R&D spending with higher education institutions and (2) the design, size, and scope of R&D tax incentives after January 1, 2006. These recommended changes to the design, size and scope of the incentives must provide additional state revenue to be used to increase funding for science, technology, engineering and math programs at higher education institutions.

SB 6430 would extend the two incentives in current form until January 1, 2040.

## Why Provide R&D Incentives?

The economic argument in favor of R&D incentives rests on the spillover of knowledge between nearby workplaces. Enrico Moretti, an economist noted for his work in the evolution of technology clusters, explains,

> The existence of significant knowledge spillovers means that the creators of new ideas are not always fully compensated for their efforts, as some of the benefit of their research inevitably accrues to others. . . .
>
> The most important kind [of knowledge spillover] flows between private companies. Innovative companies that invest in research appropriate just some of the benefits of their efforts. . . .
>
> In one of the most rigorous studies to date, two economists—Nick Bloom of Stanford and John Van Reenen of the London School of Economics—followed thousands of firms between 1981 and 2001 and found that the spillovers were so large that R& D investment of one firm raised not only the stock price of that firm but also the stock price of other firms in the same industry . . . A significant part of the spillover is local, because it occurs between firms that are geographically close. . . .
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> The problem is that the market provides less investment in innovation than is socially desirable, because the return on such investments cannot be fully captured by those who pay for it. The only way to correct for this market failure is for the government to step in and compensate those who invest in R& D for the external benefits that they generate. This is the main reason that the United States government, as well as governments in most industrialized countries, subsidizes R& D through tax breaks. . . .
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> The problem is that the difference between private and social return on innovation is much larger than the current subsidies. . . . The lessons for economic policy are clear: the current U.S. tax credit for corporate spending on R&D is far smaller than it should be. . . . Because the benefit of spillovers is in part local—helping some communities but not others—the efficient distribution of cost is one in which state and local governments also contribute to the subsidy. (Moretti 217-220)

Knowledge spillovers create feedback loops that magnify the efficacy of R&D incentives as economic development tools. The tax incentives directly make a place a more attractive place for a company to do R&D; other companies drawn to the place further increase its attractiveness.

As a result, the majority of states provide tax incentives for R&D. A study conducted in 2012 by the Joint Legislative Audit and Review Committee (JLARC) found that 44 states offered some form of R&D tax credit for operating expenses. Kentucky, Nevada, Oklahoma, South Dakota, Wyoming and Texas were the only states found not to offer credits—and Texas reinstated an R&D credit in 2013. JLARC also found that 32 states had sales and use tax exemptions for R&D machinery and equipment and six states had sales and use tax exemptions for R&D facilities (JLARC 2013). In 2003California added such incentives.

## R&D Incentives Are Effective

Several studies have demonstrated that R&D incentives are effective in increasing the amount of R&D in a state. For example a study by economist Daniel Wilson of the Federal Reserve Bank of San Francisco found that a 10 percent decrease in the cost of doing R&D in a state increases the amount of R&D done in the state by 25 percent (Wilson 2008).

A more recent paper by Moretti and Wilson looks specifically at the biotechnology sector. The statistical models they use include both a variable that measures the effect of R&D tax credits on the cost of conducting R&D in the state and an indicator variable for the presence of other biotech-specific subsidies. The key outcome measure they use is the number of star scientists (defined by the number of patents received). Moretti and Wilson find that reducing the cost of doing R&D by 10 percent increases the number of star scientists in a state by 22 percent. Biotech-specific subsidies increases the number of star scientists by 15 percent (Moretti and Wilson 2013).

Opponents of extending the incentives cite a flawed study done for JLARC by economists from the Upjohn Institute as showing that Washington's R&D incentives provide little bang for the buck. The Upjohn analysis focused only on the R&D credit and said nothing about the value of the sales tax deferral. Upjohn estimated that in 2009 484 jobs in the state resulted from the credit (JLARC 2013). The Upjohn analysis, however, fails to account for the feedback loop through which knowledge spillovers from the increases in R&D directly due to the credits provide further incentives to conduct R&D in the state. Thus the Upjohn estimate understates the full impact of the credits on employment in the state.

## Discussion

From 1990 to 2011, the tech sector—which is the major beneficiary of the R&D tax incentives—was responsible for 62.9 percent of the state's job growth, 54.7 percent of employee compensation growth and 33 percent of personal income growth. In our 2012 profile of the sector we noted:

> While Washington's incentive programs are generally consistent with good tax policy, "good tax policy" does not always guide the actions of our competition. States focusing on long-term cluster strategies are often willing to forego tax revenues far in excess of expected short-term returns. And businesses will respond. Location decisions are driven by many factors, but profit-and-loss calculations are always important. (WRC 2010)

The state should retain sound tax policy, maintain our competitive position, and extend the R&D credit and sales tax deferral programs. Because the decision to locate research activities in the state typically represents a long-term commitment on the part of a firm, a multi-year extension of the programs would have a much greater impact than a one-year extension.

## References

Joint Legislative Audit & Review Committee (JLARC). 2013. "2012 Tax Preference Performance Reviews: Proposed Final Report." January 23.

Moretti, Enrico. 2012. The New Geography of Jobs. Houghton Mifflin Harcourt.

Moretti, Enrico and Daniel Wilson. 2013. State Incentives for Innovation, Star Scientists and Jobs, Evidence from Biotech. National Bureau of Economic Research, Working Paper 19294. August.

Washington Research Council. 2012. Washington's Economy Depends on Vibrant Tech Sector. Economic Profile. October 25.

———. 2013. Leveling the Playing Field with Tax Preferences. PB-13–02. February 13.

———. 2014. Toward a Thoughtful Review of Tax Policies. PB-14–03. January 17.

Wilson, Daniel. 2008. Beggar thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits. Federal Reserve Bank of San Francisco. January.