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# State R&D Tax Credit Programs

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Over the past thirty years, state research and development (R&D) tax credits have become one of the most common state tools to boost their local technology economy with the first state R&D tax credits introduced in the early 1980s.[1] Few studies, however, have attempted to provide a comprehensive evaluation of their effectiveness. In this report, SSTI provides an overview of the literature on state R&D credits, five case studies of state R&D tax credit programs, and a list of select R&D tax credits. The case studies include both a description of the program as well as economic impact evaluations.

State business tax-based R&D incentives typically follow a general model. Companies pay corporate income or franchise taxes to states based on their federal taxable income and the income generated by transactions in a particular state. States often provide tax credits that may be taken against their state income or franchise tax equal to a percentage of their qualified R&D expenses over a certain base amount. The percentage varies from state-to-state, as does the formula for determining the base amount. Some states also adopt a definition of qualified R&D expenses that differs from then general model, which has been based on federal R&D tax credits.

In light of the literature and evaluations available on state R&D tax credits, it would seem that these credits can be an effective tool in a state's economic development strategy, but only when designed with a particular state's economy in mind.

While the exact impacts can be mixed, recent research suggests that state R&D credits are effective in inducing new in-state research and related employment. This is true across industry sectors and in both large and small companies

## Research literature

In this section, we have selected several research articles published over the last 10 years that examine the economic impacts of R&D tax credits at both the state and national level. These studies focus on several economic indicators with a specific focus on the tax credit's impact on research activity. The findings indicate that R&D tax credits have a positive relationship with new in-state research activity. A 2014 research study from the Federal Reserve found that there is upwards of 3.8 percent increase in R&D activity for every one percent increase in state R&D incentives funding.[2]

A December 2016 literature review by the Iowa Department of Revenue finds that evidence supporting the effectiveness of state incentives for research and development is mixed.[3] A 2014 study, for example, finds that state R&D tax incentives helped raise the number of highly productive researchers in a state by 22 percent due to the credit helping lower the cost of

[1] http://ssti.org/blog/how-effective-are-state-rd-tax-credits
[2] https://www.federalreserve.gov/econresdata/feds/2014/files/2014101pap.pdf
[3] https://tax.iowa.gov/sites/files/idr/RAC%20Evaluation%20Study%202016.pdf

capital.[4] Similarly, an analysis of state R&D tax credits from 2009 found that tax incentives were effective in increasing in-state R&D, and that this increase was mostly due to attracting R&D from other states, not because of an overall national increase in research expenditures.[5] A 2008 study found that R&D tax credits did have a positive relationship with research activity, with regard to the absolute and per-capita number of high-technology establishments in a state.[6] A December 2015 study by the Milken Institute found that theoretically doubling the California R&D tax credit from 15 percent to 30 percent – $700 million in additional R&D tax credits – would stimulate between $4.5 billion and $6.8 billion in additional R&D activity in California, with a multiplier between 6.4 and 9.7.[7]

A 2008 study of the economic impacts of a state R&D tax credit supports the views that R&D tax credit policy can have a positive impact on a state's R&D investments and employment. These results include a1 percent increase in R&D tax credit generates, on average, about 1.8  percent additional R&D investment. They also projected a 0.3 percent increase in R&D employment in New Hampshire with a $1 million total tax credit cap.

In addition to those findings, the research found that states with a R&D tax credit perform better in terms of attracting and retaining R&D activities in both the short and long terms. The study also concludes that states without R&D tax credit incentives lose R&D investments to states that provide such an inventive. Other findings include:

- Rhode Island experienced a very high (over 16 percent) annual increase in R&D expenditure between 1993 and 2004 with help from its R&D tax credit; and,

- Between 2003 and 2004, R&D expenditures grew, on average, 5 percent in states with a R&D tax credit compared to a decline of 7 percent in R&D expenditures in states without a R&D tax credit.[8]

## State R&D tax credits case studies

### Florida

*Description:* Established in 2012, the Florida Research and Development Tax Credit is valued at 10 percent of qualified research expenditures above the average of the previous year of qualified research performed in the state. The credit is limited to 50 percent of the tax liability after all other credits. Additionally, the tax credit is limited to corporations in the state's identified target industries. Although the program cap was $23 million in 2016, the cap has been set at $9 million in 2017 and subsequent years, allocated on a first come first serve basis. For

[4] http://research.upjohn.org/cgi/viewcontent.cgi?article=1220&context=up_workingpapers
[5] http://www.mitpressjournals.org/doi/abs/10.1162/rest.91.2.431
[6] http://journals.sagepub.com/doi/abs/10.1177/0891242408316728
[7] http://www.milkeninstitute.org/publications/view/753
[8] http://spaef.org/article/63/Are-Research-and-Development-Tax-Credits-Effective-The-Economic-Impacts-of-a-R&D-Tax-Credit-in-New-Hampshire

businesses younger than four years old, the tax credit is reduced by 25 percent for each taxable year the business did not exist. There are also limits on taxpayer credit amounts for these young businesses. The Florida R&D Tax Credit program has no sunset date.[9]

*Analysis:* In 2014, 20 tax credit recipients received $9 million in funding, with 59 applications denied due to the first-come, first-serve nature of the program, according to the Florida Department of Revenue analysis. For 2015 expenditures, when the cap was raised to $23 million, 118 applicants were approved, with just 13 denied. In an attempt to offer the credit to more corporations, 137 applicants received a total of $9 million in calendar year 2016, with each applicant receiving a credit equal to roughly 16.7 percent of their original request.[10]

## Iowa

*Description:* The Iowa Research Activities Tax Credit, developed in 1985, provides a 6.5 percent tax credit on incremental qualified research expenditures conducted in the state, or a 4.55 percent credit based on an "alternative simplified method." Although tax credits are refundable, there are no limits on taxpayer credit amounts, no statewide program cap, no sunset dates, and no credit carry forward options.[11]

*Analysis:* A 2016 evaluation of the Research Activities Tax Credit (RAC) by the Iowa Department of Revenue estimates that, from 2010 to 2014, tax credit recipients have likely expended roughly $1.68 on qualified research per tax credit dollar. In other words, each dollar foregone as tax revenue by the State of Iowa has resulted in an estimated $1.68 in spending on qualified research conducted in the state. During this period, RAC expenditures totaled $230.1 million, suggesting that marginal R&D spending increased between $258.0 million and $516.0 million – between about 3 and 6 percent of total R&D spending – from 2010 to 2014.[12]

## Maryland

*Description:* Established in 2000, the Maryland Research and Development Tax Credit (R&D Tax Credit) was enacted to encourage businesses to maintain and increase R&D expenditures in the state. It is comprised of two credits: the Basic R&D Tax Credit and the Growth R&D Tax Credit. To qualify for the Growth R&D credit, the company's R&D expenditures must exceed its average expenses over the last four years. The tax credit is limited on an annual basis.[13]

*Analysis:* An evaluation of the program for FY 2015 found that the businesses applying for the Maryland R&D tax credit incurred $1.15 billion in research and development expenses in the tax year ending 2013. Of the 200 businesses that received certification, 127increased their R&D expenses in 2013 over their average R&D expenses from the previous four years. The program is

[9] https://taxapps.floridarevenue.com/CorporateTaxCreditRD/Instructions.aspx
[10] http://floridarevenue.com/dor/taxes/documents/rd_credit.pdf
[11] https://www.iowaeconomicdevelopment.com/Research
[12] https://tax.iowa.gov/sites/files/idr/RAC%20Evaluation%20Study%202016.pdf
[13] http://commerce.maryland.gov/fund/programs-for-businesses/research-and-development-tax-credit

estimated to have created 412 direct jobs, or 3 percent of the 15,076 Maryland employees engaged in R&D reported by the recipient companies.[14]

## Minnesota

*Description:* Established in 1981, the Credit for Increasing Research Activities (R&D Credit) is valued at 10 percent of qualified expenses for research conducted in the state up to $2 million, and 2.5 percent for expenses larger than $2 million. This credit cannot be applied against the alternative minimum tax, though it does apply for regular corporate franchise taxes and individual income taxes. There is no sunset date, no limit on taxpayer credit amounts, and no statewide program cap. The tax credit is non-refundable, but can carry forward for 15 years.[15]

*Analysis:* A 2017 analysis by the State of Minnesota's Office of the Legislative Auditor found that in 2014, businesses claimed $50 million in research tax credits, two-thirds of which were claimed by C corporations. From 2008 to 2014, the credit helped increase both jobs and earnings in the state, according to the evaluation. The fiscal benefits of the tax, however, offset only a small share of the total amount of credits claimed. Additionally, the evaluation found that the data records kept by the state's Department of Revenue were insufficient to allow for more nuanced evaluations of the credit's performance.[16]

## Pennsylvania

*Description:* Since 1997, Pennsylvania has offered the Research and Development (R&D) Tax Credit, which provides a tax credit valued at 10 percent of incremental research expenditures. Unused credits cannot be carried forward, but 75 percent of the credit is transfereable. The tax credit is not refundable. The program has a $55 million cap statewide, with $11 million (20 percent) reserved for small businesses.[17]

*Analysis:* A 2017 analysis by the Pennsylvania Department of Revenue found that the R&D tax credit program awarded 2,782 different taxpayers a total of $653 million in tax credits between 1997 and 2016, the lifetime of the program. In 2016, the 948 taxpayers claiming the R&D tax credit had total Pennsylvania research expenditures in taxable year 2015 of $3,116.5 million in 2015, a 21.2 percent increase compared to the year earlier.[18]

[14] http://commerce.maryland.gov/Documents/ResearchDocument/MarylandJobsDevelopmentActReport-FY2015.pdf
[15] http://www.revenue.state.mn.us/individuals/individ_income/Pages/Credit_for_Increasing_Research_Activities.aspx
[16] http://www.auditor.leg.state.mn.us/ped/pedrep/researchcredit.pdf
[17] http://dced.pa.gov/programs/research-development-tax-credit/
[18] http://www.revenue.pa.gov/GeneralTaxInformation/News%20and%20Statistics/Documents/RD%20Reports/2017_rd_report.pdf

## Select state R&D tax credits

| State | R&D Tax Credit | Description |
|---|---|---|
| Arizona | R&D Income Tax Credit | The Research and Development Tax Credit program provides an Arizona income tax credit for increased research and development activities conducted in this state, including research conducted at a state university and funded by the company. |
| California | R&D Tax Credit | The California R&D Credit reduces income or franchise tax for the credit if you paid or incurred qualified research expenses while conducting qualified research in the state. |
| Connecticut | R&D Incremental Expenditures Tax Credit | A credit may be applied against the Connecticut corporation business tax for the incremental increases in research and development expenses incurred in Connecticut. |
| Connecticut | R&D Non-incremental Expenditures Tax Credit | A credit may be applied against the Connecticut corporation business tax for research and development expenses incurred in Connecticut. |
| Delaware | R&D Tax Credit | The Research and Development Tax Credit is for qualified Delaware businesses that incur research and development expenses. |
| Florida | R&D Tax Credit | Florida provides a corporate income tax credit available to eligible businesses for certain qualified research expenses. |
| Georgia | R&D Tax Credit | Georgia offers an incentive to new and existing business entities performing qualified research and development in Georgia. |
| Idaho | 5% R&D Income Tax Credit | Businesses conducting basic and qualified research may earn an income tax credit of 5 percent that may be carried forward up to 14 years. |
| Indiana | R&D Tax Credit | The Research and Development Tax Credit, also known as the Research Expense Tax Credit, provides a credit against state tax liability for qualified company research expenses. It is based on the increase in Indiana R& D over the prior three-year base. |
| Kansas | R&D Credit | The Kansas research and development credit allows a taxpayer who makes expenditures in research and development activities in Kansas to claim an income tax credit. |

| State | R&D Tax Credit | Description |
|---|---|---|
| Maine | Super R&D Tax Credit | The Super Research and Development Credit is based on qualified research payments exceeding 150 percent of the average for the three-year period prior to the effective date of the credit. |
| Maryland | R&D Tax Credit | Businesses with qualified research and development expenses in Maryland are entitled to a tax credit if eligible and certified. These credits remain in effect until January 1, 2020, subject to extension by the General Assembly. |
| Massachusetts | R&D Tax Credit | Massachusetts offers a tax incentive for research and development investment for both manufacturers and R&D companies. The R&D tax credit closely resembles the federal credit program, however, it specifically offers qualifying Massachusetts companies many unique features for doing business in Massachusetts. |
| Minnesota | R&D Tax Credit | The tax credit for R&D expenditures is 10 percent, up to the first $2 million in eligible expenses. The credit is 2.5 percent for eligible expenses above $2 million. |
| Nebraska | Nebraska Advantage R&D Credit | Offers a refundable tax credit for qualified research and development activities undertaken by a business entity for 21 years. |
| New Hampshire | R&D Tax Credit | During the 2007 session, the Legislature designated $1,000,000 for each of the 2008-2012 fiscal years to be available to fund research and development credit against business taxes paid to the state of New Hampshire. |
| New York | Excelsior Jobs Program | The Excelsior Jobs Program is a targeted program, focusing on the growth and expansion of the high-tech and clean energy jobs of tomorrow, while also supporting the manufacturing sector that remains the backbone of our economy. Applications should be completed in consultation with the appropriate regional office representative of Empire State Development. |
| North Dakota | Research Expense Credit | An individual, estate, trust, partnership, corporation, or limited liability company is allowed an income tax credit for conducting research in North Dakota. |

| State | R&D Tax Credit | Description |
|---|---|---|
| Ohio | Research & Development Investment Tax Credit | The Ohio Research and Development Investment Tax Credit is a nonrefundable credit against an Ohio C-Corporation's Corporate Franchise Tax. The tax credit currently is applied against a company's Corporate Franchise Tax but will be taken against the Commercial Activity Tax (CAT) for corporations subject to ORC Section 5733.01(G)(2) after tax year 2008. |
| Rhode Island | R&D Expense Credit | The Research and Development Expense Credit offers corporations a 22.5 percent tax credit for increases in qualified research expenses. |
| Texas | Franchise Tax Credit for Qualified R&D Activities | The Research & Data tax credit provides companies the option of selecting either a sales tax exemption on property purchased by persons engaged in qualified research activities or the franchise tax credit, but not both. |
| Vermont | R&D Tax Credit | A business may be authorized for a credit of up to 10% of qualified research and development expenditures. |

Source: [http://www.stateincentives.org/](http://www.stateincentives.org/)

## About SSTI

SSTI strengthens initiatives to create a better future through science, technology, innovation and entrepreneurship.

As the most comprehensive resource available for those involved in the innovation ecosystem, SSTI offers the services that are needed to help build innovation-based economies. We strive to maximize the capacity of our members to deliver successful outcomes within the context of the complex innovation communities in which they participate.

Since its inception in 1996, SSTI has developed a nationwide network of practitioners and policymakers dedicated to improving the economy through science, technology, innovation and entrepreneurship. To best assist nurturing more vibrant economies, SSTI conducts research on common performance standards, identifies best practices, analyzes trends in and policies affecting the innovation ecosystem, and fosters greater cooperation among and between all public, private and nonprofit organizations encouraging prosperity.

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