Why Expanding the R&D Tax Credit Is Key to Successful Corporate Tax Reform

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Congress should lower the corporate rate while expanding the research credit's Alternative Simplified Credit rate from 14 percent to 20 percent.

The United States has not overhauled its tax code since 1986. Since then, increased global competition has led other countries and U.S. states to lower their corporate tax rates while also introducing or expanding incentives to encourage investment and production. As a result, the United States has fallen behind other nations, both in the level of its statutory corporate tax rate and in the incentives it gives to productive investment, including scientific and engineering research. In fact, the United States currently has the highest statutory corporate rate among OECD countries and now ranks just 25th in the generosity of its incentives for research.

That is why tax reform, especially on the corporate side, rightly remains one of the key policies Congress can pass to boost competitiveness and productivity and raise incomes. However, in their effort to find "pay-fors" for a lower corporate rate, some have suggested that Congress reduce or even eliminate the R&D tax credit, a tax incentive for companies to invest more in R&D that has been in force since 1981. This would be a serious mistake, as it would mean less R&D in the United States, fewer good jobs that are enabled by that, and reduced U.S. economic competitiveness, as firms performing R&D are much more likely to compete in global markets. We should follow the model from other nations, many of which have not only reduced statutory corporate tax rates but also expanded, sometimes significantly, their tax incentives for business R&D. In fact, the United States continues to lose ground compared to other nations when it comes to tax incentives for research, falling from 10th among OECD nations in 2000 to 25th today. To remedy this, Congress should lower the corporate rate while expanding the research credit's Alternative Simplified Credit rate from 14 percent to 20 percent.

The main purpose of tax reform should be to encourage economic growth by lowering the effective tax rate for investment. While ITIF does not believe that corporate tax reform should be revenue neutral, at least on a static scoring basis, one way to pay for at least some of the static revenue loss from lower rates is to eliminate many special tax breaks. But not all special tax provisions are bad. Some actually increase economic welfare by responding to clear market failures. The research and experimentation tax credit (also known as the research and development or R&D tax credit) is perhaps the most important of these. As noted below, economic studies show that it clearly increases the amount of research companies do in the United States and that this in turn increases social welfare. In 2015, Congress took an important step by finally making the credit a permanent part of the tax code. Reducing, or worse, eliminating the credit would be a huge step backward.

This paper briefly describes the current R&D tax credit. It then reviews the scholarly evidence supporting its efficiency in boosting domestic research and economic productivity. Although the United States was the first country to introduce a research tax credit, this report shows that it has continued to fall behind many of its competitors that have enacted more generous research incentives in an attempt to expand and draw more innovation to their economies. The paper concludes with a firm call for Congress to include a significant increase in the credit's generosity as part of any tax reform. Toward that end, Congress should increase the simplified version of the credit to 20 percent from its current value of 14 percent.

A BRIEF DESCRIPTION OF THE CURRENT R&D TAX CREDIT

The research and development tax credit (also known as the research and experimentation tax credit) was first enacted as a temporary provision of the Economic Recovery Tax Act of 1981.[1] Its inclusion was meant to reverse a long-term decline in private spending on research and development as a share of GDP. The credit was first scheduled to expire in 1985. Congress has since extended its provisions (often retroactively) many times until finally making it permanent as part of the Protecting Americans from Tax Hikes (PATH) Act of 2015.[2]

In its original form, the provision gives companies a tax credit of 20 percent of their current year "qualified research expenditures" (QRE) in excess of an historical base amount. As a result, the credit only rewards companies for increasing their research and development spending over time. However, part of this benefit is offset by the inability to deduct qualifying expenditures from revenues when calculating taxable income. The credit's effectiveness is also reduced by the complexity of calculating base expenditures. In order to make the credit easier to use, Congress introduced the Alternative Simplified Credit (ASC), which equals 14 percent of a company's QREs above 50 percent of its average QREs during the previous three years. While some industries perform more R&D than others, all manufacturing industries and many service industries rely on R&D for competitive success.[3] Moreover, while firms in states such as Michigan, Texas, and California conduct a significant amount of R&D, firms in every state conduct R&D.[4]

THE ECONOMIC RATIONALE FOR THE R&D TAX CREDIT

Unlike most special tax provisions, there is a clear and strong economic rationale for the R&D tax credit. Research expands the amount of knowledge in firms and the economy. This in turn leads to new innovations, e.g., changes in products or processes that lead to better and cheaper goods and services. Successful innovations spread, increasing economic productivity. Higher productivity is directly linked to higher standards of living.[5] In fact, increases in innovation and productivity are the main drivers of higher incomes. Business research is also a key driver of global competitiveness for firms and nations.[6]

Most firms will invest until the benefits they receive from more research equal the cost of conducting that research. Ideally, they would invest until the total benefits, to themselves and the rest of society, equal the costs. But research provides what economists call a positive externality: some of the benefits spill over to other companies and individuals. Because they cannot capture these extra benefits, firms don't consider them when making their research plans.

Almost all scholarly studies conducted since the early 1990s find R&D tax incentives to be both effective and efficient.

One economic study found that the median private rate of return from twenty prominent innovations was 27 percent. The median social rate of return, however, was 99 percent, implying substantial spillover effects.[7] The Obama administration estimated that the social value created by one dollar of tax credit was between two and three dollars.[8] Other studies have confirmed that the total returns to research are significantly larger than the private returns earned by the companies that pay for it.[9] As a result, as another study showed, companies conduct significantly less research than is socially optimal.[10] The R&D tax credit partially addresses this imbalance between private and social benefits by lowering the after-tax cost of research for firms.

Increased innovation in the United States also creates more high-paying U.S. jobs.[11] It does this in several ways.[12] First, innovation helps firms in the United States stay ahead of their international competitors, producing higher market shares and more revenues with which to hire workers. For example, wages in information technology industries are 74 percent higher than average U.S. wages.[13] Second, the generosity of the tax credit affects not only the amount of research firms do, but its location. Indeed, research has shown that the credit affects the choice of where to conduct research, which in turn can affect where a company places its highest-value production activities.[14] Third, this expansion domestically has carry-over effects as innovations lower costs and increase competitiveness in other industries. For example, advances in information technology have affected productivity throughout the traded sector. Finally, the higher wages and lower prices that eventually result from higher productivity create a new source of demand across the economy.

ACADEMIC STUDIES HAVE SHOWN THAT THE R&D CREDIT CAUSES FIRMS TO DO MORE RESEARCH

A previous ITIF report concluded that "Almost all scholarly studies conducted since the early 1990s find R&D tax incentives to be both effective and efficient."[15] For example, a 2000 study by economists Bronwyn Hall and John Van Reenan found that from 1981 to

1991 the U.S. R&D credit generated an additional dollar in research for every dollar lost in tax revenue.[16] The former congressional Office of Technology Assessment concluded that "For every dollar lost in tax revenue, the R&D tax credit produces a dollar increase in reported R&D spending, on the margin."[17] Other studies have found similar or greater results in the United States.[18]

This situation is not unique to the United States. A study of Australian R&D tax incentives found that they created about one dollar of R&D for every lost dollar of tax revenue.[19] A review of the literature found that the Canadian credit generates 98 cents in additional research for every dollar of tax credit and cites other studies showing effects as high as $1.80 and $1.90.[20] The net gain to society was 11 cents for every dollar of credit.[21] The same results hold for cross-country studies. Tax credits effectively stimulate additional business R&D.

Corporate R&D has become more global over the last 20 years as more nations have developed the technical talent to conduct R&D and companies operate in more markets abroad. Research shows that R&D tax incentives clearly affect the location of business R&D, not just the amount. For instance, a study of changes in California's R&D tax credits showed that it not only increased the total amount of research a firm did, it also attracted some existing research to California.[22] Two additional studies showed that state incentives were very effective in getting firms to move their research to another state.[23] The same effect occurs internationally. A multi-country study showed that R&D in one country responds to changes in the price of R&D in other countries, suggesting that innovation policies could play an important role in determining where research is located globally.[24] Finally, a review of seven industrial groups in 12 countries concluded that U.S. technological dominance is eroding at a rapid pace and that foreign affiliates of U.S. firms conducted more research in countries with R&D tax incentives.[25]

These two factors are at the root of ITIF's earlier calculations that increasing the ASC to 20 percent would create 162,000 jobs, generate 3,850 additional patents each year, and increase productivity by 0.64 percent and GDP by $66 billion per year. And the increased tax revenues from this additional economic activity would begin to exceed the expenditure loss from the tax credits within 15 years.[26]

THE UNITED STATES CONTINUES TO FALL BEHIND IN THE GENEROSITY OF ITS RESEARCH INCENTIVE

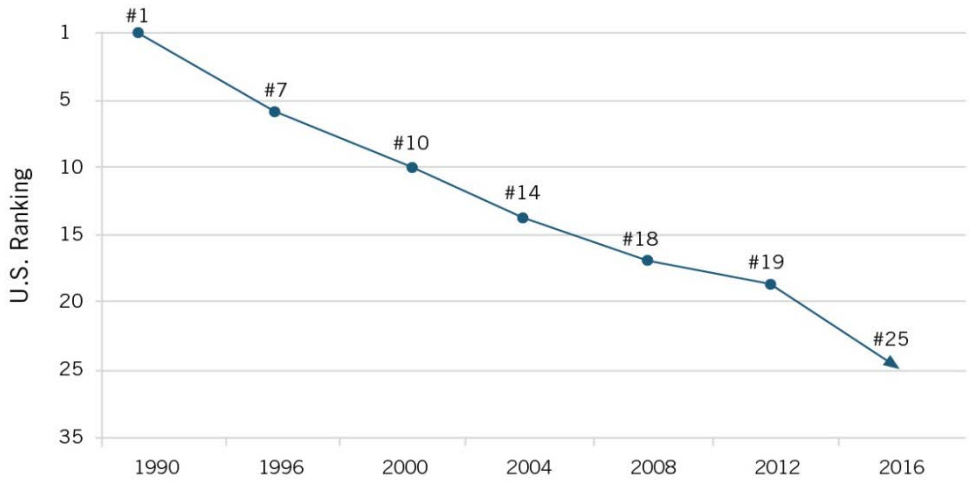
ITIF has long tracked the slow decline of the relative generosity of the U.S. R&D tax credit compared to other nations.[27] Just as other countries have lowered their statutory tax rates in order to encourage more investment and faster growth, they have also been lowering the effective rate on research activity within their jurisdictions, often by enacting or expanding a tax credit or deduction for investments in research. In addition, at least 15 nations have put in place "innovation boxes" where they tax income from innovation-based products and services at a significantly lower rate.[28]

The Organization for Economic Cooperation and Development (OECD) measures a country's tax generosity toward research with a measure called the B-index, first developed by Jacek Warda.[29] The B-index measures the level of pre-tax profit a "representative" firm would need in order to break even on one dollar of additional R&D spending on a present value basis.[30] The generosity of the tax credit is then measured as one minus the B-index. Appendix A shows OECD calculations of the tax subsidy for 42 countries in 2016.

Relative to other nations, the United States has steadily fallen in the relative generosity of its tax incentive for conducting research. In the late 1980s, the U.S. credit was the most generous among OECD members. By 2004, it had fallen to 17th.[31] By 2014, the United States ranked 19th among OECD countries and 27th among all countries measured. Unfortunately, its ranking has continued to slip since then. In 2016, the U.S. ranking among just the OECD nations was 25th for large firms and 26th for small and medium-sized enterprises. (See figure 1.)

Relative to other nations, the United States has steadily fallen in the relative generosity of its tax incentive for conducting research.

Figure 1: U.S. Ranking in OECD on R&D Tax Incentive Generosity for Large Firms[32]



In recent years many nations have doubled down on this approach in order to boost their innovation economies.[33] A recent report by KPMG lists several countries that have increased their R&D incentives since 2012:[34]

- In 2016 Austria increased its R&D credit from 10 percent to 12 percent.
- The Czech Republic increased the special allowance that firms can deduct from their tax base by between 10 percent and 110 percent of R&D costs.
- France implemented a new R&D tax incentive for prototype designs by small and medium enterprises.
- Italy introduced a renewed R&D tax credit.
- Spain now gives cash refunds to taxpayers who do not owe taxes or have reached the annual limit on applying tax credits.
- Sweden passed R&D tax relief for R&D personnel.
- The United Kingdom put in place 10 percent taxable cash credits for large companies. A more generous provision applies to small and medium enterprises.

CONCLUSION

ITIF has designated an improved R&D tax credit as one of five "must-have" items in order for tax reform to be a success.[35] The U.S. tax code has failed to reflect changes in the international economy that increase the competitive pressure on American companies in globally traded sectors. These changes include increased trade in goods and services and greater capital mobility. But they also include purposeful efforts by virtually all of the country's main economic competitors to create a more welcoming tax code, both by reducing statutory corporate rates and by enacting or expanding incentives to target research and investment.

As a result of its inaction, the generosity of the United States research and development credit has steadily fallen behind that of other countries, going from the most generous in the OECD to 25th. The main purpose of tax reform is to increase the incentives for productive investment in the United States. Lower statutory rates do this, but not if it comes at the expense of elimination of the tax credit. Now that Congress has made it a permanent part of the tax code, legislators need to restore the U.S. ranking, at a minimum by increasing the ASC to 20 percent.

APPENDIX A: 2016 B-INDEX VALUES FOR PROFITABLE FIRMS[36]

Country	Large Firms	Small and Medium Enterprises
Australia	0.07	0.18
Austria	0.15	0.15
Belgium	0.11	0.11
Brazil	0.26	0.16
Bulgaria	0.00	0.00
Canada	0.13	0.30
Chile	0.13	0.29
China	0.15	0.15
Cyprus	0.00	0.00
Czech Republic	0.21	0.21
Denmark	-0.01	-0.01
Finland	-0.01	-0.01
France	0.26	0.43
Germany	-0.02	-0.02
Greece	0.11	0.11
Hungary	0.30	0.20
Iceland	0.22	0.22

Ireland	0.29	0.29
Italy	0.09	0.09
Japan	0.13	0.14
Korea	0.04	0.25
Latvia	0.31	0.31
Lithuania	0.32	0.32
Luxembourg	-0.01	-0.01
Mexico	-0.01	-0.01
Netherlands	0.21	0.21
New Zealand	-0.02	-0.02
Norway	0.08	0.22
Poland	0.05	0.06
Portugal	0.36	0.37
Romania	0.08	0.08
Russian Federation	0.07	0.07
Slovak Republic	0.11	0.11
Slovenia	0.19	0.19
South Africa	0.16	0.16
Spain	0.36	0.36
Sweden	0.05	0.05
Switzerland	-0.01	-0.01
Turkey	0.23	0.23
United Kingdom	0.10	0.29
United States	0.04	0.04

ENDNOTES

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