Why the Tax Reform Act of 2014 Should Expand, Not Cut, the R&D Tax Credit

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By reducing the generosity of the R&D tax incentives, the Tax Reform Act would lead to the United States losing share in global private sector R&D, with negative effects on the economy and jobs.

Research and development is a key driver of U.S. productivity growth, innovation and global competitiveness.[1] However, both economic theory and evidence show that relative to societally optimal rates companies underinvest in R&D, which is why since 1954 companies have been able to deduct R&D costs immediately rather than depreciating them, and why since 1981 companies have been able to take a tax credit for R&D expenditures. Since then, however, at least 26 other nations have put in place more generous R&D incentives. Unfortunately, the Tax Reform Act of 2014 proposed by House Ways and Means Chairman David Camp (R-MI) would not only significantly reduce the tax incentives to invest in R&D but would disqualify R&D expenditures toward software development from the credit.

These changes, if enacted, would have a number of negative effects on the U.S. economy.

- First, the changes would reduce the tax incentives for performing R&D in the United States by approximately $20 billion per year, raising the effective tax rate of R&D-performing companies. The result will be declining competitive advantage against companies located in foreign nations.
- Second, the changes will reduce R&D performed in the United States, by perhaps as much as $25 billion per year, which would reduce productivity growth by an estimated 0.18 percent per year.

- Third, by distorting how R&D for software is treated, the changes would alter the allocation of R&D across types of research, negatively impacting innovation.

The United States cannot afford to be indifferent to where R&D is performed. By reducing the generosity of the R&D tax incentives, the Tax Reform Act would lead to the United States decreasing its share of global private sector R&D, with negative effects on the economy and jobs to follow. To be sure, the United States needs sensible reforms that lower corporate rates, but these should be taken while maintaining, or even expanding, proven incentives to invest such as the R&D tax credit.

THE CAMP PROPOSAL

Chairman Camp's proposed legislation represents years of hard work and much in the proposal would move U.S. corporate tax policy forward. However, the Tax Reform Act of 2014 (the Act) would substantially reduce tax incentives for performing R&D. While the Act proposes eliminating many deductions and credits (some doing little for growth, some pro-growth), the Act keeps the R&D credit. However, it proposes numerous changes that would dramatically reduce the overall tax incentives to conduct R&D.

To start with, the Act would make two positive changes. First, like virtually every other proposal to reform the credit, it calls for making the credit permanent. Second, it increases the rate of the Alternative Simplified Credit (ASC) by 7.1 percent (from 14 percentage points to 15 percentage points). In comparison, however, other proposals have called for increasing the ASC rate to between 17 percentage points and 20 percentage points.[2]

Eliminating the Deduction of R&D

Unfortunately these positive changes in the R&D credit are outweighed by changes that would significantly reduce R&D tax incentives. First, under current law, companies can deduct their R&D expenses in the year in which they occur, as opposed to depreciating them over time. The amount of this deduction is reduced by the amount of R&D tax credits that the company claims. Section 3108 of the Act would require companies to spread these deductions over five years on the rationale that the assets gained through R&D spending have a useful life of several years. The change would be phased in over six years. Although companies eventually would still deduct the full cost of R&D, their tax liability would be shifted forward, costing companies money because of the time value of money. According to the Joint Committee on Taxation (JCT), this would raise $192.6 billion over 10 years.[3]

Eliminating Particular Credits

Second, Section 3202 of the Act would eliminate most of the various forms of the regular R&D credit, leaving only the ASC and a reduced basic research credit. (The existing 20-percent basic research credit would also be replaced by a 15-percent credit.) The Act would eliminate the regular 20-percent credit. While companies taking the regular credit would be able to migrate to the ASC, this would represent a tax increase on most of them since if the ASC was a more generous credit for them now, they would have already switched over. The Act would eliminate the energy R&D credit that provides companies a flat 20-percent credit for amounts paid to universities or other outside institutions for energy research.

This would increase taxes on the companies funding the R&D, reduce revenues for universities and slow the rate of energy innovation.[4] In addition, the tax treatment of other payments to outside research facilities, such as universities, would be made less attractive. And finally, supplies and computer software purchased for research purposes would no longer qualify for the credit.

Eliminating Eligibility of Software

Third, the bill's language suggests that expenditures on research to develop software would no longer be eligible for the credit.[5] When companies perform R&D it is not just to test a new material using a Bunsen burner—increasingly company R&D also involves software development. Indeed, software is at the core of many new technologies in many different industries, not just the software industry. Battelle's "2014 Global R&D Funding Forecast" finds that companies are making significant R&D investments "in long-range technology platforms like robotics, high performance computing, social media, [and] software."[6] Indeed, as *R&D Magazine* points out, software is becoming a stronger enabler of R&D.[7]

The fact that software is a critical component of R&D is why virtually all other nations with tax incentives for R&D include software development as eligible.

This is one reason why companies in the United States spent $76 billion on software for R&D purposes in 2011, with about two-thirds of this going to develop software products and one-third to develop software embedded in other products, accounting for nearly a third of the $239 billion total corporate-funded domestic spending on R&D.[8] This investment in software R&D is larger than the combined amount spent on R&D for energy ($18 billion), biotechnology ($21 billion) and nanotechnology ($11 billion).[9]

Almost 20,000 companies took the credit for developing software, while 13,000 took the credit for developing software that was embedded in other products (41 percent and 27 percent respectively of all companies conducting R&D).[10] And just 46 percent of this R&D was performed by firms in information industries.[11] Many other industries, from transportation equipment to instruments to life sciences perform R&D to develop software. For example, data handling software might be needed to record and monitor the results of a firm's R&D. This is why 14 percent of manufacturers' R&D investments went to software.[12]

Software has a significant impact on economic growth and productivity: one study estimates that software increased labor productivity by 0.22 percentage points from 1995 to 2007 (average annual growth rate).[13] This represents 8 percent of total labor productivity growth.

The fact that software is a critical component of R&D is why virtually all other nations with tax incentives for R&D make software development eligible. For example, the United Kingdom allows firms to claim expenditures on software that is used as a tool in a larger R&D project and on the development of software that is the goal of the R&D project.[14]

Impacts of These Changes

The net impacts of these changes would mean that the tax incentives for R&D performed in the United States would be considerably weakened. As noted above, Section 3108's provisions eliminating the ability to expense R&D in the first year would increase taxes on

R&D performing companies by $193 billion over 10 years. However, because of the order in which Joint Tax assesses the proposals, that estimate does not take into account the later proposal to make the R&D credit permanent. Under the assumption that the R&D credit expires, then, businesses would switch from claiming the R&D credit to claiming immediate R&D expensing. Thus, a proposal to eliminate immediate R&D expensing, that also assumes an *expiring* R&D credit, appears to involve a larger revenue gain than would a proposal that assumes a *permanent* R&D credit. This is part of the reason the gains from eliminating the R&D deduction appear to be so large.

While Section 3108 would increase taxes for R&D performing companies, Section 3203 would appear to reduce them. According to the JCT, the changes to Section 3203 would cost the government $34.1 billion over 10 years.[15] But this is a "tax cut" only because the JCT scores tax changes from a baseline of current law. Since the R&D tax credit has only been enacted on a temporary basis since its inception, any change making the credit permanent appears as a net loss for government revenue—a credit that lasts one year obviously looks cheaper over a 10-year estimate than a credit that lasts 10 years. In other words, if the government were to simply renew the credit every year it would in practice cost the government the same amount of money as a permanent credit, yet it would be scored at one tenth the cost. (It would actually be slightly less than this, as there is some evidence that lack of permanence does reduce corporate R&D somewhat.)

The scoring of the Camp proposal employs similar logic: the $34.1 billion in lost government revenue over 10 years is less than half the cost of simply making the current credit permanent ($77.0 billion) and only a third of the President's permanent 17-percent ASC rate proposal (two points more than the Camp ASC rate, for a 10-year total of over $100 billion).[16] The far smaller size of the Camp proposal relative to other permanent proposals is due to the disqualification of the software and supplies, and the elimination of the various 20-percent-rate credits listed above. This suggests that, leaving out the cost to the government of making the credit permanent (which is the de facto, if not actual, baseline), Section 3108 changes actually represent a tax increase of $42.9 billion, or $4.3 billion per year on companies conducting R&D ($77 billion minus $34.1 billion).

In sum, the JCT finds that both proposals together would increase government revenue by $158.5 billion over 10 years, or approximately $15.9 billion per year. But this is relative to a baseline of an expiring credit. Leaving out the "artificial" costs to the government of making the credit permanent, the total cost could be as high as $235 billion over 10 years ($192.6 billion plus $42.9 billion).[17] It is clear that Camp's tax proposal would represent a large increase in the costs of R&D for businesses in the United States.

WHY REDUCING R&D INCENTIVES WOULD HURT GROWTH AND COMPETITIVENESS

Even without the Act's proposed reduction in R&D tax incentive generosity, the United States already provides relatively weak incentives for businesses to perform domestic R&D. In 2012, 26 other nations provided more generous R&D tax incentives than the United States.[18] For the United States to rank in the top five nations in terms of R&D tax

generosity, it would have to increase the rate of the ASC to nearly 35 percent, significantly higher than the Camp proposal of 15 percent.[19]

For the U.S. economy to retain—not continue to lose—its global competitive position, especially in technology-intensive industries, the R&D tax credit should be expanded, not reduced, and software should not be singled out for elimination.

Why should policymakers care about where U.S. companies perform their R&D or how much R&D they perform? There are three reasons. First, as noted above, because companies do not capture all the economic benefits from their R&D, they will underinvest in R&D relative to societally optimal levels. Second, because many other nations provide significantly more generous R&D tax incentives, firms in the United States will at the margin expand R&D faster overseas than in the United States. And that is exactly what we have seen with U.S. corporations expanding their R&D 2.7 times faster overseas than domestically over the last decade.[20] Third, increased domestic R&D leads to significant economic benefits. A 1-percent increase in the stock of research boosts productivity by between 0.23 and 0.3 percent.[21] This is why a cut in R&D tax incentives of approximately $20 billion a year would lead to slower growth in productivity of approximately 0.14 percent, which would reduce U.S. GDP growth by approximately $25 billion annually.[22]

In summary, for the U.S. economy to retain—not continue to lose—its global competitive position, especially in technology-intensive industries, the R&D tax credit should be expanded, not reduced, and software should not be singled out for elimination.

ENDNOTES

1. See previous ITIF publications: Luke A. Stewart, Jacek Warda, and Robert D. Atkinson, "We're #27: The United States Lags Far Behind in R&D Tax Incentive Generosity" (Information Technology and Innovation Foundation, July 2012), http://www.itif.org/publications/we-re-27-united-states-lags-far-behind-rd-tax-incentive-generosity; Robert D. Atkinson, "Create Jobs by Expanding the R&D Tax Credit" (Information Technology and Innovation Foundation, January 2010), http://www.itif.org/publications/create-jobs-expanding-rd-tax-credit.
2. The president calls for an increase to 17 percent in his current budget proposal, as he has done for several years; see: Office of Management and Budget, *Analytical Perspectives* (U.S. Government Printing Office, 2015), http://www.whitehouse.gov/omb/budget/analytical_perspectives. Senator Orin Hatch (R-UT) and former Senator Max Baucus proposed a permanent 20-percent credit, which is complemented by a similar proposal in the House; see: Committee On Finance, "Baucus, Hatch look to boost innovative American industries, provide certainty with permanent research and development tax credit" (news release, Committee on Finance, September 19, 2011), http://www.finance.senate.gov/newsroom/chairman/download/?id=e758f031-bf7e-4b0f-90a3-39091c504f80. Previous work by ITIF has highlighted similar proposals and described a variety of designs; see for example: Stewart, Warda, and Atkinson, "We're #27!"
3. Committee on Ways and Means, *Tax Reform Act of 2014: Discussion Draft: Section-by-Section Summary* (Committee on Ways and Means, February 26, 2014), 55, http://waysandmeans.house.gov/uploadedfiles/ways_and_means_section_by_section_summary_final_022614.pdf.
4. See principle two in Matthew Stepp, Matt Hourihan and Robert D. Atkinson, "Ten Principles for Creating a New U.S. Clean Energy Policy" (Information Technology and Innovation Foundation, May 2011), http://www.itif.org/publications/ten-principles-creating-new-us-clean-energy-policy.
5. Title 26, Subtitle A, Chapter 1, Subchapter A, Part IV, Subpart D, § 41 (d.2.B.) would be amended to eliminate software from the definition of "business components" for use in "qualified research," and (d.4.E) would be amended to exclude "any research with respect to computer software which is developed by (or primarily for the benefit of)" the taxpayer from the credit. The original law can be found here: http://www.law.cornell.edu/uscode/text/26/41; while the proposed amendments are available here: http://waysandmeans.house.gov/uploadedfiles/statutory_text_tax_reform_act_of_2014_discussion_draft__022614.pdf, 432-3.
6. Martin Grueber et al., "2014 Global R&D Funding Forecast" (Battelle / R&D Magazine, December 2013), 4, http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf?sfvrsn=4.
7. Paul Denny-Gouldson, "Revamping R&D: The New Laboratory In Your Pocket?," *R&D Magazine*, March 10, 2014, http://www.rdmag.com/articles/2014/03/revamping-r-d-new-laboratory-your-pocket.
8. National Science Foundation and U.S. Department of Commerce, *2011 Business R&D and Innovation Survey* (forthcoming), Table 43.
9. Ibid.
10. Ibid.
11. Ibid.
12. Ibid.
13. Carol Corrado et al., *Intangible Capital and Growth in Advanced Economies: Measurement Methods and Comparative Results* (Institute for the Study of Labor, 2012), ftp://repec.iza.org/RePEc/Discussionpaper/dp6733.pdf.
14. HM Revenue & Customs, "CIRD81960 - R&D tax relief: conditions to be satisfied: BIS Guidelines (formerly DTI Guidelines) (2004) - application to software," http://www.hmrc.gov.uk/manuals/cirdmanual/cird81960.htm.
15. Committee on Ways and Means, *Tax Reform Act of 2014*, 74.
16. Congressional Budget Office, *Individual Income Tax Receipts and the Individual Tax Base—February 2014 Baseline* (Congressional Budget Office, February 4, 2014), http://www.cbo.gov/publication/45065; Joint Committee on Taxation, *Description of certain revenue provisions contained in the President's fiscal year 2014 budget proposal,* JCS-4-13 (U.S. Government Printing Office, December 20, 2013), https://www.jct.gov/publications.html?func=startdown&id=4538.

17. $23.6 billion/year, or $77 + $192 - $34.
18. Stewart, Warda, and Atkinson, "We're #27!"
19. Ibid.
20. National Science Board, *Science and Engineering Indicators 2010* (Arlington, VA: National Science Foundation, 2010), http://www.nsf.gov/statistics/seind10/pdf/seind10.pdf; Bureau of Economic Analysis, Research and Development Satellite Account (1998-2007 research and development data; accessed December 6, 2010), http://www.bea.gov/national/newinnovation.htm.
21. Atkinson, "Create Jobs by Expanding the R&D Tax Credit."
22. It is difficult to know the exact amount of tax increase due to the substitution between the credit and deduction. For sake of calculations this report estimates it at $20 billion per year over 10 years. The $25 billion figure is based on the assumption that a cut of $20 billion in R&D tax incentives will lead to a reduction of $25 billion in R&D expenditures and that this would mean a decline in R&D stock of 0.77 percent (using the lower 0.23 elasticity), and this decline would lead to 0.18 percent slower growth in productivity. See: Atkinson, "Create Jobs by Expanding the R&D Tax Credit," for an explanation of the methodology.

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Robert D. Atkinson is the founder and president of the Information Technology and Innovation Foundation. He is also author of the books *Innovation Economics: The Race for Global Advantage* (Yale, 2012) and *The Past And Future Of America's Economy: Long Waves Of Innovation That Power Cycles Of Growth* (Edward Elgar, 2005), and the State New Economy Index series. Dr. Atkinson received his Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill in 1989.

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