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Hearing on Tax Policy and the High-tech Sector

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Members of the Committee, I appreciate the opportunity to appear before you to discuss the role of tax policy on innovation and California's economic competitiveness.

I am the President and founder of the Information Technology and Innovation Foundation (ITIF). ITIF is a nonpartisan research and educational institute whose mission is to formulate and promote public policies to advance technological innovation, productivity and competitiveness.

This is a timely and important hearing, for the competitive race for innovation advantage has intensified as states and nations seek to drive economic growth through technology-based economic development, long a core strength of California. While the California economy continues to possess many strengths, it cannot rely on past success and inertia to carry the day. In this regard, reforming and expanding tax incentives for innovation, including the existing R&D tax credit and a new "patent box" tax incentive, can help drive more innovation and jobs in California.

Other Nations and States Are Using the Tax Code to Drive Economic Competitiveness and Innovation

In 2007 (the last year data were available), California ranked 7th in the nation in total R&D as a share of gross state product and sixth in industry R&D with the latter accounting for 3.3 percent of GSP. And its share of total (government and industry) U.S. research and development increased since 1999, from 1.48 times more as a share of GSP to 1.64 in 2007. But even though California is among the leading states, it cannot afford to rest on its laurels. Today, California faces intense global competition for economic advantage, particularly in innovation-based, higher-wage industries. Most nations and U.S. states have established robust competitiveness policies, including putting in place more competitive corporate tax codes.

We can see this competition in the evolution of R&D tax incentives. The United States was one of the first countries to realize the importance of spurring R&D through the tax code, putting in place the R&D credit in 1981. As a result, throughout the 1980s the United States had the most generous R&D tax incentive in the world. However, other nations soon learned from the United States' success with the credit and began to not just copy us, but go beyond us. In 2008 the United States was ranked just 17th overall (and 19th for R&D tax generosity towards small businesses) amongst 30 OECD nations.[1] In the latest OECD rankings, the U.S. credit is just over a quarter as generous as that of Spain and Mexico. And Canada's and Norway's tax incentive for small businesses are, respectively, nearly four and three times higher than the United States. But the United States has not just fallen behind the richer OECD nations; a number of developing non-OECD nations, such as China, India, Brazil, and Singapore, now also provide more generous tax treatment for R&D expenditures. China, for example, provides a 150 percent deduction on R&D expenses (provided that R&D spending increased 10 percent over the prior year)—on top of the fact that R&D personnel salaries are nearly 1/6th what they are in the United States. This competition is also coming from other states. In the early 2000s, 31 states provided a tax credit on company R&D.[2]

In addition to tax incentives for R&D, a small but growing number of nations have put in place tax incentives to spur the commercialization of R&D, not just the conduct of R&D. These "patent box" incentives allow corporate income from the sale of innovation-based

products to be taxed at a significantly lower rate than other income. Eight nations—Belgium, China, France, Ireland, Luxembourg, the Netherlands, Spain, and Switzerland—have established patent boxes, and the UK is set to implement its patent box policy in 2013 with a tax rate of 10 percent on income generated from patented products, compared to the standard rate of 26 percent. France's patent box reduces corporate income tax from 34 percent to 15 percent on qualifying income.[3] In China, income from innovation-based products can be taxed at between 0 and 12.5 percent. Countries differ on what is defined as qualifying income, with all of them allowing patent income, but some going beyond and including income from most IP and from income generated from R&D. Ireland developed the first patent box in 1973, but the other nations have adopted patent boxes quite recently, since 2005.

Innovation-based Tax Incentives Can be Effective Economic Development Tools

Because they are so new, there are few studies of the effectiveness of patent box policies, although ITIF did review current information about their impacts.[4] However, there are numerous studies on the effectiveness of the U.S. research and development tax credit, and the lion's share show that it is an effective way of stimulating private-sector R&D.[5] Studies show that federal R&D tax credits produce at least one dollar of R&D for every dollar of forgone tax revenue and state R&D incentives generate even larger impacts.[6] Bloom, Griffith and Van Reenen found that the credit stimulates $1.10 of research for every dollar of lost tax revenue.[7] Other studies have found even greater benefits, estimating the research investment to tax-cost ratio to be between 1.3 and 2.9. Klassen, Pittman and Reed found that the R&D tax credit induces $2.96 of additional R&D investment for every dollar of taxes foregone.[8]

Moreover, state R&D tax credits appear to be even more effective than the federal credit.[9] A recent study of the California R&D tax credit found that it stimulated considerably more R&D than the federal credit did, in part because it not only induced firms to perform more R&D, it also induced them to relocate R&D to California from other states.[10] Another study by Yonghong Wu from the University of Illinois at Chicago concludes that state R&D tax credits have "significant and positive effects" on the number of high-tech establishments in a state.[11] Likewise, a study by San Francisco Federal Reserve Bank economist Dan Wilson found that state R&D tax credits stimulated a relocation of R&D from states with less generous credits to states with more generous ones.[12] Wilson found that "the magnitude of this response is nearly as large as the response to an increase in a state's own user cost." In other words, for every dollar of R&D that a state R&D tax credit induces firms in the state to expand, it leads to almost another dollar of R&D relocating to the state from other places.[13]

Notwithstanding these positive findings Wilson has criticized state R&D tax credits for having "zero-sum" effects. In other words, that they simply move R&D from one state to another. However, there are multiple problems with Wilson's conclusion. First, if the United States were a closed economy, his criticism would have more validity (although it would still be flawed). But R&D is increasingly globally mobile. In fact, corporate R&D by U.S. companies grew 2.7 times faster overseas over the last decade than all corporate R&D (foreign and domestic firms) did in the United States.[14] So while state R&D tax incentives might induce R&D to move from one state to another, they also induce R&D to move (or stay) in the United States relative to other nations, which clearly helps the U.S. economy. Second, states compete economically with each other on a wide array of tools in their economic development "arsenals" including tax holidays,

low cost loans, free land, etc. Much of this competition is actually negative sum in that it not only adds little to the productive and innovative capacity of the nation, it induces firms to locate in places that may not be as efficient as they would otherwise. But to the extent that states compete through investing in innovation (e.g., having a better research university, or providing a better R&D tax credit), the net stock of innovation increases. Even Wilson's work shows that state credits do induce more R&D to be done, even as they also induce some R&D to relocate.

Third, even we hypothesized that the R&D credit had no behavioral effect and it just lowered the taxes on the firms taking it, this would still have beneficial effects on the California economy. There are several reasons for this, but the principle one is that R&D tax credits are taken largely by technology firms that are in "traded" "traded" sectors. This is important because if a high-tech firm in California closes, California loses those jobs as well as all the other jobs that the company and its workers supported through their spending. In contrast if a grocery store, for example, closes, California doesn't lose these jobs because California residents will simply buy groceries at another store, creating jobs there.

This is why state economic development efforts have long focused on sectors that sell much of their products or services outside the state. An idea tax code, therefore, is one that provides more incentives and lower effective rates on firms in "traded" industries. If taxes on firms in traded sectors are raised, firms will act rationally by moving or expanding production to states or nations that tax them less.[15] As the Mirrlees review from the London-based Institute for Fiscal Studies noted, in principle, it would be efficient to tax mobile activities at a lower rate than relatively immobile ones (e.g., grocery stores and electric utilities): "This would allow a higher rate of corporation tax to be supported on less mobile (location-specific) economic profits, while using a lower rate to reduce the deterrence to mobile income."[16]

In this context, the R&D tax credit (and as discussed below the patent box incentive) is ideally suited to spurring economic development for virtually of its benefits are targeted at traded firms. In addition, because high-tech firms nationally pay over 70 percent higher wages than firms generally, the R&D tax credit also targets firms that are providing good, middle class jobs.

Finally, the job of California policymakers is to figure out how to make the California economy more competitive, and if instituting a stronger R&D tax credit can do this, it's in their interest to do this.

What Should California Do?

There are a number of steps California might consider to ensure that its tax code better spur innovation, economic development and jobs.

1) Revise the California R&D Credit to be Consistent with the Federal Alternative Simplified Credit.

At the federal level companies choose from two versions of the R&D credit. The regular credit is equal to 20 percent of payments for qualified research above a base amount defined as the average of research payments made in the four preceding years. This is the credit that most state R&D credits, including California's are linked to. However, in 2006 Congress

instituted the Alternative Simplified Credit (ASC), which is equal to 14 percent of the amount of qualified research expenses that exceed 50 percent of the average research expenses of the preceding three years. Congress did this because of numerous limitations of the regular incremental credit not the least of which was the fact that the 1984-1988 base period was over 20 years old at the time. Now the majority of companies take the ASC credit rather than the regular credit.

Some states have adjusted their credits to the new federal ASC. For example, Washington state recently passed legislation allowing firms there who take the federal ASC to also take the state credit. California has not conformed to the 2006 Alternative Simplified Credit.[17] Because so many firms now take the ASC and all new firms that tax the credit likely will take the ASC, California should revise its statute to add a provision to let companies taking the Federal ASC to also take a California ASC. If California does this, a key question is what should California's ASC rate should be. The regular federal credit is 20 percent and the California credit that builds off of this is 15 percent (these are incremental credits). Therefore the California rate is 75 percent of the Federal rate. For California to keep this ratio for a new ASC, they should enact a California ASC with a rate of 10.5 percent. This would mean that companies could take a credit of 10.5 percent on the R&D they conduct that exceeds 50 percent of their base year qualified R&D expenditures.

If California adopts an ASC credit, it should consider eliminating its Alternative Incremental Credit, which was modeled on the federal AIC. The AIC provides credit rates of 1.49 percent, 1.98 percent, and 2.48 percent on all R&D depending on the amount of research expenditures. However, after Congress created the ASC, it repealed the AIC since it was duplicative and not as generous as the ASC. California should do the same, but only if it adopts an ASC.

2) Revise the California Basic Research Credit

California should also consider modifying its basic research credit. There is a strong rationale for providing firms with a more generous credit for "basic research" since the "spillovers" from early stage research are usually greater and therefore firms will under-invest in this stage of research without incentives. California firms may be eligible for a basic research credit which is equal to 24 percent of the excess of basic research payments paid or incurred during the year over the base period amount. If California adopts an ASC, they should modify their basic research credit to conform. To do that and have the same ratio of credit as the regular credit to ASC, an ASC-type basic research credit could allow firms to qualify for a rate of 17 percent of basic research payments that exceed 50 percent of their base basic research payments.

California may also want to broaden the definition of basic research to include more collaborative research. It appears that under California law federal laboratories are not included under the definition of qualified organizations that companies can provide funding to for basic research. However, given California's strengths with regard to federal laboratories, and the importance of federal laboratories in commercial innovation,[18] California should consider explicitly allowing research funded at a federal laboratory in California to qualify for the basic research credit.

3) Institute a "Patent Box."

R&D tax incentives are on the "input" side. That is, they provide an incentive for firms to invest more in a key building block of innovation, in this case research. Patent boxes tax qualifying profits (those derived from patents or in some nations additional kinds of IP) at a lower rate. Patent boxes differ from R&D tax credits in that they provide firms with an incentive for commercialization of innovation, rather than for just the conduct of research. Commercialization of innovation, rather than the simple conduct of R&D, is a key driver of economic growth.

A patent box reduces the financial risk involved in innovation, better matching firm rewards with societal benefits, including the creation of high-wage jobs. If a patent box is designed in a way that links the incentive to the conduct of R&D and production of the patented product in California, it would go even further in spurring the creation and location of more innovation-based jobs, including manufacturing jobs, in California

There are at least three key issues in the design of the patent box for California. The first is the rate. California's tax rate for non-financial corporations is 8.84 percent. Most nations with a patent box have a rate that is at least half of their regular statutory rate. For California this would be a rate of 4.42 percent on qualifying income.

The second is the definition of qualifying income. The most restrictive would be just income from patented products. However, some industries (such as software) do not rely as much on patents to protect IP. That is why some nations, such as the Netherlands, developed an innovation box, to allow income from innovation-based products to qualify for the lower rate. If California adopts a patent box, it would need to decide on what income qualifies.

The third issue is the connection between the lower rate and the conduct of R&D and production of the patented product in California. In part to comply with EU rules, European nations do not require companies to conduct R&D or production in their nation to qualify for the patent box incentive. As a result, the incentive is less effective at spurring research and production in the nations, as companies can qualify for the lower rate if they patent a product in the country. Establishing such a policy link between the lower rate and production is critical because production jobs in California have been in a noticeable state of decline throughout the last decade. Between 2000 and 2010, California's manufacturing employment declined by one-third, or 603,000 jobs.[19] A robust R&D tax credit is only partially positioned to address the decline in technology-based manufacturing because R&D is separate from the production process. But because a patent box rewards revenue, it necessarily takes effect post-production.

Therefore, enabling the patent box rate to apply only to income from patented products (including digital products like software) developed and produced in California would likely have an important impact on supporting manufacturing. The key question is the nature of the linkage between R&D and production and the lower rate. There are several possible ways to design the linkage. The tightest linkage would only allow the lower rate to be given on income from products where the IP was developed in the U.S. and the product was produced in the California. But because of the nature of global supply chains this would significantly limit the use of the incentive, including for firms that might otherwise be willing to locate a significant amount of production in California, but who have to produce some overseas.

A better method would be to allow a share of the profits to be taxed at the lower rate based on the share of total R&D and production which is performed in California. This would provide flexibility as well as an incentive to produce R&D and products in the United States. To see how this would work, consider the following example. Assume that a company produces 100 percent of a patented product it sells in California. In this case if the company earns 80 million dollars of profit that are not covered by the patent box and $40 million that are and assuming that with sales factor apportionment the company pays taxes to California on the basis of 20 percent of its sales. So of the $80 million, 16 million would be apportioned to California and would be taxed at 8.84 percent with a tax owed of $1.41 million and of the $40 million 8 million would be taxed at 4.42 percent with a tax owed of $354,000 for a total tax of $1.77 million. Without the patent box, the total tax paid would be $2.12 million. Now assume that the company produces 50 percent of the patented product it sells in California. Then half of the patent income ($20 million) would be eligible for the lower rate. In this case, the company would pay a total of 1.94 million in taxes ($1.77 million from regular income, and $177,000 from its share of patent income). In this way, the company would have more incentive to produce innovation-based products in California.

Again, thank you for the opportunity to present this testimony before the Assembly Committee on Revenue & Taxation

Endnotes

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10. Lolita Paff, "State-Level R&D Tax Credits: A Firm-Level Analysis," *Topics in Economic Analysis and Policy* 5, no. 1 (2005), http://www.bepress.com/bejeap/topics/vol5/iss1/art17.
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13. Ibid.
14. 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.
15. Regional economists distinguish between two kinds of economic sectors: traded and non-traded. The output of the former is largely sold to people (or firms) who live outside the region where it is produced, while the latter is sold largely to people who live in the region. Few people travel outside their community to get a haircut. In contrast, few people buy a car that is produced in their community, unless they live in a place like Detroit. In this sense, barber services are not traded while automobile production is.
16. Rachel Griffith and Helen Miller, "Patent Boxes: An innovative way to race to the bottom?" *Vox* 30 (2011), http://www.voxeu.org/index.php?q=node/6706
17. "Research and Development Credit: Frequently Asked Questions," (State of California Franchise Tax Board), http://www.ftb.ca.gov/forms/misc/1082.pdf.
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