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Don't Put American Innovation in a Patent Box: Tax Policy, Intellectual Property, and the Future of R&D

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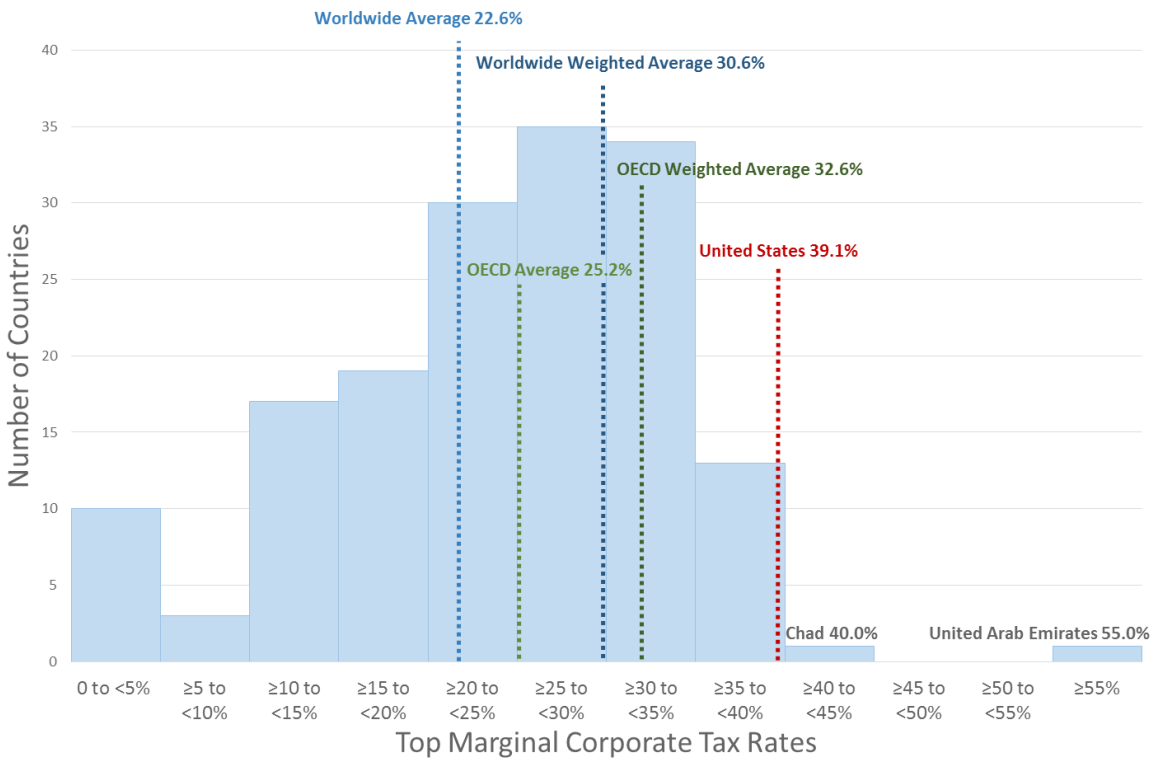
In an increasingly global economy, national governments are searching for ways to keep corporations from moving highly valuable intellectual property and associated economic activity to lower tax jurisdictions. In particular, governments are concerned with losing jobs, investment that fosters innovation, and the tax base attributable to income arising from intellectual property. One proposed solution is a patent box, also called an innovation box. A patent box lowers the rate of corporate income taxes paid on income originating from targeted intellectual property.

Congress is considering adding a patent box to the US corporate tax code to keep mobile intellectual property from leaving the United States and to further support domestic innovation.[1] Rather than a solution to the problem, the patent box is a poor substitute for much needed holistic corporate income tax reform. International experiences with patent boxes have not demonstrated they are able to remedy any of the problems they aim to fix. The academic literature suggests that a patent box will not improve measures of job creation, innovation, or tax revenue.[2] A better approach to encourage innovation, research, and development would be to lower the corporate tax rate for all businesses.

PROFIT SHIFTING: THE RESULT OF SYSTEMIC PROBLEMS

The United States has the single highest combined corporate tax rate in the Organisation for Economic Co-operation and Development (OECD) and the third-highest rate in the world (behind the United Arab Emirates and the Republic of Chad).[3] As shown in figure 1, the average top combined US corporate tax rate is 39.1 percent, higher than the worldwide and OECD averages. The United States is one of just three OECD countries that have not lowered their corporate tax rates in

FIGURE 1. DISTRIBUTION OF WORLDWIDE CORPORATE TAX RATES, 2014



Source: Kyle Pomerleau, "Corporate Income Tax Rates around the World, 2014" (Fiscal Fact No. 436, Tax Foundation, Washington, DC, August 2014).

the past 15 years.[4] Furthermore, the United States is one of only six OECD countries that still attempts to tax the global income of multinationals headquartered domestically (offering a credit for foreign taxes paid when profits are brought back into the United States). Worldwide taxation at high rates has led to over $2 trillion in US corporate profits being kept out of the US economy.[5]

Because of high corporate tax rates, US corporations face some of the world's strongest financial incentives to move overseas. Rather than physically relocate as a way to lower tax burdens, it is often easier for corporations to move intellectual property or just the profits associated with the intellectual property. Pejoratively described as "profit shifting," firms design elaborate tax strategies to lower US tax bills in order to compete in global markets where competitors are taxed at lower rates.[6]

Profit shifting is a central issue in the taxation of multinational corporations. Leveraging the differences between tax systems will always result in corporate tax planning. Global fears of tax-base erosion caused by profit shifting have increased the *perceived* need for a patent box to incentivize domestic intellectual property ownership. The OECD's base erosion and profit shifting project has popularized the idea that high-tax welfare states are losing their tax base to low-tax counties.[7]

PATENT BOX DESIGN AND COMPLEXITY

Patent boxes have been described as a "Pandora's box of complexity."[8] Increased tax code complexity has been shown to slow economic growth.[9] The United States has the eighth most complex tax code of 34 OECD peer countries. According to PricewaterhouseCoopers it takes 40 percent more time to comply with the corporate tax code in the United States (a total of 87 hours each year) than the 52-hour OECD average.[10]

A patent box requires certain income to fit a specified definition of income eligible for the lower tax rate. Two members of the House Ways and Means Committee, Charles W. Boustany Jr. (R-LA) and Richard E. Neal (D-MA), have introduced patent box legislation that allows corporations to deduct 71 percent of qualified profits. Qualified profits are "tentative innovation profits" multiplied by the corporation's research and

development (R&D) intensity (the past five years of R&D expenditures divided by past operating expenses). The legislation defines innovation profits as profits from "patents, inventions, formulas, processes, knowhow, computer software, and other similar intellectual property, as well as property produced using such IP."[11] The 71 percent deduction results in a 10.15 percent tax rate on patent box profits.

A 10.15 percent tax rate on certain profits—a reduction of 24.85 percentage points for US firms—will place strong incentives on firms to manipulate the definitions of qualified profits to maximize tax savings by taking advantage of the lower rate. Similar definitions used by current US R&D incentives have been manipulated to increase tax savings. For example, the amount of claimed R&D spending significantly increased after the favored tax status was introduced in 1981.[12] In a process known as relabeling, firms hire bevies of lawyers to relabel profits on their income statement and tax returns, without changing any real investments.

The proposed Boustany–Neal definition of qualified profits is not fully fleshed out, as the Ways and Means Committee itself recognizes in its request for feedback.[13] Even with fully developed definitions, the Internal Revenue Service (IRS), which will ultimately be tasked with writing legal definitions, has struggled in the past to define qualified research.[14] When the IRS issued its first regulatory interpretation of qualified R&D in 1998, it had to withdraw multiple consecutive versions of its definition following harsh criticism from both taxpayers and Congress.[15] The research credit's definition of qualified research continuously evolves through legal challenges, with significant reinterpretation of the law happening as recently as January 2015.[16]

The world of intellectual property has no bright lines. Similar to IRS definitions of qualified research, following implementation, each minutia of the qualified profits definition will need to be litigated, reinterpreted, and litigated again. Under the US proposal it is hard to conceive of a service or good that does not use a "design" or "knowhow" in its production. Tax expert Martin Sullivan notes that it is "likely that nearly all profits from manufacturing would qualify" for the lower tax rate.[17] Policymakers should be concerned that resources spent interpreting, litigating, and following the law will divert resources away from real economic innovation.[18]

Patent boxes introduce arbitrary distortions into the tax code. The tax benefits to the Boustany–Neal plan vary widely based on a corporation's R&D intensity and profitability. The disparate incentive will drive many firms to reorganize to maximize the tax benefits available.[19] Tax distortions of this type inefficiently change the allocation of real resources, often causing unintended consequences. The asymmetric subsidy from a patent box will inadvertently distort investments further. Anytime distortions are introduced into the tax system policymakers must weigh the benefits against the often high and uncertain costs.

COMMON JUSTIFICATIONS FOR PATENT BOXES

The patent box is a powerful tax incentive that will undoubtedly change corporate behavior. But policymakers' statements are unclear as to what exactly they hope the patent box will encourage. Some common justifications include intervening in the market to subsidize a positive externality, protecting US jobs from overseas competition, and increasing tax revenue.

Subsidizing Positive Externalities

There are few economic justifications for subsidizing profits from intellectual property. Economic intervention is usually justified when there is a market failure—or, in this case, when the returns to new ideas (R&D) cannot be fully captured in private profits. For example, inventors are granted exclusive rights to new ideas through patents so they can make profits on their investments. Economic theory suggests that an inventor would be reluctant to spend 10 years developing a new vaccine if a competitor could use the inventor's idea without spending the same 10 years of research, time, and money.

Contrary to sound economic policy, a patent box explicitly subsidizes corporate profits that are captured by the private firm.[20] Rather than incentivizing private investment in technologies that are under-explored (those with large and hard-to-capture benefits), a patent box incentivizes firms to invest in new technologies that return the largest private profits with the fewest externalities. Subsidizing profits also precludes startups from gaining any benefit. Patent boxes are poorly targeted to incentivize innovative research.

Patent boxes could also subsidize the positive externalities some economists predict from complimentary and geographically proximate manufacturing.[21] Still, policymakers need to show that a patent box is the best way

to target manufacturing. The United States federal government currently offers eight separate tax subsidies to manufacturing and at least six other direct subsidy programs administered through various agencies.[22] The patent box might not even subsidize manufacturing at all if its design follows that of the United Kingdom and does not tie physical activity to income.

Keeping Jobs in the United States

Patent boxes have not been shown to increase employment or manufacturing. A 10 percent tax rate on intellectual property profits is a strong incentive for multinationals to relocate patents and other knowhow to the United States. However, more American-owned intellectual property does not mean more jobs, innovation, or economic growth.

Whether a patent box succeeds in increasing employment depends wholly on the extent to which firms locate real activity alongside the income stream. A 2015 European Commission working paper on patent boxes corroborated an emerging body of research, finding that patent boxes decrease measures of innovation and real activity (the probability of companies' research activities and inventors moving to a patent box country).[23] This finding is less robust when patent boxes have strong rules that tie real activity to intellectual property. Forcing multinationals to bind income and real activity has proven to be a difficult task, as evidenced by the OECD base erosion and profit shifting project, which has spent the past two years studying the issue. Global tax incentives to shift intellectual property independent of real activity are strong and ever present.

Increasing Taxable Income and Tax Revenue

Patent boxes decrease tax revenue unequally and distort the tax base. Estimates suggest that the lower tax rate results in "substantial falls in tax revenue," despite a modest increase in taxable income.[24] The loss of tax revenue increases as more counties introduce similar tax privileges, diminishing the incentive to remain in the United States for tax reasons. Additionally, larger countries like the United States are even less likely to benefit from a patent box because of size and geographic isolation (compared to EU counterparts).[25]

Carving out special tax privileges for certain types of income places undue burden on the rest of the tax system. As more of the tax burden falls on a smaller portion of income, the tax system is made less efficient and less equitable. If policymakers are able to lower corporate tax rates (which is a necessary reform), they should do so for all businesses equally.

POLICY RECOMMENDATIONS FOR REFORM

The system for US corporate income taxation is broken and should be repealed or replaced. If they are unable to fundamentally overhaul the corporate tax system, policymakers should follow two simple guidelines for reform: lower the statutory rate to reduce inefficient incentives, and work to remove additional complexity.

The corporate income tax should be lowered for all profits, not just those attributable to qualified intellectual property. Lower rates reduce a variety of incentives that cause businesses to shift assets overseas. Lower corporate tax rates have been shown to significantly grow the economy, increasing investment, output and real wages.[26] Lowering tax rates is the most direct way policymakers can encourage innovation and growth. Economists consistently find that lower tax rates increase measures of innovation and R&D spending.[27]

Modest simplifications of the tax code include implementing territorial taxation, allowing full expensing, and rejecting the OECD's plan to further impose global tax rules on sovereign countries. Territorial taxation is an alternative to the worldwide system described above. A territorial system only taxes income earned in the United States and would allow $2 trillion of US profits parked overseas to be reinvested domestically.[28] Full expensing simply lets firms deduct all expenses when they are incurred, shifting taxes into the future to simplify accounting procedures and lower the after-tax cost of capital.[29] The OECD base erosion and profit shifting project is an attempt by high-tax OECD countries to impose more burdensome taxes on global business by harmonizing diverse international tax rules. The United States should resist the OECD's proposal.[30]

A patent box is not a desirable remedy to the perceived problem of profit shifting, it is merely a Band-Aid for the broken US tax code. The proper policy to retain and attract business investment in the United States is to lower the corporate tax rate and move toward a territorial tax system. The economic literature shows that a patent box will not increase innovation, job creation, or tax revenue. If anything, the patent box proposal will

make it harder to reform the tax code in the future. The introduction of any new tax privilege creates a constituency that becomes invested in the status quo and reliant on the new tax subsidy. Rather than make reform harder in the future, Congress should start by reducing the corporate tax rate.

NOTES

1. "Boustany & Neal Release Innovation Box Discussion Draft," Charles W. Boustany congressional website, July 29, 2015.

2. Martin A. Sullivan, "Can a Patent Box Promote Advanced Manufacturing?," *Tax Notes* (Tax Analysts), June 22, 2015; Martin A. Sullivan, "Do Patent Boxes Move More Than Patents?," *Tax Notes* (Tax Analysts), July 20, 2015. For a summary of the problems with the patent box, see Curtis S. Dubay, "An Innovation Box for the U.S.? Congress Should Focus on Business Tax Reform Instead" (Backgrounder No. 3049, Heritage Foundation, Washington, DC, August 18, 2015).

3. Kyle Pomerleau, "Corporate Income Tax Rates around the World, 2014," (Fiscal Fact No. 436, Tax Foundation, Washington, DC, August 2014).

4. The top marginal federal tax rate is 35 percent. State and local governments also tax corporate income at varying rates up to 12 percent, resulting in an average top combined US corporate tax rate of 39.1 percent. United States, Chile, and Hungary are the only countries not to lower rates in the past 5 years. See OECD, "OECD Tax Database," Table II.1—Corporate Income Tax Rates, accessed November 16, 2015; Andrew Lundeen, "Every OECD Country Except the U.S., Chile, and Hungary Has Lowered Its Corporate Tax Rate Since 2000," *Tax Policy Blog* (Tax Foundation), August 2014.

5. "Overseas Earnings of Russell 1000 Tops $2 Trillion in 2013," *Audit Analytics*, April 1, 2014; Richard Rubin, "Offshore Cash Hoard Expands by $183 Billion at Companies," *Bloomberg Business*, March 8, 2013.

6. A common tool in profit shifting is to leverage differences in transfer pricing rules between countries. Multinational firms are able to transfer assets and pay royalties between affiliates in different tax jurisdictions, but are required to conduct the transfer as if the subsidiaries in each jurisdiction were separate entities or "at arm's length." The prices recorded on each subsidiary's ledger are governed by "transfer pricing" rules. The arm's length standard is most difficult to monitor and comply with when transferring intangible intellectual property and paying royalties to affiliates for the use of intellectual property. Martin A. Sullivan, "International Tax Planning: A Guide for Journalists," *Tax Notes* (Tax Analysts), October 11, 2004; OECD, *Model Tax Convention on Income and on Capital 2010 (Full Version)* (Paris: OECD Publishing, 2012), chapter 9.

7. Economists disagree on the extent to which profit shifting has actually eroded OECD tax bases. The OECD itself has struggled to measure profit shifting. A 2015 OECD report concludes that the "significant limitations" of available data "can only provide 'general indications'" of the scale and economic impact of base erosion and profit shifting and that "such indicators must be heavily qualified by numerous caveats." See OECD, "BEPS Action 11: Improving the Analysis of BEPS," Public Discussion Draft, April 16, 2015, 25.

8. Martin A. Sullivan, "The Extraordinary Complexity of the U.K. Patent Box," *Tax Notes* (Tax Analysts), December 13, 2011.

9. Jason J. Fichtner and Jacob M. Feldman, "The Hidden Costs of Tax Compliance" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, May 2013).

10. Data from PWC and World Bank Doing Business Survey, ranking from Tax Foundation. See Kyle Pomerleau and Andrew Lundeen, "International Tax Competitiveness Index," Tax Foundation, 2014.

11. Charles Boustany and Richard Neal, "Section-by-Section Summary of the Innovation Promotion Act of 2015 Discussion Draft," House Committee on Ways and Means, July 29, 2015.

12. Bronwyn Hall and John Van Reenen, "How Effective Are Fiscal Incentives for R&D? A Review of the Evidence," *Research Policy* 29, no. 4–5 (April 2000): 463; Jason J. Fichtner and Adam N. Michel, "Can a Research and Development Tax Credit Be Properly Designed for Economic Efficiency?" (Mercatus Research, Mercatus Center at George Mason University, July 2015), 10.

13. The Ways and Means Committee requests feedback on a number of issues. For further reading on the problems of rushing implementation of the patent box, see Curtis S. Dubay, "An Innovation Box for the U.S.? Congress Should Focus on Business Tax Reform Instead," National Center for Policy Analysis, September 1, 2015; Charles Boustany and Richard Neal, "Innovation Promotion Act of 2015 Requests for Feedback," House Committee on Ways and Means, July 2015.

14. UK tax writers have also struggled to define "qualified research." Owing in part to its complexity, the UK patent box will have taken eight years to design and fully implement when it goes into full effect in 2018. Sullivan, "The Extraordinary Complexity of the U.K. Patent Box"; W. Wesley Hill and J. Sims Rhyne, "Opening Pandora's Patent Box: Global Intellectual Property Tax Incentives and Their Implications for the United States," *Intellectual Property Law Review* 53, no. 3 (2013): 386.

15. David Click, "Zeal and Activity in the Arena of the Research Tax Credit," *Tax Notes* (Tax Analysts), December 15, 2008.

16. Credit for Increasing Research Activities, 80 Fed. Reg. 2624 (proposed January 16, 2015) (to be codified at 26 C.F.R. pt. 1).

17. Martin A. Sullivan, "Benefits of Boustany–Neal U.S. Patent Box Vary Widely," *Tax Notes* (Tax Analysts), August 17, 2015.

18. Seth Giertz and Jacob Feldman, "The Costs of Tax Policy Uncertainty and the Need for Tax Reform," *Tax Notes* (Tax Analysts), February 25, 2013.

19. Martin A. Sullivan, "Benefits of Boustany–Neal U.S. Patent Box Vary Widely."

20. Lisa Evers, Helen Miller, and Christoph Spengel, "Intellectual Property Box Regimes: Effective Tax Rates and Tax Policy Considerations," *International Tax and Public Finance* 22, no. 3 (2014): 520–522.

21. Gary P. Pisano and Willy C. Shih, "Restoring American Competitiveness," *Harvard Business Review*, August 2009.

22. Gary Guenther, "Federal Tax Benefits for Manufacturing: Current Law and Arguments For and Against," Congressional Research Service, August 3, 2015, 10–13.

23. Innovation and real activity are measured by the probability of inventors moving to a country with a patent box. This trend changes direction or becomes insignificant (depending on industry) when patent boxes have conditions requiring physical colocation of real activity. See, Annette Alstadsæter et al., "Patent Boxes Design, Patents Location and Local R&D" (Taxation Paper No. 57, European Commission, June 2015).

24. Rachel Griffith, Helen Miller, and Martin O'Connell, "Ownership of Intellectual Property and Corporate Taxation," *Journal of Public Economics* 112 (April 2014): 22.

25. Estimates of the cross-tax elasticities of different countries, supporting this claim can be found in Griffith, Miller, and O'Connell, "Ownership of Intellectual Property and Corporate Taxation."

26. Hans Fehr et al., "Simulating the Elimination of the U.S. Corporate Income Tax" (NBER Working Paper No. 19757, National Bureau of Economic Research, December 2013).

27. Annette Alstadsæter et al., "Patent Boxes Design, Patents Location and Local R&D"; Christof Ernst and Christoph Spengel, "Taxation, R&D Tax Incentives and Patent Application in Europe" (Discussion Paper No. 11-024, Center for European Economic Research, 2011); Jason J. Fichtner and Adam N. Michel, "Can a Research and Development Tax Credit Be Properly Designed for Economic Efficiency?"

28. Jason J. Fichtner, Courtney S. Michaluk, Adam N. Michel, "Locking Out Prosperity: The Treasury Department's Misguided Regulation to Address the Symptoms of Corporate Inversions While Ignoring the Cause" (Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, December 2015).

29. Jason J. Fichtner and Adam N. Michel, "Options for Corporate Capital Cost Recovery: Tax Rates and Depreciation" (Mercatus Research, Mercatus Center at George Mason University, January 2015).

30. Andrew P. Morriss and Lotta Moberg, "Cartelizing Taxes: Understanding the OECD's Campaign Against 'Harmful Tax Competition'" (University of Alabama Working Paper, October 27, 2011), 43–44.