Thinking Outside the (Patent) Box:
An Intellectual Property Approach to Combating International Tax Avoidance

Report by **Andrew Hwang**

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Executive Summary

In light of the corporate tax cuts—included in the Tax Cuts and Jobs Act (TCJA)—this policy brief examines tax avoidance schemes that are likely to remain pervasive among multinational corporations and proposes policy tools to curb such practices. This paper specifically explores the intersections of the U.S. tax and intellectual property (IP) regimes to curb unproductive tax avoidance schemes exploited by some of the largest and most profitable multinational corporations, which cost the U.S. government upwards of $111 billion per year in lost revenue. This paper also puts forward proposals to correct these unproductive incentives and extractive practices. The policy proposals aim to correct unproductive incentives and extractive practices by using IP law and principals of eminent domain to deter these avoidance strategies. Instead of being motivated to park corporate cash abroad, multinational corporations would more likely seek out other uses, such as investing more in research and development (R&D), for instance. If policymakers are truly concerned about a tax system that encourages innovation, productivity, investment, and job creation, they should carefully consider this proposal.

Part I of this brief lays out in greater detail the intersection between tax and IP policies that help fuel corporate tax avoidance through offshoring IP. Part II provides further context of the problem by identifying specific cases and practices by technology, pharmaceutical, retail, and consumer goods companies. Part III outlines a two-pronged solution to this issue put forward by legal scholars. In Part IV, this brief evaluates the changing regulatory landscape alongside alternative proposals and explores the potential challenges in implementing this proposal.

Introduction

Dissatisfaction with corporate tax cuts—included in the Tax Cuts and Jobs Act (TCJA)—has offered an opportunity to examine some of the biggest problems with the U.S. tax code and explore innovative solutions to curb pervasive and economically unproductive corporate tax avoidance schemes. There are a variety of complex maneuvers corporations use to avoid corporate taxes, but “offshoring” intellectual property (IP)—by way of legally moving the ownership of the IP to a foreign subsidiary—has become a favored vehicle to shield profits from the reach of the Internal Revenue Service (IRS). As agency rule makers decipher and implement the numerous and complex rule changes mandated by the corporate tax law, the effects on tax avoidance schemes remain unclear. However, one area economists and tax experts on both sides of the aisle seem to agree on is that the bill failed to significantly address the country’s multinational tax avoidance problem.[1] A recent panel at the Economic Policy Institute[2] concluded that while the bill might curb some forms of avoidance, it also left many unchanged and opened the doors for new forms of tax avoidance.

Pioneered by pharmaceutical companies such as Eli Lilly in the 1960s, “IP offshoring” has been adopted by some of leading and most profitable companies, including Apple and Google/Alphabet, as well as consumer goods and retail giants, such as McDonalds and Starbucks, enabling them to avoid U.S. corporate tax rates.

[1] See, for example, Reuters (2018).
[2] See Economic Policy Institute (2018) for video and slides.

IP, unlike physical assets such as machinery, buildings, etc., is an intangible asset with high profit-generating potential. This means that IP is easily transferable or easy to move on paper, but carries a degree of uncertainty when it comes to determining its underlying long-term economic value. These IP offshoring schemes take full advantage of these qualities.

U.S. corporations, through legal and accounting gymnastics, move their IP to a foreign corporate affiliate in a lower tax jurisdiction by leasing the IP in exchange for a heavily discounted royalty payment. The value of the royalty payment is considered discounted because it intentionally excludes the full profit-generating potential of such IP. By transferring significantly deflated IP abroad, corporations get to offshore their IP at minimal costs. They get to reap further benefits by being taxed for an undervalued asset at the heavily reduced tax belonging to low-tax or, more often than not, tax-haven jurisdictions.

This tax avoidance tactic has both tax and IP policy implications. From a tax perspective, the U.S. is losing upwards of $111 billion per year (Clausing 2016). This practice is also problematic from an IP law perspective. An IP regime is designed to toe a fine line that balances benefits derived from greater innovation and creativity against the economic costs associated with monopolistic pricing and exclusivity over such advancements. The fact that large corporations have uniquely been able to leverage their international presence and considerable resources to engage in tax law arbitrage using their IP generates significant unforeseen economic and social costs, while creating only limited incentives for innovation.

Policymakers often respond with tax-based solutions, such as lower corporate tax rates, to dissuade corporations from offshoring IP. By doing so, however, policymakers risk instigating a “race to the bottom” that leaves only corporations as winners. A viable tax fix requires global coordination, something that is difficult to achieve given countries’ inherent interest in carving a larger slice of the tax-revenue pie for themselves, as opposed to ironing out regulatory kinks. Multinational corporations are able to take full advantage of this collective action problem because of their freedom to transact globally and the singular goal of minimizing their tax liability.

Multinational corporations are extremely effective at identifying the misalignment between tax and IP law. Instead of working off of existing tax rules to tweak around the margin, policymakers should look to the mechanics of IP law to tackle this problem. Experts, such as Andrew Blair-Stanek of University of Maryland, proposes an appealing IP law-based proposal that seeks to do just that. This proposal turns the table by incorporating the corporate valuation of IP to be offshored (which, in many cases, is lowballed) into IP law to be used against multinational corporations. First, on the occasion that a multinational seeks to enforce its IP right to exclude a competitor from unauthorized use of its IP, allow said competitor—or defendant—to use the IP’s transfer price as evidence against the multinational plaintiff during the IP infringement litigation (Blair-Stanek 2015).

Second, apply the principles of eminent domain to IP by enabling the government to take IP from multinational corporations that aggressively engage in IP-based profit-shifting schemes, pursuant to the Takings Clause of the Fifth Amendment, in exchange for the IP’s valuation as “just compensation” (Blair-Stanek 2016). Changing the calculus of the legal risks of IP litigation would constitute a strong deterrent.

This proposal aims to correct these unproductive incentives and extractive practices. Instead of being motivated to park corporate cash abroad, multinational corporations would more likely seek out other uses, such as investing more in research and development (R&D), for instance. If policymakers are truly concerned about a tax system that encourages innovation, productivity, investment and job creation, they should carefully consider this proposal.

Part I of this policy brief lays out in greater detail the intersection between tax and IP policies that help fuel corporate tax avoidance through offshoring IP. Part II provides further context of the problem by identifying specific cases and practices by technology, pharmaceutical, retail, and consumer goods companies. Part III outlines Blair-Stanek's two-pronged solution to this issue. In Part IV, this brief evaluates the changing regulatory landscape alongside alternative proposals. Lastly, Part V explores the potential challenges in implementing this proposal.

This Proposal and the 2017 Tax Cuts and Jobs Act

In addition to its purported growth benefits, the corporate side of the 2017 Tax Cuts and Jobs Act (TCJA) was sold on the notion that it would streamline the corporate tax system and curtail multinational corporate tax avoidance. While these are worthy goals, growing expert consensus suggests that the bill failed at these objectives. This paper was drafted before the passage of the TCJA in order to address one large, but specific, subcategory of multinational tax avoidance: the profit shifting of IP to low or zero tax jurisdictions. Although some tax avoidance problems and solutions described here may be less relevant since the passage of the TCJA, the degree to which recent practices will change remains unknown. Initial analysis by government and independent experts suggests that most existing avoidance tactics will remain in use (Economic Policy Institute 2018).

The Congressional Budget Office (CBO) predicts IP-related tax avoidance will lessen but not disappear. Specifically, they state that IP already located in tax havens will remain there, while new provisions will "deter some small amount of profit shifting" (CBO 2018). This leaves the door open to the continuation of past avoidance practices, as well as future IP-related avoidance.

However, while the pending agency rule writing and international negotiations may alter the applicability the proposals put forward in this paper, they are unlikely to holistically invalidate the ideas and concepts discussed. This paper takes pre-TCJA tax laws as a baseline and discusses some the problems therein, as well as some possible solutions, which remain largely applicable to the TCJA regime.

I. The Problem of "IP OffShoring"

There is general consensus among the American public that the federal corporate tax system should be revamped, though not necessarily in the form of cutting the corporate tax rate. According to a recent Gallup poll, 67 percent said that corporations are paying too little in federal taxes (Newport 2017). This sentiment is hardly baseless, given that the share of tax revenue from corporations has declined from around 30 percent in 1950 to 9.2 percent in 2016, despite rocketing growth in after-tax corporate profits (see Figure 1a below).

Figure 1a

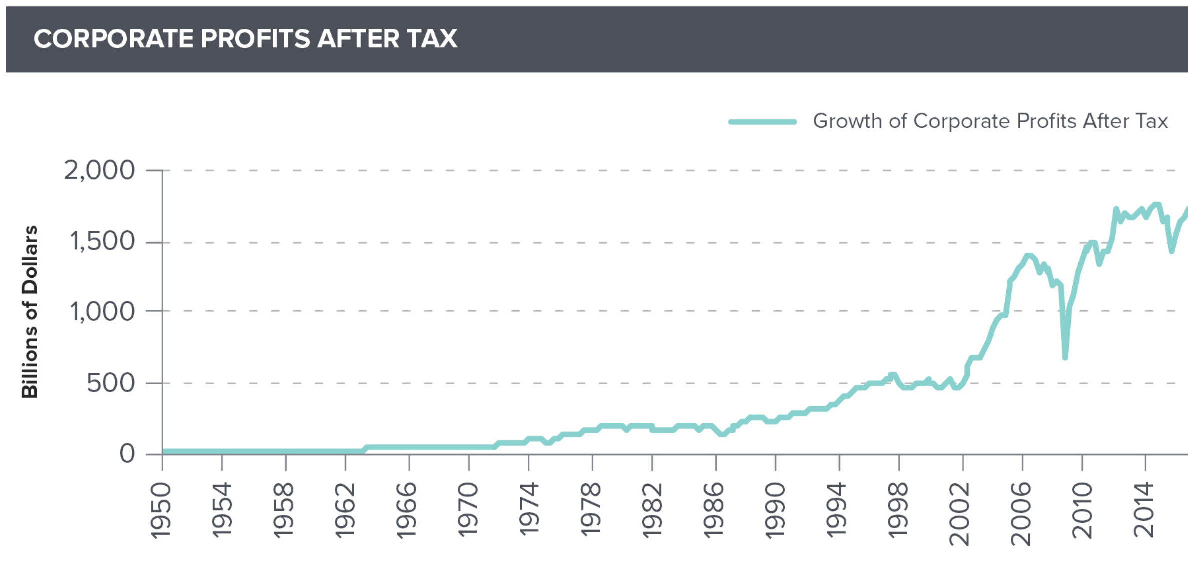

FIGURE 1a Source: FRED Economic Data, Federal Reserve Bank of St. Louis; U.S. Bureau of Economic Analysis https://fred.stlouisfed.org/series/CP.

Figure 1b

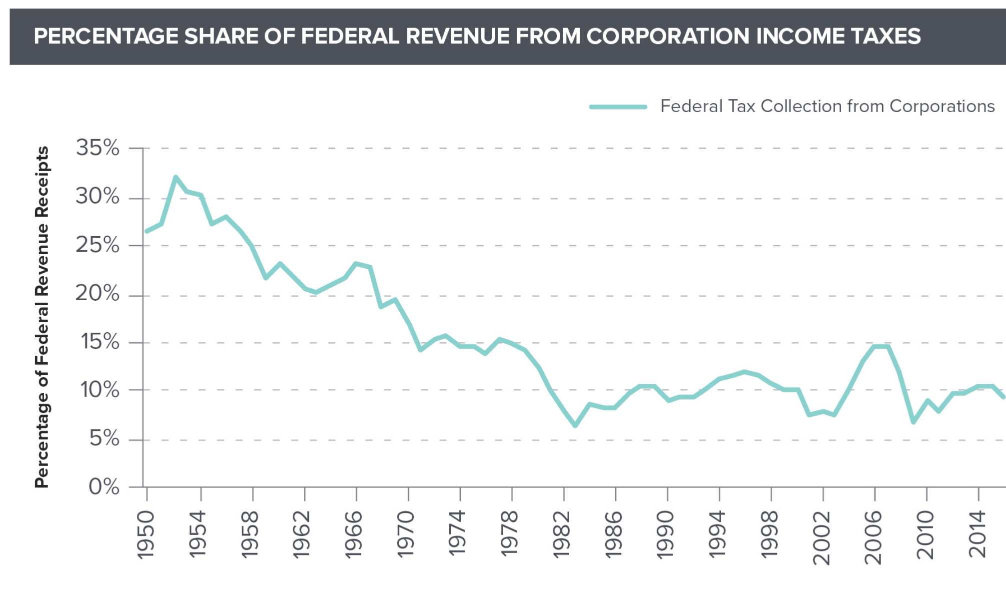

FIGURE 1b Source: Office of Management and Budget, Executive Office of the President: https://www.whitehouse.gov/omb/budget/Historicals.

A leading cause of this discrepancy between growing corporate profits and decreasing corporate tax collection lies in the ability of multinational corporations to exploit inconsistencies in the global tax system by artificially "shifting" profits to a low-tax jurisdiction, such as Ireland and the Netherlands, as well as the usual suspects Bermuda and the Cayman Islands. This form of tax avoidance, dubbed "base erosion and profit shifting" (referred to in this paper as "profit shifting"), has cost the federal government as much as $111 billion on an annual basis (Blair-Stanek 2016; Clausing 2016).

One tried-and-true profit shifting scheme is to utilize IP as a vehicle to offshore corporate profits. The rationale is relatively straightforward. IP, unlike physical assets, such as machinery, buildings, etc., can be easily transferred to other tax jurisdictions (Blair-Stanek 2015). This means that the profit generated by the transferred IP, in the form of royalties or licensing fees that represent the costs for using said IP, can similarly be "shifted" abroad with relative ease. Pioneered by pharmaceutical companies, such as Eli Lilly in the 1960s, "IP offshoring" was quickly adopted by tech companies such as Apple and Google (which has since been reorganized as Alphabet), as well as consumer-goods and retail giants, spawning a burgeoning cottage industry of accountants, appraisers, consultants, and lawyers.

HOW THE GAME IS PLAYED[3]

So how exactly does this work? A hypothetical tech company, "eVasion," develops a valuable patent out of its U.S. headquarters (or "eVasion US"). The goal, of course, is to make sure that the profits generated by the patent are taxed at the lowest rates possible. To do so, eVasion US sets up a subsidiary, called eVasion Shamrock Holdings, in a low-tax jurisdiction, such as Ireland, and then finds a way to legally transfer the economic benefits of the patent from eVasion US to eVasion Shamrock Holdings.

Under existing tax rules, the most favorable method to transfer IP-based profits between two affiliated entities is through licensing (Blair-Stanek 2015). eVasion Shamrock Holdings pays a licensing fee—a royalty—to the patent-owning affiliate, eVasion US, to legally use the patent. Through this arrangement, the profit generated from the patent is allocated to eVasion Shamrock Holdings pursuant to the license, while eVasion US retains legal ownership of the patent, allowing for its continued protection under U.S. IP law (Blair-Stanek 2015).

U.S. tax rules require royalty payment between two affiliated entities to be established "at arm's length."[4] What this means is that the payment should be comparable to one made between eVasion Shamrock Holding and any other company. So, the key to this set-up is the valuation of the royalty payment, which should reflect the value of the patent. This valuation is known as "transfer pricing." In the case of eVasion, the U.S. headquarters would, in theory, set the royalty payment value from eVasion Shamrock Holding at an amount the headquarters believes the patent to be worth.

But herein lies the problem. It is extremely difficult to objectively determine IP's profit-generating potential, especially given how its commercial application is often shrouded in secrecy by additional layers of proprietary information and internal data. In this context, even though eVasion is legally required to hire appraisers who

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[3] See Section II of this policy brief for real-world examples.

[4] 26 U.S.C. § 482, 26 C.F.R. § 1.482-1 (2013).

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would establish the "arm's-length" royalty payment that is due from eVasion Shamrock Holding, the appraisers have a strong incentive to provide a "lowball" estimate given (1) eVasion is their client and would like this value to be as low as possible to minimize taxable income and (2) government regulations concerning IP valuation, while detailed, tend to yield imprecise results and give appraisers room to maneuver (Drucker 2010; Blair-Stanek 2015). And with a low valuation for the royalty, or transfer price, eVasion first benefits from a low tax on the "transfer price" transaction, and subsequently benefits from the low tax rates in Ireland, since profits generated by the licensed patent will now be booked to eVasion Shamrock Holding.

Figure 2

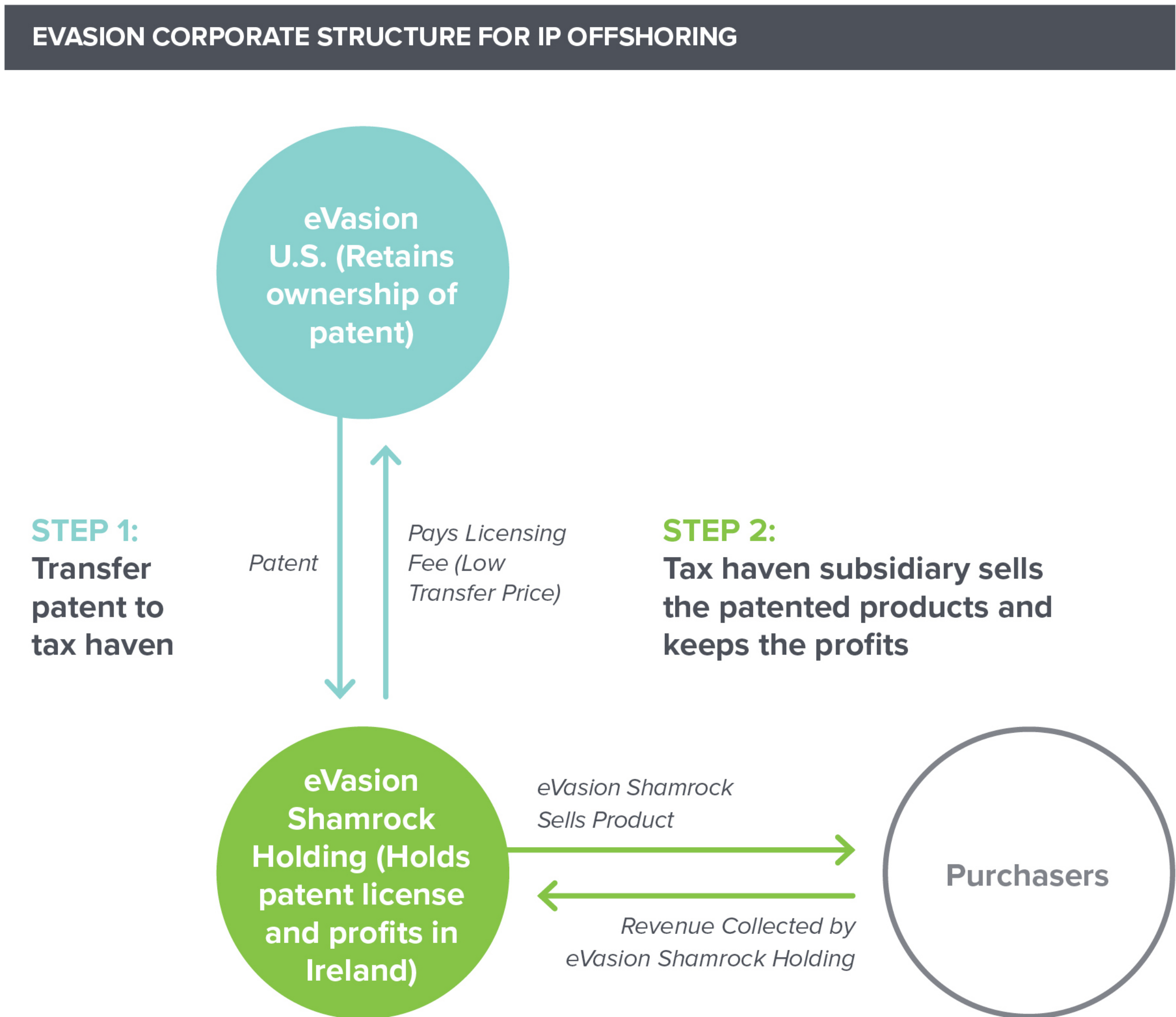

FIGURE 2 Source: Blair-Stanek (2016) and amended by the author to reflect the author's example.

HOW INTELLECTUAL PROPERTY AND TAX RULES OVERLAP

So what is the issue if this is legal? The problem is corporations are able to aggressively reduce their tax liability by understating the economic value of their IP.

Going back to the eVasion example, the transfer is considered commercially justifiable by eVasion because the company anticipates its IP will be able to generate higher returns than the transfer price eVasion US declared when offshoring its IP to eVasion Shamrock Holdings. Presumably, this differential would need to be large enough that the tax savings realized from booking the profits in a lower tax country such as Ireland, would surpass the cost of the IP transfer. In seeking to ensure that this would be the outcome, the appraisers hired by eVasion arrive at a low valuation to minimize the tax on the transfer price. In other words, a company, like eVasion, has the incentive to lowball the transfer price of their IP at the time of transfer to its subsidiary. The actual economic value becomes apparent in the form of real profits from sales to third parties. They simply understate the value of the IP to the IRS, and the real value becomes apparent later.

THE ECONOMICS OF IP: WHY THIS MATTERS FOR POLICYMAKERS AND SOCIETY

Corporate IP offshoring has undesirable outcomes from both a tax as well as IP perspective. As mentioned above, profit shifting tricks like this allow corporations to pay a decreasing share of taxes despite record profits. From an IP and even broader macroeconomic perspective, this practice can hinder innovation, in direct opposition to the goal of IP law, slow economic growth, and result in wasted resources on appraisers, consultants, and lawyers needed to set up these elaborate profit shifting arrangements.

The policy challenge posed by corporate IP offshoring is that it cannot be tackled by IP or tax policy alone. The issue is rooted in both tax and IP policy, two specialized fields that often operate in isolation (Blair-Stanek 2015). Yet, in this instance, it behooves policymakers to grapple with how these two disciplines interact so that they can devise an appropriate solution.

An IP regime, in the simplest terms, is designed to encourage innovation of goods that are expensive to develop, but cheap to copy (Boyle 2008). For technological innovation or new works of artistic expression, those willing to risk the time and capital are rewarded with monopolistic powers to legally exclude others from access in the form of patents and copyright (Boyle 2008). The idea is to decentralize the decision making for desirable innovation to the market, but ensure the IP owner will capture some economic benefit (Boyle 2008).

There is, however, a flip side. Since the reward for creation and innovation is based on the “ability to exclude,” society has to absorb the monopolistic pricing costs (static costs)—i.e., consumers pay higher prices that result from a less competitive market—while foregoing some level of “derivative” innovation that would require access to the IP by third parties to be made possible (dynamic costs). The optimal IP regime must strike a balance. Too weak a reward would not incentivize inventors and creators to break new ground, while too great a reward translates to an overly costly regime for consumers and society.

However, the designers of the U.S. IP regime did not foresee corporations’ abilities to take advantage of this system to lower corporate taxes through jurisdictional inconsistencies in corporate tax rules. This amounts to a form of “extra-normal” reward on IP that is solely available to multinationals and not to the inventors or creators. Multinational corporations are incentivized to park profits abroad—money that could otherwise be reinvested in

R&D or pay higher wages to workers—because of their unique position to extract more rent from IP. Offshoring gives multinationals a cut of the profits that is larger than envisioned under the IP regime, granting them more market power by having more resources to attract top engineering, scientific, and other creative talent from non-multinational companies (e.g., startups) whose use of R&D funding could lead to more impactful innovations. IP offshoring by corporations thus impedes further innovation, at a level that policymakers likely have not anticipated. This results in a distorted IP regime, instead of incentivizing the creation and efficient distribution of socially desirable goods, while minimizing the negative effect of monopolistic pricing (static costs) and restriction on future innovation (dynamic costs).

WHY POLICY CHANGE IS WARRANTED: CORPORATIONS WIN, WHILE MARKET COMPETITION AND SOCIETY LOSES

The results of IP offshoring and profit shifting in general leave only one winner: multinational corporations, including their shareholders and corporate executives. The U.S. government and society at large are clear losers in this scenario. Not only is the government losing out on potential tax revenue, it also continues to extend IP protections that enable these schemes with little in return.

Competitors and potential market entrants are also harmed. To develop derivative IP, they must overcome the incentive of multinational corporations to protect the revenue-generating potential of their IP rights and to secure the consequential tax savings. Multinationals also benefit from a cost-structure advantage in a way not available to smaller competitors. This makes it relatively costlier for competitors to operate and provides the global firms with more opportunity and resources to monopolize the market.

At the same time, market competitors who lack the scale and IP base of multinational corporations will be at a disadvantage. This is not due to inferior "skill, foresight, and industry,"[5] the oft quoted descriptor of healthy market competition, but simply because they do not have the resources available to allow them to establish a global organizational structure dedicated to tax avoidance. Researchers further note that such profit shifting activities result in misattribution of economic activities, resulting in productivity slowdown (Guvenen et al. 2017).

[5] 148 F.2d 416 (2d Cir. 1945) at 430.

II. Real-World Examples

It is useful to provide real-world examples demonstrating just how elaborate these profit-shifting schemes are and how commonplace they have become. Far from being limited to tech and pharmaceuticals, or industries commonly associated with the use of IP, IP-based profit shifting schemes are so ubiquitous that it may come as a surprise that many of the multinationals one would encounter in daily life, such as Starbucks or SABMiller, are aggressively pursuing this tax-avoidance strategy.

ELABORATE SCHEMES WITH SILLY NAMES: “DOUBLE IRISH WITH A DUTCH SANDWICH”

Sounding vaguely like something that you would order at a pub, the “Double Irish with a Dutch Sandwich” is the industry term describing an elaborate version of the eVasion tax-avoidance strategy described above. Pioneered by Apple, the “Double Irish” has become the poster child of the sheer complexity of corporate tax-avoidance strategies.

Going one step beyond the eVasion setup, the goal of a “Double Irish” is actually not to benefit from the Irish corporate tax rate, which is currently 12.5 percent (Taylor 2017). Rather, its goal is to benefit from the zero percent tax rates of tax havens that can often be found in the Caribbean. Thus, a considerable amount of legal and accounting gymnastics is needed to clear regulatory hurdles of the U.S., as well as the European Union (EU), in order to achieve this goal.

Looking first at the “Double Irish” portion, this refers to the creation of two Irish entities (as opposed to just one in our previous example), Irish HoldCo and Irish SaleCo. The purpose here is twofold: first, to take advantage of quirks under Irish tax laws so that income can be artificially booked to a zero-rate tax haven, and second, to circumvent Subpart F of the U.S. Tax Code—a section of the tax code that is, in part, designed to prevent tax avoidance through the payment of royalties between two related entities (IRS 2014).

Under Irish law, an entity formed in Ireland is considered a tax resident of an overseas tax haven, benefitting from that jurisdiction’s tax rates, if the entity’s “effective centre of management” is located in said tax haven (Bank 2013, 1311). So, Irish HoldCo is set up (in Ireland) with its center of management in Bermuda, making it a Bermuda entity under Irish law, with Irish SaleCo as its wholly owned subsidiary. Just like in the eVasion example, the U.S. parent company would license its IP to Irish HoldCo, who would then sublicense to Irish SaleCo. This allows Irish SaleCo to collect revenue off the IP while paying roughly the same amount in royalty to Irish HoldCo, zeroing out its Irish net income (Bank 2013).

This gimmick involving Irish HoldCo and SaleCo should theoretically come under the crosshairs of Subpart F, but due to a regulatory wrinkle known as the “check the box” rule, the U.S. parent can elect to have Irish SaleCo treated as a “disregarded” entity, thereby making Irish HoldCo and SaleCo a single entity for U.S. tax purposes. So the payment by Irish SaleCo to HoldCo is not deemed as a payment between “related entities” from a U.S. tax standpoint and sidesteps the triggers of Subpart F (Pesta and Barner 2015).

Taking it one step further, to eliminate any Irish withholding tax on royalty payment from Irish SaleCo to HoldCo, a Dutch entity is inserted between the two, hence the “Dutch Sandwich.” Under this arrangement, Irish

HoldCo sublicenses the IP to DutchCo, and DutchCo to Irish SaleCo. The royalty payment from SaleCo is thus transferred tax free to DutchCo pursuant to EC Directive 2003/49 and a small fee is collected on the rerouted payment from DutchCo to Irish HoldCo (Wood 2016). The result is a mind-boggling organizational chart, represented in Figure 3 below, with virtually no tax being paid on profits made off of the underlying IP.

Figure 3

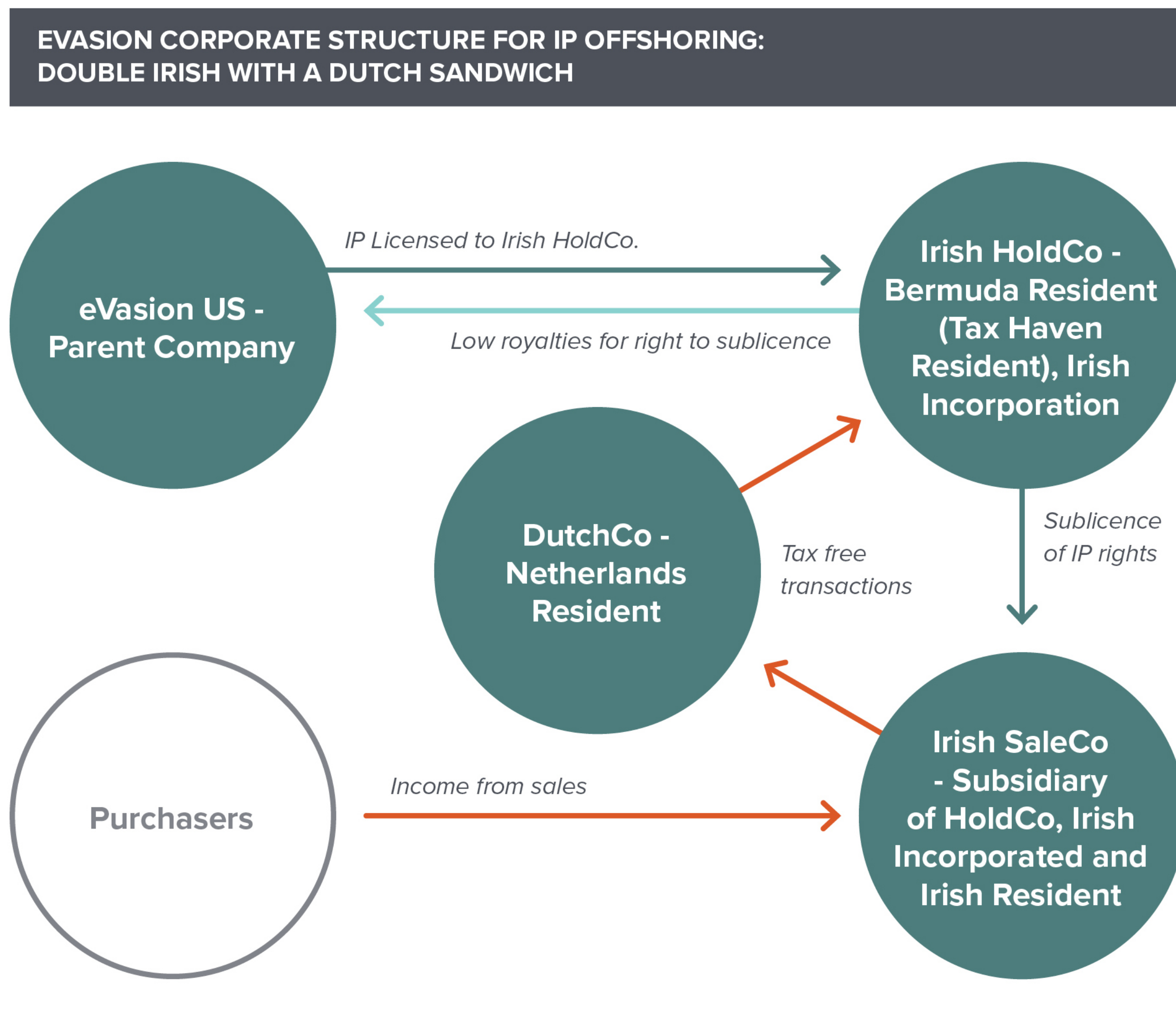

FIGURE 3 Source: Thorne (2013) and amended by the author to reflect the author's example.

MEET THE PERPETRATORS

Tech. It should not be surprising that multinational tech companies were the first to devise and embrace the "Double Irish with a Dutch Sandwich" and similar setups. Apple was a pioneer of the "Double Irish" back in the 1980s (Duhigg and Kocieniewski 2011). The "latest and greatest" model that includes the "Dutch Sandwich" is aggressively used by the likes of Google and Facebook (Wood 2012).

Apple. The one who started it all, Apple has been around long enough that it has witnessed the emergence of different iterations of tax avoidance schemes. Apple's actions came under public scrutiny most recently in 2016,

as a result of the European Commission's ordering of the Irish government to collect €13 billion, plus interest, from the company for "undue tax benefits" received from the former (Boyle 2016). Employing an adapted form of "Double Irish," Apple set up its operating subsidiaries overseas, with the majority in Ireland (see Figure 4 below). The result was that at the close of the third quarter in 2016, out of Apple's total cash holding of $232 billion, $214 billion was held abroad.

Additionally, Apple entered into an agreement with the Irish government for preferential tax treatment in exchange for jobs and investments. This translated into an effective tax rate of 0.005 percent in 2014 (Taylor 2016). This arrangement with the Irish government was deemed by the European Commission to be in violation of EU state aid rules, and the basis for its 2016 decision (Boyle 2016).

Figure 4

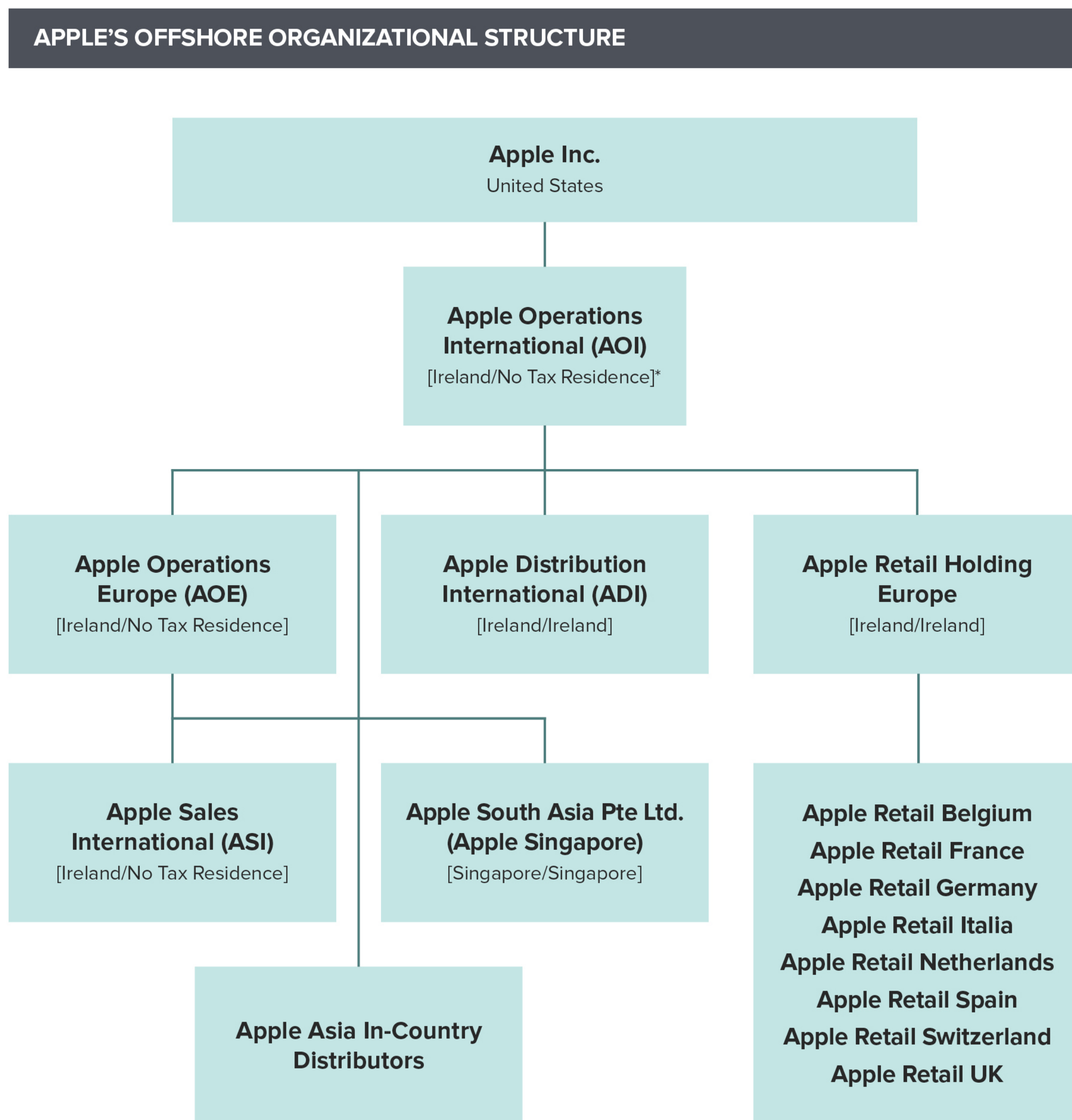

FIGURE 4 Prepared by the Permanent Subcommittee on Investigations, May 2013. Source: Materials received from Apple Inc.

Google/Alphabet. As mentioned above, Google, now under the parent company Alphabet following the 2015 corporate restructuring, has embraced the "Double Irish with a Dutch Sandwich" since 2004 (Kahn and Van Der Starre 2016). In 2016, Alphabet reported a tax expense of $4.7 billion, amounting to an effective rate of 19 percent (Helman 2017). This has allowed Alphabet to increase its earnings, which corresponds to a higher stock price (Drucker 2010).

This leaves a sour taste, especially given how Google/Alphabet's success was due in part to taxpayer support in the form of National Science Foundation (NSF) grants and scholarships that funded the research of Larry Page and Sergey Brin,[6] the founders of Google. They received this funding while they were students at Stanford University, and their findings were incorporated into the now ubiquitous search engine (Drucker 2010). Despite Google's well-known declaration in its employee code of conduct, "Don't be evil" (which is noticeably absent from the code of conduct for Alphabet), the company is perfectly comfortable with avoiding paying its fair share of taxes on profits derived from success that was made possible thanks to the contribution of taxpaying Americans.

Pharma. Pharmaceutical companies are also well suited to exploit IP-offshoring tax avoidance techniques. Given the industry's reliance on patents for profitability, there is both a strong incentive and easy way to reroute profits beyond the reach of the IRS. Pharma giants like Pfizer, Gilead, and AstraZeneca have each benefitted from similar accounting gimmicks.

Pfizer. From 2010 through 2014, Pfizer, the manufacturer of Advil, Lipitor, Lyrica, and Viagra, reported a loss of more than $16 billion in the U.S., but earnings of $89 billion abroad (Clemente 2015). Considering that 38 percent of the company's sales were made in the U.S., the extent of the discrepancy is startling. To effectively implement the tax avoidance scheme, Pfizer has created a structure of 151 subsidiaries in 10 tax havens (Clemente 2015).

While Pfizer aggressively engages in tax avoidance, it also seeks to maximize the benefits it can reap from the public. Sales to the U.S. federal government constituted five percent of Pfizer's U.S. revenue in 2014 (Rice and Clemente 2016b). Moreover, from 2010 through 2014, the company received a tax break—at a cost to American taxpayers of $591 million—that was meant to incentivize research and development (Rice and Clemente 2016b). Pfizer has, on the one hand, effectively sought government handouts to support the development of new patents, while on the other it has maximized the tax savings on profits generated by the same patents by licensing or otherwise transferring them to offshore subsidiaries.

Gilead Sciences. A well-known producer of antiviral drugs like Harvoni and Sovaldi, Gilead's tax avoidance efforts have come under media scrutiny, thanks in part to accusations of price gouging. A Senate Finance Committee investigation concluded "the company had sought to maximize profits at the expense of making the remedies accessible to patients" (Merle and Johnson 2016). As an example, a 12-week treatment of Sovaldi was priced at $84,000 while the manufacturing cost is estimated to be between $100 and $1,400 (Rice and Clemente 2016a).

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[6] The NSF provided approximately $4.5 million in support of the Stanford Integrated Digital Library Project, under which Page and Brin conducted their research (National Science Foundation 2004).

As noted in the report published by Americans for Tax Fairness, the shocking prices of Gilead's drugs provided a way to corroborate Gilead's tax avoidance strategy (Rice and Clemente 2016a). In 2013, the company's Chief Financial Officer disclosed on an earnings call that the IP for its hepatitis C treatment "is domiciled in Ireland" (Rockoff 2013). Following the release of these drugs, Gilead was oddly able to record more offshore profits than revenue. Moreover, despite the U.S. share of revenue being 65 percent in 2015, the U.S. share of pre-tax profits was 37 percent. And like Pfizer, Gilead's organizational structure included 12 subsidiaries that resided in tax havens (Rice and Clemente 2016a). Thanks to this arrangement, Gilead's effective worldwide tax rate dropped from 27.3 percent in 2013 to 16.4 percent in 2015 despite growing profits. (Rice and Clemente 2016a).

Consumer Goods and Services. Patents are not the only form of IP that is being exploited as a vehicle for tax avoidance. Consumer goods and services companies are taking full advantage of the economic potential of trademarks and trade dresses. While their products range from beer to burgers, these companies nevertheless share a consistent strategy.

SABMiller. SABMiller is an example of not just how companies use IP for tax avoidance purposes, but also how these strategies can be used against developing countries. SABMiller was, until its acquisition by Anheuser-Busch InBev in 2016, the second largest brewer in the world. In a 2010 report by ActionAid, it is noted that a large number of trademarks for SABMiller's brands sold in Africa were either registered or transferred from Africa to SABMiller's Dutch subsidiaries (Hearson and Brooks). Local operating companies pay hefty royalty payments to the Dutch subsidiary, translating into a significant reduction of SABMiller's taxes. Based on the report's estimates, SABMiller's tax maneuvers have deprived governments in developing countries as much as GBP 20 million per year, or the equivalent of what's needed to provide education to one million children (Hearson and Brooks 2010).

Starbucks. In 2012, Starbucks' tax avoidance activities became the subject of press coverage in the U.K. when it was revealed that that the ubiquitous coffee chain has been telling two stories—one of financial success that was disclosed to investors and market analysts and another of consistent losses that was reported to HM Revenue and Customs (Bergin 2012; Kleinbard 2013). The result was that in the three years leading up to 2012, Starbucks paid no income tax on sales of GPB 1.2 billion (Bergin 2012).

Starbucks achieved this by adopting a transfer pricing strategy that combined the offshoring of trademark and patented business processes with an international supply chain for commodities, such as coffee beans, that is "optimized" for tax purposes (Bergin 2012; Kleinbard 2013). Just like the examples above, the royalty payments and commodity transfer prices paid by the Starbucks' U.K. entity to what was then Starbucks' European headquarters located in Amsterdam effectively wiped out the former's pre-tax profits.

The public outcry that ensued led Starbucks to relocate its European headquarters to the U.K. In an effort to repair its image, the company has dialed down its tax avoidance strategies. In addition to a GBP 20 million voluntary corporation tax contribution, both the European headquarters and the U.K. operating entity posted profits that resulted in tax bills that exceeded the total tax contribution made between 1998 and 2012 (Houlder 2016).

McDonald's. The fast food chain that is synonymous with American cultural influence is no stranger to the IP-based profit-shifting game played by multinational corporations. Similar to Apple's arrangement with Ireland,

McDonald’s was able to secure a favorable concession from Luxembourg that allowed its European headquarters, which was then based in Luxembourg, to receive royalty payments for “know-how and branding” from restaurants in Europe (and Russia) tax free (Toplensky 2016). Thanks to such generous terms, profits totaling $1.8 billion earned by the Luxembourg entity since McDonald’s 2009 reorganization were taxed on average at 1.49 percent.

Walking in the footsteps of Apple, McDonald’s is also looking at a possible order from the European Commission to pay $1.6 billion in back taxes between 2009 and 2015 to Luxembourg (Drozdiak 2016). Taking steps to mitigate negative press coverage as well as pressures for policy change, McDonald’s took a page from Starbucks’ book and relocated the regional headquarter functions from Luxembourg to the U.K., such that royalty payments no longer benefit from reduced tax rates (Drozdiak 2016).

III. Optimal Solution: Correcting Underlying Corporate Incentives Through IP Law

With the media and the public's increasing attention and concern about the prevalence of the IP-based profit-shifting strategies employed by multinational corporations, policymakers are exploring methods to combat this issue. However, nearly all proposals on the table so far are tax-centric approaches—either in the form of positive, i.e., lower, tax incentives to attract multinationals or more stringent regulatory requirements to avoid these schemes. Unfortunately, tax approaches suffer a fundamental flaw: they don't involve collective action and global coordination. Providing incentives (in the form of discounted corporate tax rates) creates an environment prone to "race to the bottom" (see Alstadsaeter et al. 2015). Stricter regulatory oversight that lack seamless international coordination among tax authorities runs the risk of creating new opportunities for tax arbitrage.

Instead of working off of existing tax rules to tweak around the margin, policymakers should look to the mechanics of IP law to tackle this problem (Blair-Stanek 2015).[7] Multinational corporations are extremely effective at identifying the misalignment between tax and IP law, allowing them to profit from the difference between the economic value of IP and transfer prices. The IP-based approach turns the tables by using the designated transfer prices (which, in many cases, is lowballed) against these global corporations (2015; 2016).

There are two methods by which this could be accomplished.

First, on the occasion that a multinational seeks to enforce its IP right to exclude a competitor from unauthorized use of a piece of IP that has been transferred to an international tax haven, allow said competitor—or defendant—to use the IP's transfer price as supporting evidence for curtailing the IP protections granted to the multinational plaintiff during the IP infringement litigation in light of tax avoidance abuses (Blair-Stanek 2015).

Second, apply the principles of eminent domain to IP by enabling the government to take IP from a multinational that aggressively engages in IP-based profit-shifting schemes, pursuant to the Takings Clause of the Fifth Amendment, in exchange for the IP's transfer price as "just compensation" (Blair-Stanek 2016).

The strength of this proposal is that, in recognizing the difficulty of accurately assessing the value of IP, the burden does not fall upon the government to reassess the value to come up with a penalty. Instead, it forces multinational corporations to suffer the consequences of their lowballed valuations through private litigation and/or public action:

(1) *Private Action*: The low transfer price could be used by a competitor—defendant—to sue a multinational corporation—plaintiff—in order to attack the validity of the IP, restrict the scope of the IP, lower the damages, undercut plaintiff's arguments for an injunction, and claim misuse of the IP at issue. This private threat would serve as a deterrent to misprice IP, thus making the profit-shifting scheme much less economically desirable.

[7] This is the premise of Blair-Stanek's proposal.

(2) *Public Action*: The government should invoke the "Takings Clause" of the Fifth Amendment to take some percentage of IP from multinational corporations engaging in egregious tax avoidance at the transfer price.

PRIVATE ACTION

Changing the calculus of legal risks for multinational corporations concerning IP litigation would constitute a strong deterrent, and the transfer price is the perfect vehicle to be introduced to private IP litigation. Since the transfer price represents how a multinational corporation values its IPs to the IRS, it can serve as the basis for "natural extensions of IP law" (Blair-Stanek 2015). The supporting documents prepared by appraisers and submitted to the IRS are not privileged and therefore are discoverable as part of the litigation (Blair-Stanek 2015). A low transfer price could thus be used by the defendant against the plaintiff to (1) attack the validity of the IP, (2) restrict the scope of the IP, (3) lower the damages, (4) undercut plaintiff's arguments for an injunction, and (5) claim misuse of the IP at issue (Blair-Stanek 2015).

The value of a piece of IP is associated with the range of activities from which the holder can legally prohibit third parties from engaging (Merges and Nelson 1990; and Matsuura 2004). In simpler terms, the more expansive the monopoly power granted to a piece of IP, the more valuable the IP becomes. So working backwards, if the multinational corporation plaintiff had utilized a low transfer price, which can be seen as the proxy for economic value for the IP at issue, it can be argued that the multinational effectively conceded that it believed that the IP deserved only a limited scope of protection. This would arguably be the most tax-abuse-deterring approach, because invalidating the IP would zero out the economic benefit to the multinational corporations. Even if the IP valuation was found to be valid based on its technological merits, a low transfer price can still be used in support of a curtailed scope of protection provided under IP law (Blair-Stanek 2015).

Now, even if the IP were found valid and the defendant's activity covered by the scope of the IP, use of low transfer price should hinder the plaintiff's remedy claims. For example, damages should be lowered since they are typically determined based on profit or royalty payment lost as a result of the infringement. A low transfer price is an indicator that the multinational corporation *expected* to receive smaller profits or royalty payments, and should therefore be entitled to lower damages (Blair-Stanek 2015).

In a similar vein, transfer pricing also weakens the plaintiff's case for seeking both preliminary as well as permanent injunctions that would bar the defendant from continuing the contested patent infringement. Since injunctions are severe, they require significant showing that damages are insufficient, that the plaintiff would suffer irreparable harm if the injunction is not awarded, and that the public interest would be served by imposing the injunction (Blair-Stanek 2015). An artificially depressed transfer price would cut against each of the foregoing elements.

Lastly, the defendant could point to the plaintiff's use of transfer pricing and IP-based tax avoidance schemes as evidence of IP misuse, giving sufficient ground for courts to withhold the grant of legal protection under IP law in favor of the plaintiff (Blair-Stanek 2015). The basis for this defense is that the protection of IP rights should not conflict with public policy. The fact that multinational corporations are avoiding corporate taxes by using IP as a conduit for profit shifting while simultaneously utilizing the U.S. legal system (that is funded by taxpayers, no less) to safeguard their IP interests is not only hypocritical, but is perhaps the starkest example of public policy contravention.

Incorporating transfer pricing as evidence in private actions provides an arsenal to defendants in cases involving a plaintiff that is engaged in IP-based tax avoidance. Since such evidence can be utilized at nearly every stage of the proceeding, this significantly increases the likelihood of upsetting the status quo and the multinational corporations' current calculus for litigation risk and expected returns. Moreover, this could have an effect on how and the cost at which IP is shared with third parties. The licensing fees charged by IP holders are often calculated based on the likelihood of the IP holder prevailing in court, and the damages expected to be awarded. If both the likelihood of prevailing and expected damages decrease as a result of the proposal, licensing fees would also likely fall.

Just last year, there were 4,537 patent cases filed in the U.S. (excluding copyright and trademark cases) (Lex Machina 2017). To the extent that the odds can be tipped against the multinational corporations on the basis of their use of IP-based tax avoidance schemes, it would force the plaintiffs to internalize the cost of their tax avoidance abuses through a higher level of legal risks.

PUBLIC ACTION

Paired with private litigation, the government could invoke the "Takings Clause" of the Fifth Amendment to take some percentage of IP from multinational corporations engaging in egregious tax avoidance at the transfer price (Blair-Stanek 2016). This action would serve multiple purposes, correcting the distortions to both the IP regime as well as international tax resulting from these schemes.

Firstly, the proposed government taking would target multinational corporations abuse transfer pricing, thereby prompting multinational corporations to select higher transfer prices that more closely track the expect profits to be derived from the IP (Blair-Stanek 2016). With this, tax saving becomes a much less compelling rationale for multinational corporations to offshore IP. At the same time, this approach would encourage innovation, since IP holders still enjoy the same protections and may continue to relocate IP pursuant to their business judgment so long as the corresponding value reported to tax authorities is closer to the actual economic value.

From the public's standpoint, this approach also yields considerable improvements because (1) tax revenue is increased thanks to the upward correction of transfer pricing valuations and (2) the IP taken from IP-based tax avoidance perpetrators will be released into the public domain, reducing the deadweight loss that stems from monopoly pricing rights associated with IP protection (Blair-Stanek 2016). As previously mentioned, the threat of government taking at the declared transfer price should bring this tax-oriented value closer to the actual (and, in many cases, much higher) economic value of the underlying IP. In other words, tax on outbound IP should theoretically increase.

Secondly, the idea is that the government will release the patent for free for third-party use. This means that any previous barriers that prevented derivative innovation and use of a piece of technology no longer exist. Not only can one expect cheaper prices for products based on the IP, it is also reasonable to expect a higher level of innovation, thanks to lowered R&D costs. For example, if the government takes ownership of an important drug patent from a tax-avoiding pharmaceutical company, the patent will be immediately available for free to the market participants to produce inexpensive generic versions. This would lead to better drug prices for consumers and better health outcomes.

FIRST STEP: POLICY CHANGE THROUGH REGULATION

Both the private-action and government-taking approaches require a shift in conventional thinking. In the case of private action, it means that defendant's counsel must be willing to advance more innovative arguments. It also means the courts need to be amenable to establishing new precedents that take into account tax-based evidence. Alternatively, for takings, the U.S. government must be sufficiently determined to take on multinational corporations who would undoubtedly push back. All of this would take time, likely involving lengthy appeals before a final decision can be rendered.

In addition to relying on the judiciary to hear innovative transfer-pricing-based arguments as part of IP litigation, proactive steps can be taken to help accelerate the policy shift and inoculate the U.S. The Patent and Trademark Office (PTO) should consider amending the *Rules of Practice for Trials Before the Patent Trial and Appeal Board* to explicitly reference transfer prices and the supporting documentation as discoverable evidence.[8] By formalizing the interdisciplinary approach under PTO's procedural rules, this regulatory change will hopefully provide greater assurance or comfort for those who are on the fence about introducing tax-based evidence against tax-avoiding multinational corporations.

There are also other considerations that would make this a viable first step in implementing Blair-Stanek's proposal. Given the current gridlock on Capitol Hill, it is arguable that policy change could be effectively introduced at the agency level of the Executive branch. Moreover, while it may be unrealistic to expect a legislative outcome, individual members of Congress and Senators can still serve an important role in the policy-reform process by putting pressure on the PTO to take on this task.

[8] §42.51(b)(1)(iii) of the *Rules* states, "[u]nless previously served, a party must serve relevant information that is inconsistent with a position advanced by the party during the proceeding concurrent with the filing of the document of things that contains the inconsistency. This requirement does not make discoverable anything otherwise protected by legally recognized privileges such as attorney-client or attorney work product. This requirement extends to inventors, corporate officers, and persons involved in the preparation or filing of the document or things."

This can be amended by simply changing the first line to read as follows: ""[u]nless previously served, a party must serve relevant information***, including any tax filings submitted to the Internal Revenue Service together with any related document or things,*** that is inconsistent with a position advanced by the party..."

IV. What Are the Other Policy Alternatives?

To better assess the effectiveness of the proposal outlined above, it is worth looking at how it stacks up against other plans for policy reforms. Most ideas floated so far reflect efforts to close the international tax loopholes from a tax perspective. They range from tweaks at the margin, as represented by Ireland's decision to close the loophole that allowed for the "Double Irish" setup, to comprehensive overhauls, such as the adoption of Sales Factor Apportionment. However, all of them do not address the incentive and business calculus driven by the economic value generated by the legal protection accorded by IP law.

IRISH REFORMS

Responding to the flood of negative media coverage and pressure from its neighbors, Ireland ironed out the quirk in its tax law that allowed foreign tax residencies for Irish-incorporated entities, which in turn enabled the "Double Irish" tax avoidance structure (Taylor 2016). But the catch is that multinational corporations with this structure in place before 2015 (which includes most of the big players that are mentioned above) can continue to enjoy the exorbitant tax savings through 2020. There are however, speculations that multinational corporations can continue to operate the structure past 2020 by utilizing double tax treaties between Ireland and other jurisdictions. Under these treaties, multinational corporations will still be able to claim tax residencies overseas, effectively trumping any changes to Irish tax law (Taylor 2016).

However, the end of Ireland as the pre-eminent enabler of IP-based profit sharing schemes would probably not be of its own choosing, but rather the result of the actions of the EU and the U.K. With the European Commission taking a more aggressive stance investigating favorable tax arrangements between Ireland and multinational corporations, and the U.K. proposing a reduction in corporate tax rates to 17 percent, Ireland may be losing its appeal (Gupta 2016). Yet all this does not mean an end to IP-based profit sharing schemes; it simply suggests that Ireland will no longer be the destination of choice for multinational corporations. The tax savings generated by Ireland's 12.5 percent corporate tax rate still remains substantial and multinational corporations can always move on to the next tax haven *du jour*.

PATENT BOXES

Another unilateral tax-based solution to profit shifting is a "patent box." Also known as knowledge box, it is less a policy solution than a resigned response to the status quo. To incentivize multinational corporations to retain IP in a particular jurisdiction, the government grants a discounted tax rate on profits generated by those IP, effectively "'boxing' them off from the rest of the system" (Parker 2015). Instead of combating erosion, this policy accelerates it by forcing states to undercut one another, prompting a "race to the bottom" that again only leaves multinational corporations as winners (*see* Alstadsaeter et al. 2015).

OECD'S PROFIT-SHIFTING REFORM EFFORTS

Efforts by the Organization for Economic Co-operation and Development (OECD) have culminated in the recent release on an action plan meant to curtail abuses of international tax avoidance schemes by multinational corporations. This plan includes specific guidance advocating for a more robust framework that tax authorities can adopt to rein in abusive transfer pricing practices. The key to this framework is aligning the IP ownership with actual substantive operations related to the IP (Reddan 2016). In particular, tax authorities would be looking for development, enhancement, maintenance, protection, and exploitation (or DEMPE) functions being

performed by actual employees at entities that own the IP (Fox and Cooper 2017). In other words, it is only with substantive performance of DEMPE functions by local staff that profits can be properly attributed to the jurisdiction of the IP-owning entity (Alms et al. 2016).

This principle is to be backed up by more stringent documentation requirements, including “detailed country-by-country overview and specific transfer pricing information for each relevant country of operation” (Reddan 2016). This is aimed at increasing transparency and allows local tax authorities to undertake appropriate enforcement measures against multinational corporations engaging in tax avoidance schemes.

While this is certainly a move in the right direction, successful implementation requires a high level of cross-border coordination. This is extremely challenging because, while states may be aligned in their interest to combat tax avoidance practices to prevent the tax revenue pie from shrinking, they must also compete with one another to get a bigger slice. This conflicting interest would likely lead states to opportunistically defect from the OECD and hinder its overall effectiveness (*see* Marin 2017).

COMPREHENSIVE TAX REFORM: SALES FACTOR APPOINTMENT

The tax mechanism behind Sales Factor Apportionment (SFA) is that corporations that operate in more than one tax jurisdiction, which is typically the case, would add up their profits globally to determine their tax base. Then they would “apportion” global profits to each jurisdiction using a “sales factor” calculation, which simply calculates the share of total global sales made in each jurisdiction of business (Steinbaum and Bernstein 2017). This mechanism would keep the corporate tax progressive, while taking away corporations’ ability to reduce their tax bill by locating their profits in low-tax jurisdictions as described in the examples above. Corporations, after all, cannot relocate their customers as easily (Steinbaum and Bernstein 2017). While this alternative form of corporate tax would arguably be superior, as Steinbaum and Bernstein (2017) argue, it remains vulnerable to the hypothetical resale scenario envisioned by Professor Hemel (Fleming, Peroni and Shay 2015).

TAX BASED SOLUTIONS ARE SUB-OPTIMAL

Current discussions on possible policy responses to IP-based tax avoidance schemes are heavily tax-based. However, effective reform to tackle an international taxation problem requires collective action, something that is difficult to achieve when many would view tax collection as a zero-sum game. Moreover, the uncertainty created by more comprehensive changes to the tax code could allow multinational corporations to expose unforeseen loopholes.

That is not to say, however, that certain proposals, if implemented, would not be steps in the right direction. OECD’s plan, together with the adoption of SFA, would yield substantial benefits that go beyond the issue of the policy brief. However, these approaches would benefit from an IP-based proposal serving as a backstop.

There are two key elements to the IP approach that makes it superior to the foregoing alternatives: (1) by using lowballed transfer prices of IP against multinational corporations, this approach incentives multinational corporations to unilaterally correct their valuation and (2) consequently, it forces multinational corporations to reevaluate their decision in the first instance on whether to offshore IP.

First, because the aim of the IP-based approach is to correct corporate incentives, the burden of deriving more accurate transfer prices is squarely on the multinational corporations. Unlike the OECD framework, the burden in that case is still on tax authorities to double-check submitted documentation to ensure compliance. The IP-based proposal leverages the already-heated and adversarial field of IP litigation to penalize multinational corporations' bad acts. Furthermore, the simplicity of government taking of offshored IP at the transfer price limits costs to the government while yielding additional social benefits by reducing the deadweight loss that necessarily comes with any IP regime.

Hence, by incorporating IP transfer prices into IP jurisprudence, an artificially depressed valuation made for tax purposes will now carry real-world consequences that impact the economic value of IP. Rather than expending government resources on assessing what the proper tax liability of multinational corporations should be, the IP-oriented proposal more efficiently applies pressure to multinational corporations to reevaluate the incentives of offshoring their IP. This allows for policymakers to circumvent the collective action problem because the distribution of tax revenue is never at issue.

What we ultimately have is a solution that allows the U.S. to unilaterally influence a multinational corporations' decision at the first instance to offshore IP while downplaying the need to sway their subsequent decision of where to send their IP. And by tackling both the underlying IP and corresponding tax problems simultaneously, this proposal avoids creating additional loopholes.

V. Conclusion

So, if a patent-oriented proposal is a more effective policy solution than taxed-based alternatives in tackling IP-based tax avoidance schemes, why hasn't this already been tried? The answer may likely be the result of the extensive specialization of both IP and tax, resulting in a gap between the two with very little interdisciplinary work both in academia as well as in practice (Blair-Stanek 2015). We see this being reflected in the corporate organizational structure—for instance, tax-related matters fall within the purview of the chief financial officer, while IP litigation is managed by the general counsel.

The same is true in Congress. The Judiciary Committee of both houses in Congress oversee IP matters, while tax issues are handled by Senate Finance Committee and the House Committee on Ways and Means. Given this traditional divide, policy experts called upon to address these issues are likely tax matter experts who would prefer sticking to their area of expertise. While it may make sense at first glance that a tax-based solution is appropriate for an IP-based profit-shifting, it is imperative that policymakers recognize this is an interdisciplinary issue.

The fact that tax-based solutions treat the value of IP as an exogenous and defined value is what allows multinational corporations to game the system because multinational corporations are best positioned to know the likely value of their IP. By incorporating transfer pricing into IP law, this proposal recharacterizes the value of IP as endogenous to all public disclosures made by multinational corporations. So instead of perpetuating corporate secrecy surrounding the value of IP, the proposal tweaks the IP regime such that it is in the best interest of multinational corporations to be transparent actors.

Beyond what has been outlined above, this IP-based approach to addressing IP-based profit-shifting has applications in other fields that exceed the scope of this policy brief. Take, for instance, the area of international trade: a solution to this issue would be further strengthened if investment treaties and trade agreements could be utilized to advance the notion that misuse of IP in the realm of tax will carry consequences under the international IP regime.

Hopefully, what this policy brief demonstrates is that the existing way that policy makers deal with problems is far too narrow. In facing multinational corporations who are not tethered to any territorial borders and accountable only to their shareholders, governments do not have the luxury to dwell in silos of specialized expertise. With continuing press coverage and mounting support to rein in corporate abuses of our regulatory structure, policymakers have before them an opportunity to implement real change. This opportunity should not be squandered on measures that only fix things at the margin. It is time for policymakers to think outside the box.

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