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THE EXORBITANT TAX PRIVILEGE

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ABSTRACT

We estimate and attempt to explain the evolution of the taxes paid by U.S. multinationals on their foreign profits since 1966. In the oil sector, taxes paid to oil-producing States have been contained, allowing U.S. firms to earn high after-tax returns. Foreign taxes fell abruptly after the first Gulf War. In sectors other than oil, the effective foreign tax rate has fallen by half since the late 1990s. Almost half of this decline owes to the rise of profit shifting to tax havens. The low foreign taxes paid by U.S. multinationals can explain half of the U.S. cross-border return differential.

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1 Introduction

One of the most fascinating puzzles in international macroeconomics is what has come to be known as the “exorbitant privilege” of the United States. Despite being by far the world’s largest net debtor, the United States earns sizable net income from the rest of the world. Is there some special feature of the United States that allows it to generate permanently higher returns on its foreign assets than on its foreign liabilities? And if so, what is it exactly? This question matters for core issues in international macroeconomics, including the sustainability of the U.S. current account deficit, the structure of the international monetary system, and global imbalances.

In this paper, we construct and analyze new series suggesting that there has indeed been something unique to the United States over the last half century. We estimate the effective tax rates paid by U.S. multinationals on their foreign profits since 1966, and find that these rates have tended to be low. This “exorbitant tax privilege” can explain about half of the overall return differential enjoyed by the United States since 1966. It has two main sources. First, taxes paid to oil-producing States have been contained, allowing U.S. petroleum firms to earn high after-tax rates of returns. Second, the effective foreign tax rate of U.S. multinationals in sectors other than oil has collapsed since the mid-1990s. While part of this decline is due to the fall of corporate tax rates abroad, by our estimates almost half of it owes to the rise of profit shifting to tax havens. In 2015, about half of the foreign profits of non-oil U.S. multinationals are made in non-haven countries where they face effective tax rates of 27%, and about half are booked in tax havens where they face effective rates of 7%. Following the Tax Cuts and Jobs Act of 2017, these profits are only liable for a small amount of residual tax in the United States—and hence profit shifting has proved to be an effective way for U.S. firms to cut their taxes and boost the after-tax returns on their foreign operations.

Our contributions in this paper is twofold. First, we uncover how the oil sector and the sharing of oil rents have contributed to the return differential enjoyed by the United States. Although there is a vast body of work on the exorbitant privilege, from which much has been learned, oil has received virtually no attention so far in this literature. This is surprising, given the large role played by the oil sector in U.S. foreign investments: from 1966 to 2016, on average each year oil has accounted for more than a third of all the pre-tax profits made by U.S. multinationals abroad.

The most likely explanation for why the outsized role of oil had not been stressed until now is probably that the key data source used in most of the studies of the exorbitant privilege—

the international macroeconomic accounts of the United States—do not allow one to study the sectoral composition of U.S. investments abroad properly. More than half of U.S. direct investment abroad is intermediated through holding companies (many of which located in offshore tax havens). Following internationally-agreed guidelines, statistics reported in the international macro accounts are allocated to the industries and countries of the affiliates with which the U.S. parent companies have direct transactions and positions, and hence more than half of the foreign direct investment of the United States show up as investments in holding companies today. The oil sector—which uses holdings in tax havens extensively—is almost invisible.

To overcome this limitation, we combine the international macro accounts with two other data sources: IRS corporate income tax returns, and surveys of the foreign operations of U.S. multinationals conducted by the Bureau of Economic Analysis. These data provide information on the operations of the foreign affiliates of U.S. firms classified in the industry of the affiliate’s primary activity. In addition to revealing the true sectoral distribution of U.S. investments, they allow us to study the amount of taxes paid by U.S. multinationals abroad (which is impossible with the international macro accounts, which are on an after-tax basis).

We find that U.S. multinationals in the oil sector have earned much higher post-tax rates of returns than multinationals in other sectors. The differential first became sizable in the 1970s, following the oil shock of 1973. But interestingly—and perhaps unexpectedly—it is in the 2000s and early 2010s that returns for U.S. oil multinationals abroad have been particularly high. As is well known, oil prices increased significantly in that period of time, from a low of \$13 in 1998 to a high of \$112 in 2012 (before collapsing in 2015). This increase was similar to the rise that occurred in the 1970s. But a key difference is that U.S. multinationals pay much lower tax rates to oil-producing states today than in the 1970s: while this rate averaged 70% from 1966 to 1990, it has averaged 45% since 1991. The foreign tax rates of U.S. oil multinationals fell significantly after the first Gulf War, during which the United States (and a number of other countries with significant investments in oil) intervened to protect Kuwait, a major oil producer. Although it is not possible to know for sure what caused this decline, a possible interpretation of the fall in the taxes collected by oil-producing countries—and more broadly, of the favorable sharing of oil rents that U.S. multinationals have enjoyed in the long run—is that they reflect a return on military protection granted by the United States to oil-producing States.

Our second contribution is to produce new long-run series on the effective tax rates that U.S. multinationals (in sectors other than oil) have paid on their foreign profits over the last half century. Until recently it was not possible to do this computation in a fully comprehen-

sive manner, because U.S. firms retained a large fraction of their earnings abroad, postponing U.S. taxation—thus making it unclear what tax rate they truly faced. But in December 2017, Congress passed and President Trump signed into law a bill that contains a mandatory repatriation (for tax purposes) of the profits retained by U.S. multinationals abroad. Following the enactment of this law, we can for the first time compute the total tax rate on the foreign profits of U.S. firms—adding the U.S. taxes owed by virtue of the mandatory repatriation to the foreign taxes already paid.

We find that non-oil multinationals have seen their tax rates on foreign earnings fall from about 35% in the first half of the 1990s (close to the statutory U.S. federal corporate tax rate) to about 20% in recent years (17% paid to foreign countries plus 3-4% owed to the United States). To understand the decline in foreign effective rates, we decompose it into three components: (i) changes in foreign statutory rates, (ii) changes in the location of the factors of production used by U.S. multinationals, and (iii) changes in the reported profitability of U.S. affiliates throughout the world. We find that the quantities of labor and tangible capital used by U.S. firms in tax havens have increased faster than in high-tax countries, but only slightly so. By contrast, the profits booked in tax havens have surged, from 20% of all foreign profits in the first half of the 1990s to 50% in recent years—boosting the after-tax returns of the United States on its foreign assets. We relate this increase to U.S. Treasury regulations adopted in the mid-1990s that facilitated profit shifting to tax havens.

In sum, our key insight is that natural economic forces are not enough to explain the exorbitant privilege of the United States. Instead, geopolitics—which affects the sharing of natural resources rents—and domestic policies—which can make it easy or hard for multinationals to avoid taxes—are key.

Our paper informs a vast literature on the exorbitant privilege (e.g., Obstfeld and Rogoff, 2005; Lane and Milesi-Ferretti, 2005, 2009; Gourinchas and Rey, 2007; Bosworth et al., 2008; Curcuru et al., 2008; Huang and Mascaro, 2009; McGrattan and Prescott, 2010; Forbes, 2010; Gourinchas et al., 2010; Gohrbrand and Howell, 2010). We push knowledge forward by uncovering the critical importance of the taxes paid to oil-producing States for the after-tax returns of U.S. direct investments abroad, the key component of the U.S. cross-border return differential. We also add to the literature that studies profit shifting by U.S. multinationals (e.g., Hines and Rice, 1994; Clausing, 2009, 2016; Grubert, 2012; Zucman, 2014; Dowd, et al., 2017; Guvenen et al., 2017; De Simone et al., 2017). Our contribution to this body of work is to estimate the evolution of the effective tax rates paid by U.S. firms on their foreign profits over the last half

century and to identify the contribution of profit shifting to this evolution—which could not be fully done before the December 2017 tax reform.

The rest of the paper proceeds as follows. Section 2 describes our data and methodology. We present our results on the evolution of the foreign tax rates paid by U.S. firms since 1966 in Section 3, and quantify the contribution of profit shifting to this evolution in Section 4. Section 5 studies the implications of our findings for the cross-border returns differential of the United States. This paper is supplemented by an Online Appendix and a set of Excel files that enable the reader to reproduce all our estimates step by step starting from publicly available data.¹

2 Methodology and Data

2.1 Methodology

We construct new long-run series of the pre-tax profits, taxes paid, and post-tax profits of the foreign affiliates of U.S. multinationals by sector and country. Throughout the paper, we focus on majority-owned affiliates (more than 50% owned by a U.S. parent).

Following standard concepts and notations, we define pre-tax profits as follows. Denote by Y the value-added of the foreign affiliates of U.S. multinationals, net of capital depreciation. It is the sum of labor income paid Y_L and of net-of-depreciation operating surplus Y_K : $Y = Y_L + Y_K$. Our measure of pre-tax profits is Y_K minus net interest paid. Conceptually, this corresponds to what governments attempt to tax with the corporate income tax, since interest and depreciation are typically tax deductible. After subtracting foreign corporate taxes paid, this is also very close to what is recorded in the U.S. balance of payments as direct investment equity income received by the United States.²

We are interested in measuring the corporate taxes paid by the foreign affiliates of U.S. multinationals. These affiliates pay taxes to the countries where they operate (to the extent that these countries have a corporate tax). Moreover, until 2018, the United States had a worldwide corporate tax, meaning that the profits of these affiliates were taxable in the United States once repatriated, with credits given to offset foreign taxes paid. In our computations, we

¹The Appendix and data are available online at <http://gabriel-zucman.eu/exorbitant>

²The difference is that the balance of payments considers “direct investment” enterprises, i.e., all foreign affiliates that are more than 10% owned by the United States, and pro-rates profits by the ownership stake of the U.S. parent. By contrast, following the BEA survey data described below, we consider majority-owned affiliates (i.e., that are more than 50% owned by U.S. parents) and do not pro-rate profits by ownership stakes. See Appendix A for a detailed discussion. As shown in Appendix Table A.1, the ratio between the direct investment equity income (i.e., the sum of direct investment dividends and reinvested earnings) recorded in the balance of payments and the profits of majority-owned affiliates net of foreign corporate taxes is always close to 100%.

consider both the foreign taxes paid and additional U.S. taxes owed (net of tax credits).

We are also interested in studying the pre- and post-tax profitability of the foreign operations of U.S. multinationals. We consider two profitability statistics. First, we consider the rate of return to tangible capital, i.e., profits divided by the capital stock. There are several ways to measure capital (historical costs, current costs, market values). Due to data availability constraints, we focus on capital at current cost (i.e., reflecting the current replacement cost of plants, machines, equipment, and other tangible assets). We also consider another profitability metric, the ratio π of profits to wages paid. Denote by α the capital share of corporate value-added Y_K/Y . Then if net interest paid is zero, the profits-to-wage ratio π equals $\alpha/(1 - \alpha)$. The advantage of this profitability measure is that it abstracts from valuation issues for capital.

Our database documents where the foreign affiliates of U.S. firms report their profits, pay wages, own tangible assets, and what is their profitability and effective tax rate, by country and industry. We start by describing the key empirical patterns that emerge from this database. We then compute counterfactual rates of returns on U.S. direct investments abroad under a number of assumptions described in Section 5.

2.2 Data to Measure Foreign Profits and Taxes

We create our database by combining and reconciling the international macroeconomic accounts with the BEA surveys of the foreign operations of U.S. multinationals and tabulations of IRS corporate income tax returns.

BEA survey data. The United States has a sophisticated statistical system to monitor its multinationals. A large sample of representative multinationals report detailed data annually to the Bureau of Economic Analysis since 1982. An exhaustive, benchmark census-like survey is conducted every five years. Similar benchmark surveys were conducted in 1950, 1957, 1966, 1970, and 1977. Reporting is mandatory; the BEA has decades of experience with this survey, which has been used by many researchers. This dataset provides information about the unconsolidated operations of U.S. multinationals abroad, making it possible to study the sectoral composition of U.S. foreign investments. The BEA survey also reports on the amount of taxes paid by U.S. multinationals to foreign countries and includes two measure of profits: a financial accounting measure (“net income”) and economic measure (“profit-type return”). We use the economic measure, which is the one that corresponds to our conceptual framework. In contrast to “net income,” it avoids double-counting of the profits of indirectly-held affiliates and excludes capital

gains and losses. We refer to Appendix A for a discussion (see, e.g., Table A.0 for a comparison of the different profit measures available).

IRS data. We also rely on tabulations of corporate income tax returns published by the IRS. Because the United States had a worldwide corporate income tax until 2018, income earned abroad by U.S. firms was taxable in the United States. To administer the tax the IRS collected detailed information about this foreign income. The key advantage of the IRS data is that they are available annually since 1913 (the creation of the federal corporate income tax). We use the IRS data to fill in the gaps between the benchmark years of the BEA survey from 1966 to 1982. Like the BEA survey, the IRS data show the sectoral composition of the foreign activities of U.S. multinationals and provide information on foreign taxes paid.

2.3 The Composition of U.S. Direct Investments Abroad

We start the analysis by showing the prominent role played by affiliates in the oil sector and in tax haven countries in the profits made by U.S. multinationals abroad.

As shown by the top panel of Figure 1, since 1966 oil and tax havens together have accounted for about half of all the foreign after-tax profits of U.S. multinationals. The share of the oil sector is strongly correlated with oil prices. Through to the 1980s, oil accounted for more than a third of all the after-tax profits made by U.S. multinationals abroad, close to 50% during the first oil shock of 1973–1974, and 40% during the second oil shock of 1979. It receded with the decline in oil prices in the 1980s, made a comeback in the 2000s—when the oil sector accounted for 25% of the after-tax foreign profits of U.S. firms—before falling again in 2014 and 2015. While oil was initially key, tax havens (Ireland, Luxembourg, Netherlands, Switzerland, Singapore, Bermuda and Caribbean havens) are now key. In recent years, about half of the foreign profits of U.S. multinationals have been booked in tax haven affiliates, most prominently in Ireland (18%), Switzerland, and Bermuda plus Caribbean tax havens (8%–9% each).

Oil and haven affiliates account for a large share of after-tax foreign profits not because they employ a lot of labor or capital, but because they are extremely profitable. The bottom panel of Figure 1 shows this by displaying the ratio of after-tax profits to wages paid.³ Except during the oil slump of the 1980s, the profits-to-wage ratio of oil affiliates has been an order of magnitude higher than that of non-oil, non-haven affiliates. Haven affiliates have gradually become more

³ The profitability patterns are similar if one considers the rate of return to tangible capital instead of the profits to wage ratio (Appendix Figure A.11).

and more profitable over time. Their profit-to-wage ratio reached 350%–400% in the 2010s—a level comparable to the after-tax profitability seen in the oil sector during the first oil shock.

3 Taxes Paid by U.S. Multinationals: 1966-2015

Figure 2 shows our main statistic of interest, the effective tax rate of U.S. multinationals on their foreign profits.

3.1 Tax Rates in the Oil Sector

As shown by the top panel, the rate of tax paid by oil multinationals to foreign governments has varied considerably over time. From 1966 to 1990, this rate averaged 70%. It reached as much as 90% in the mid-1970s, in the context of the first oil shock and the Arab-Israeli war of 1973. It then fell sharply in the early 1990s, and has averaged 45% from 1991 to 2015. The taxes levied by oil States determine how natural resource rents are split and are the key determinants of the profitability of oil companies. The post-Gulf war low rates have boosted the after-tax profits of U.S. oil multinationals. As shown by the bottom panel of Figure 1, their after-tax profits-to-wage ratio was much higher in the 2000s than in the 1970s, despite the fact that pre-tax profitability was similar.⁴

One possible interpretation for the massive tax change that occurred in the early 1990s is that it reflects a return on military protection granted by the United States to small oil-producing States. However, the available evidence does not prove that the first Gulf War had a causal impact on tax policy in oil-producing countries (and their policy vis-a-vis U.S. firms specifically). There are other potential explanations for the decline in the foreign tax rate of U.S. oil companies, and the available data do not allow us to quantify their importance precisely. First, some of the decline—especially in the early 1990s—might reflect tax incentives introduced by some oil-producing states in the mid-1980s to encourage investment in response to the slump in oil prices. As reported in Appendix Figure A.10, while the tax rate paid to countries from the Organization of the Petroleum Exporting Countries (OPEC) fell dramatically after the first Gulf War (from 70% in 1990 to 43% in 1999), initially it fell even more in non-OPEC countries, with rates as low as 20%–30% in the early 1990s (driven by very low rates in the United Kingdom).

More broadly, the decline in tax rates could reflect the rise of tax competition among oil producers. After the oil shocks of the 1970s (and the high tax rates imposed by Gulf countries),

⁴That is, as shown in Appendix Figure A.12, in both cases the pre-tax profits-to-wage ratio was in range of 1,000%–1,500%, corresponding to a net-of-depreciation capital share of corporate value-added of 90%–95%.

U.S. companies diversified their operations. While in the 1970s the bulk of their profits came from affiliates in the OPEC (88% in 1977), since the mid-1980s between 50% and 75% have originated from non-OPEC countries (Appendix Figure A.9), primarily Canada, Norway, the U.K., a number of former USSR countries (especially Kazakhstan), Indonesia (which left OPEC in 2006), Angola, and Brazil. In these countries, the marginal cost of oil extraction can be relatively high, which might have led them some of them to cut taxes to attract investment. After the collapse of the USSR, new entrants might also have offered low rates to boost investment.⁵ Last, it is possible that the decline in effective rates in the oil sector owes to the rise of profit shifting to tax havens. Although market prices for oil are readily available (which should limit the possibility to manipulate transfer prices, one of the key shifting channels) and oil affiliates pay little interest (Appendix Table A.13), oil companies might have found ways to shift profits out of oil-producing countries into tax havens. More research is needed to quantify the role of these potential explanations.

Interestingly, the foreign tax rate faced by U.S. oil multinationals after the first Gulf War, 45%, has been close to the statutory—federal plus State—rate applicable in the United States. Thus the new rate imposed by oil-producing countries has been close to the one that maximizes tax revenue for these countries under the constraint of minimizing tax payments by U.S. oil multinationals—as any rate below 40% would have been offset by higher taxes owed in the United States. Because the foreign rate is almost always higher than 40%, oil firms typically do not owe tax in the United States following the 2017 tax law, and we neglect any residual tax owed.

3.2 Tax Rates in Sectors Other Than Oil

Our second key result is that the foreign tax rate paid by non-oil U.S. multinationals has fallen by almost half since the start of the 21st century, from 32% in 2000 to about 17% in 2015 (bottom panel of Figure 2). These firms used to pay sizable tax rates to foreign countries: 40% up to the 1980s (when foreign statutory rates were higher and a smaller fraction of profits were shifted to tax havens), and 30%–40% in the 1980s and 1990s, with a gradual but—up to the late 1990s, relatively mild—downward trend. The foreign rate paid by U.S. multinationals has always been lower than the statutory U.S. rate (and the average statutory foreign rate).⁶ Thus U.S. multinationals were typically liable for extra taxes in the United States (above and beyond

⁵Unfortunately, the publicly available BEA data are not detailed enough to analyze the evolution of tax rates at the country-level: for many country-years, taxes paid and/or profits made are confidential.

⁶The U.S. rate was similar to the average OECD rate up to the mid-1990s, see Figure A.8.

what they had already paid abroad). In practice, U.S. taxes were only payable once foreign profits were repatriated via dividend payments to U.S. parents. Firms had incentives to retain their foreign profits abroad where they remained free of U.S. taxes.

The 2017 Tax Cuts and Jobs act taxes these un-repatriated profits at a rate of 8% or 15.5% (depending on the type of assets held abroad, cash or non-cash, with credits available for foreign taxes paid), as opposed to the rate of 35% in force until 2017. Tax payments are back-loaded: firms must repatriate (for tax purposes) 8% of their offshore profits each year between 2018 and 2022, 15% in 2023, 20% in 2024, and 25% in 2025.⁷ Following the enactment of this law, we can compute the total tax rate on the foreign profits of U.S. firms—adding foreign taxes paid and U.S. taxes owed. Because the repatriation rate (net of allowable tax credits and after accounting for back-loading) is low, it increases the total tax burden only modestly, as shown by the bottom panel of Figure 2.

4 The Rise of Profit Shifting

4.1 Decomposing the Fall of the Foreign Effective Tax Rate

What has caused the striking 15 points fall in the foreign effective rate paid by non-oil affiliates between 2000 and 2015? Our computations show that relocations of capital and labor to low-tax places do not play a big role (1 point), while the fall in foreign statutory tax rates (8 points) and the rise of profit shifting to tax havens (6 points) are key.

Changes in the location of factors of production do not explain much of the evolution because, as shown by the top panel of Figure 3, the bulk of the labor and capital used by non-oil affiliates since the 1960s has always been located in high-tax countries (about 85%–90%), not in tax havens (10%–15%). The operations of tax haven affiliates have been growing slightly faster over the last twenty years, but this rise is modest: in 2015, about 15% of the capital stock of affiliates was in tax havens vs. 10% in 2000. Since effective tax rates in tax havens are 20 points lower than in non-havens in 2015, this 5 points increase has reduced the overall foreign rate by about 1 point.

Changes in the tax rates of non-haven countries have played a much more important role. In the 8 non-haven countries where U.S. multinationals have the largest stock of tangible capital in 2015 (the United Kingdom, Canada, Germany, France, China, Australia, Japan, Brazil, and

⁷Because no penalty or interest charge applies, this back-loading reduces the effective rate on repatriated profits. Discounting future tax payments at an annual rate of 4%, we estimate that the effective U.S. tax rate on the repatriated profits is 7.6%. This result is consistent with independent estimates by the Joint Committee on Taxation produced to estimate the revenue effects of the Tax Cuts and Jobs Act.

Mexico) the average statutory corporate tax rate has fallen by 8 points since 2000, from 36% to 28%.

Rising profit shifting to tax havens has played a large role too, as Figure 3 shows. While about 10%–15% of the wages and tangible capital of non-oil affiliates are in tax havens in 2015, almost half of their pre-tax profits are booked there (top panel). That is, haven affiliates are extremely profitable. Their pre-tax profits-to-wages ratio is in a range of 300% to 800% (bottom panel), which corresponds to a capital share of net corporate output of 75%–90%. By contrast, in the countries where U.S. multinationals employ the bulk of their workforce and tangible capital, pre-tax profits to wage ratios are less than 35%, which corresponds to a capital share of net output below 25%. Where effective tax rates are low, reported profitability is high, and vice-versa.⁸ While wages and capital in tax havens have not increased much since 2000, reported profitability has boomed. If havens had kept the same profitability as in 2000, the share of profits booked in non-havens would be about 30 points higher in 2015 and the overall effective foreign rate of U.S. multinationals 6 points higher.

In sum, the foreign rate of 17% paid by non-oil U.S. multinationals in 2015 can be decomposed as follows: about half of their foreign profits are booked in tax havens where they face effective rates of 7%, and about half are in non-haven countries where they face effective rates of 27%. The profits booked in tax havens have surged since 2000 not because more workers or capital are employed there, but because reported profitability has boomed. The rising profitability in haven affiliates can be seen as the results of two forces: multinationals book intangibles in low-tax affiliates (e.g., Guvenen et al., 2016), and they can shift profits by manipulating intra-group import and export prices (e.g., Clausing, 2003; Bernard et al., 2006).

4.2 Explaining the Rise of Profit Shifting

How have U.S. firms been able to shift profits to offshore tax havens in recent years?

Before 1996, the United States, like other high-income countries, had anti-avoidance rules—known as “controlled foreign corporations” provisions—designed to immediately tax in the United States some foreign income (such as royalties and interest) conducive of profit shifting. In 1996, the IRS issued regulations that enabled U.S. multinationals to avoid some of these rules by electing to treat their foreign subsidiaries as if they were not corporations but disregarded entities for tax purposes. This move is called “checking the box” because that is all that needs to be done on IRS form 8832 to make it work (see Zucman, 2014, for a description

⁸Profit shifting is an across-the-board phenomenon: the ratio of pre-tax profits to wages is one order of magnitude higher for haven affiliates than non-haven affiliates within each sector.

in the case of Google Alphabet). Profits booked in Ireland rose immediately after the introduction of the check-the-box regulations, from 5% of all (non-oil) pre-tax foreign profits in 1996 to 15% in 2002, before stabilizing at 15% since then. Prominent cases of profit shifting by U.S. multinationals involve Irish subsidiaries and arrangements that would not have permitted U.S. multinationals to avoid taxes absent the check-the-box regulations; see, e.g., Kleinbard (2011).

U.S. multinationals use tax havens more than multinationals from other countries which have kept their controlled foreign corporations regulations. No other non-haven OECD country records as high a share of foreign profits booked in tax havens as the United States. In Figure 4 we use bilateral direct investment income data recently released by OECD countries to study the share of direct investment income earned in Ireland, Luxembourg, Netherlands, Singapore, and Switzerland. These havens account for 47.5% of the direct investment income received by the United States, vs. 22% for E.U. countries and 14.5% for other OECD countries. Moreover, Damgaard and Elkjaer (2017) present bilateral direct investment statistics on an ultimate ownership basis showing that half of the direct investment income paid by tax havens ultimately accrues to U.S. parents. This suggests that half of all the global profits shifted to tax havens are shifted by U.S. multinationals. By contrast, about 25% accrues to E.U. countries, 10% to the rest of the OECD, and 15% to developing countries (Tørsløv et al., 2018).

One way to rationalize why the U.S. Treasury adopted policies that facilitated profit shifting is that these policies may have been seen as benefiting the U.S. government. As long as the United States had a worldwide corporate income tax, the foreign profits of U.S. firms were taxable once repatriated, with credits given for taxes paid. Letting its multinationals shift profits out of foreign high-tax countries (such as France) towards low-tax countries (such as Ireland) meant that the United States could ultimately expect to collect more tax revenue, since it would not have to grant much credits to offset taxes paid abroad (Hines and Rice, 1994).

In retrospect, however, letting its multinationals avoid foreign taxes did not enhance U.S. tax collection significantly, because the 2017 law allows these firms to repatriate their foreign earnings at a low rate. In Appendix Table A.19, we compute the amount of tax revenue that the United States would have collected if its multinationals had not been able to shift profits to low-tax places and all foreign profits had been taxed in the U.S. with credits given for foreign taxes. This would have generated about as much revenue as what the United States will ultimately collect after the mandatory repatriation. Tax avoidance by U.S. multinationals has not redistributed tax revenue across high-tax countries: it has redistributed income to the

benefit of their shareholders (some of which are foreigners).

5 Implications for the U.S. Returns Differential

Virtually all of the cross-border return differential enjoyed by the United States comes from the yield differential on direct investments (Curcucu et al., 2013), and in particular from the high post-tax yield on U.S. direct investments (DI) abroad. Here we show that about half of the DI yield differential can be explained by the favorable sharing of oil rents and the fact that U.S. non-oil multinationals have successfully avoided paying part of their foreign taxes.

We first compute the counterfactual rate of return on U.S. DI equity investments abroad if the oil sector had the same after-tax rate of return as the non-oil sector. This can be seen as a scenario in which oil-producing countries choose their corporate income tax rates so as to fully appropriate oil rents for themselves (leaving U.S. multinationals with the average rate of return to capital seen in other sectors of the world economy), and investments by U.S. oil companies is unaffected. As reported in Appendix Table A.7, removing the above-normal returns of oil companies reduces the return on U.S. direct equity investments abroad by 0.8 percentage points on average over the 1966–2016 period. The effect is particularly large in the 1970s (1.6 percentage point) and in the 2000s (1.2 percentage point). This adjustment erases almost 20% of the DI equity yield differential enjoyed by the United States over the last half century.⁹

We then compute the counterfactual rate of return on U.S. DI equity investments in sectors other than oil if there had been no profit shifting to tax havens. We assume that absent profit shifting, all non-oil profits would have been taxed at the same rate as profits booked in non-haven countries (e.g., 27% in 2015). This can be seen as a scenario where all countries other than the United States have harmonized corporate income tax rates and the decision of U.S. multinationals to invest abroad vs. in the United States is unaffected. This reduces the return on U.S. direct equity investments abroad by 0.6 percentage points on average over the 1966–2016 period.

A final adjustment involves applying the U.S. corporate tax rate to the foreign (non-oil, non-haven) profits of U.S. multinationals. This corresponds to a scenario in which the United States had forbidden firms to defer taxes by retaining profits abroad (or had chosen a repatriation rate of 35% in 2017). As reported in Appendix Table A.8, this adjustment further reduces the DI equity yield differential by 0.6 percentage points. Taken together, oil and tax avoidance by

⁹Foreigners also invest in the U.S. oil sector. But the return on U.S. oil is no higher than the return on other foreign direct investments in the United States (essentially due to relatively high costs of U.S. oil production).

non-oil multinationals account for half of the U.S. DI yield differential of 4.5 points over the 1966-2016 period.

While we are not the first to note the importance of profit shifting for the high post-tax yields on U.S. DI abroad (Bosworth et al., 2008; Curcuru et al., 2013), until recently it was not possible to know whether these high yields reflected a true economic phenomenon (i.e., that U.S. multinationals truly are very profitable on an after-tax basis) or partly a statistical illusion of balance of payments accounting, since the returns recorded in direct investment statistics do not subtract the taxes owed by the foreign affiliates of U.S. multinationals in the United States. Following the December 2017 tax law, we now know that U.S. multinationals have really had a high after-tax profitability on their foreign operations over the last decades. In effect, the 2017 Tax Cuts and Jobs Act seals their “exorbitant tax privilege.”

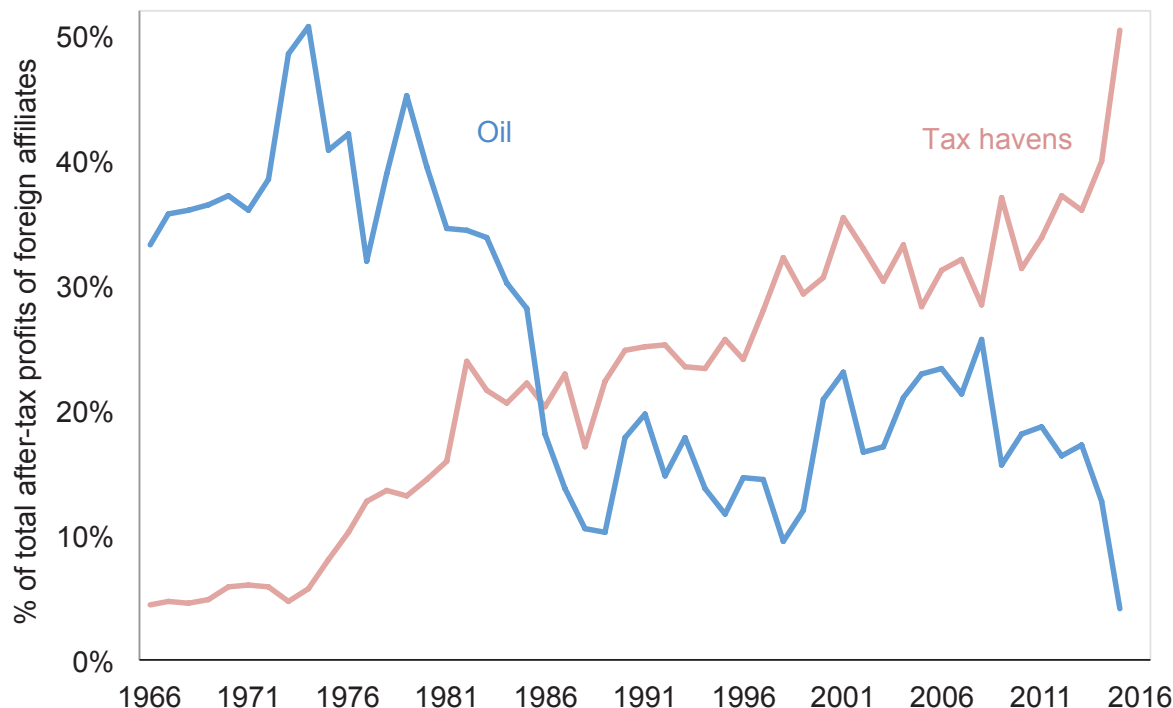
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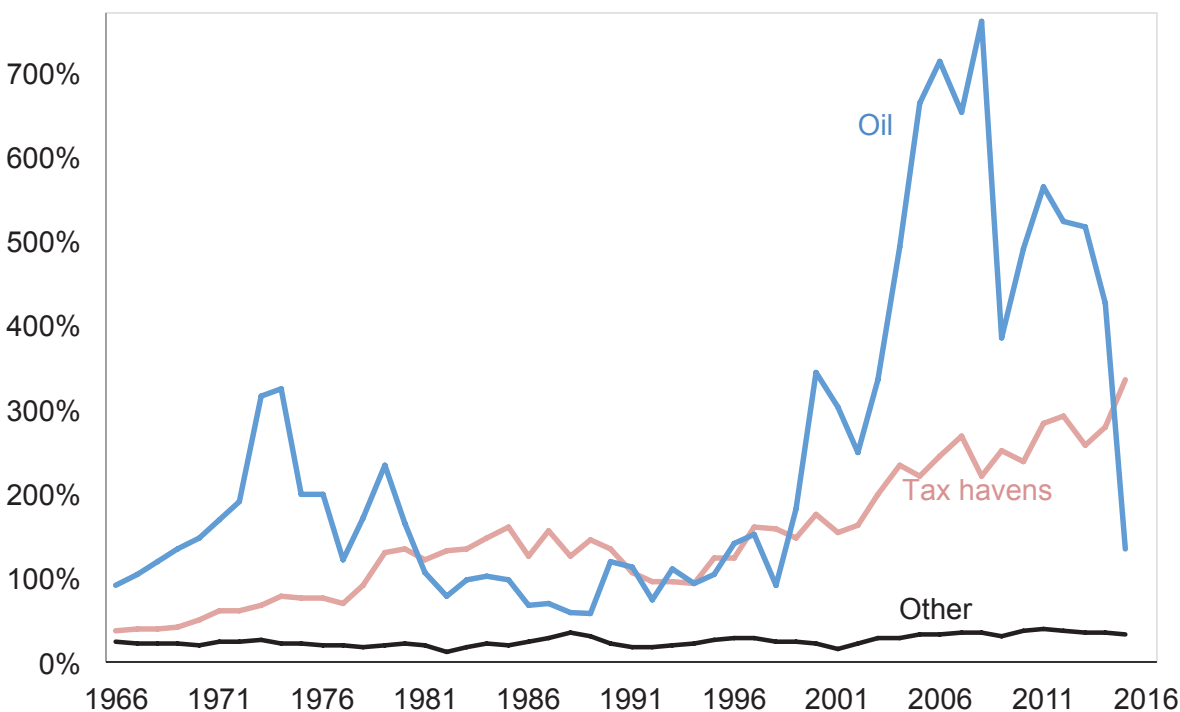
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Figure 1: The role of oil and tax haven affiliates

Panel A: Share of oil and haven affiliates in after-tax profits

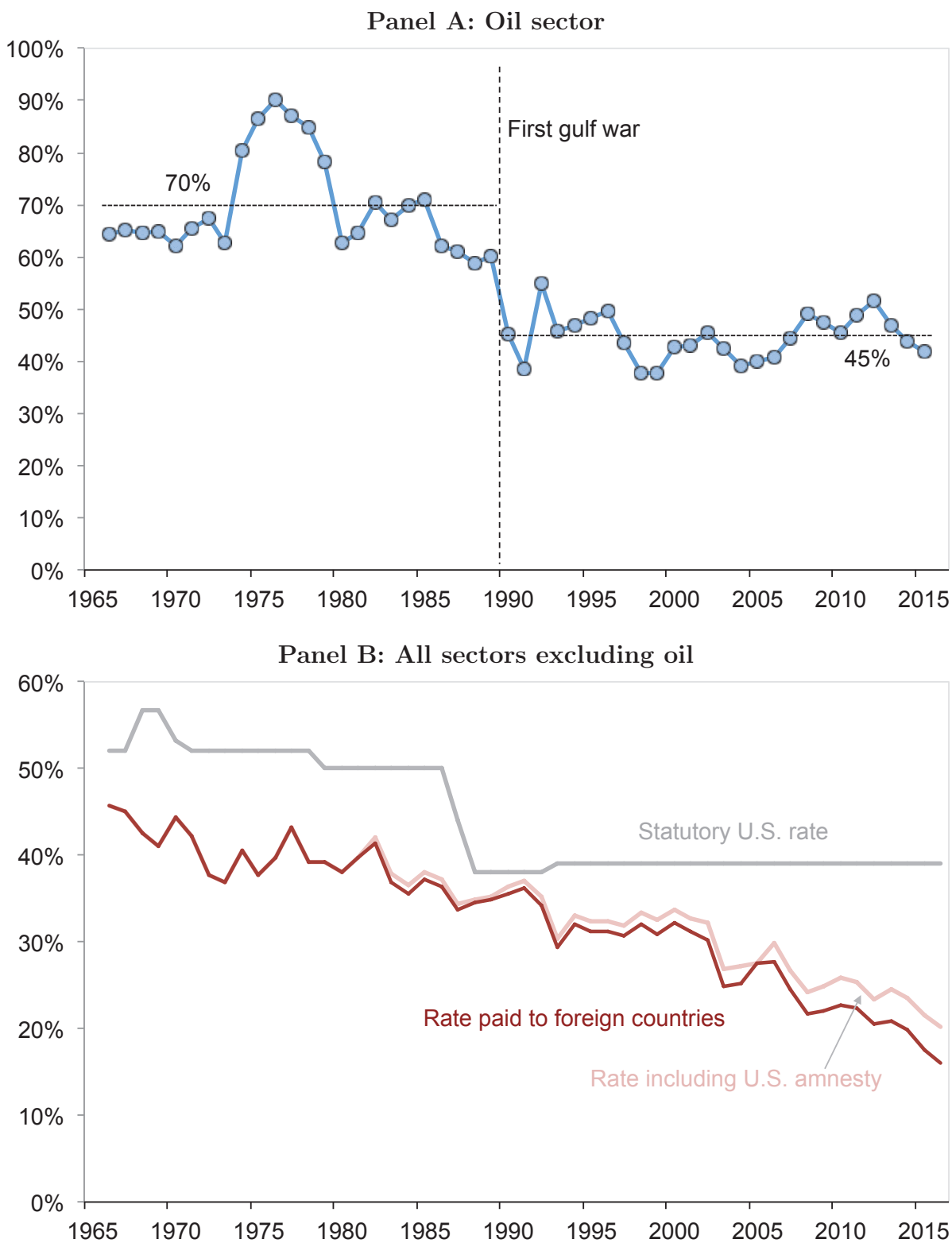


Panel B: After-tax profits (% of wages paid)



Notes: Profits are after net interest payments, capital depreciation, and foreign corporate taxes. Tax havens include Ireland, Luxembourg, Netherlands, Switzerland, Singapore, Bermuda and Caribbean havens, excluding profits by affiliates in the oil sector. Oil includes affiliates in oil and gas extraction, petroleum and coal products, and petroleum wholesale trade. Source: BEA survey of the foreign operations of U.S. multinationals and authors' computations, see Appendix Tables A.2 and A.4 (Panel A) and A.2, A.3, A.11b, A.12b, and A.13 (Panel B).

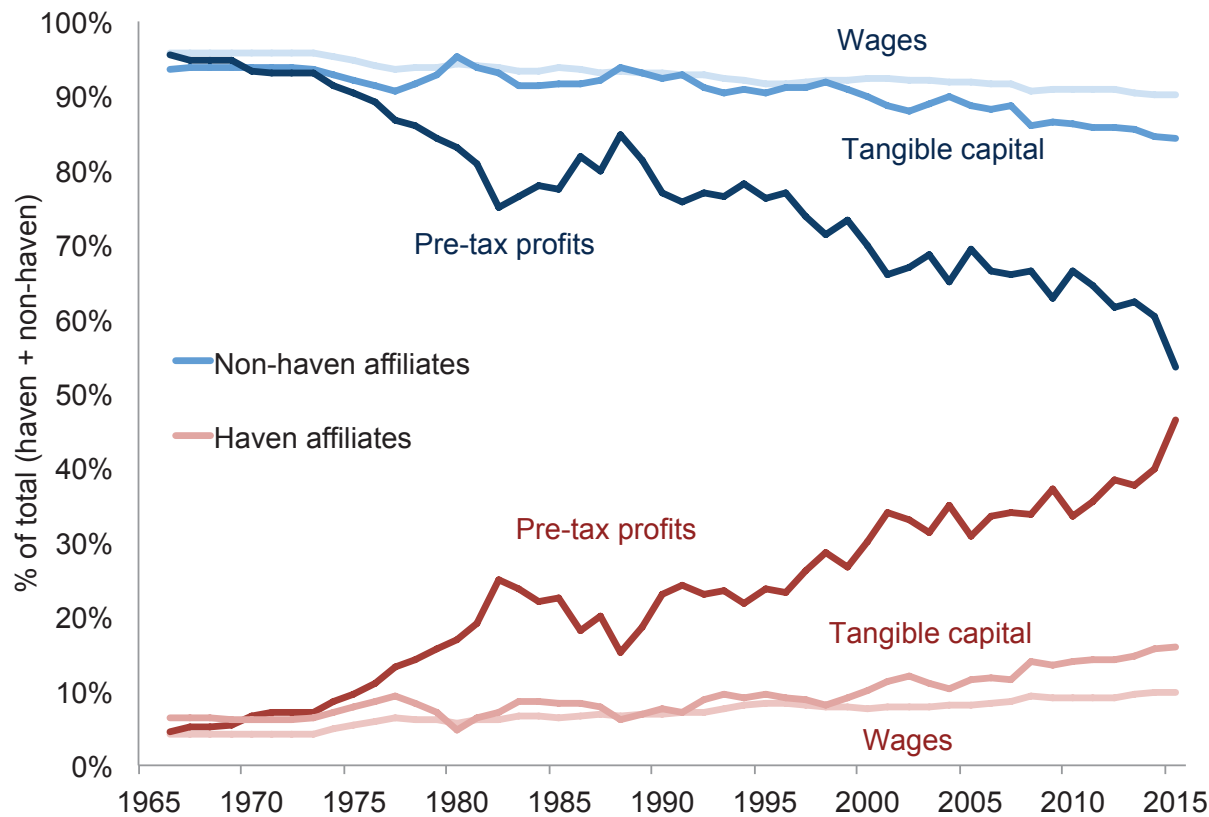
Figure 2: Tax rates paid by U.S. multinationals on their foreign profits



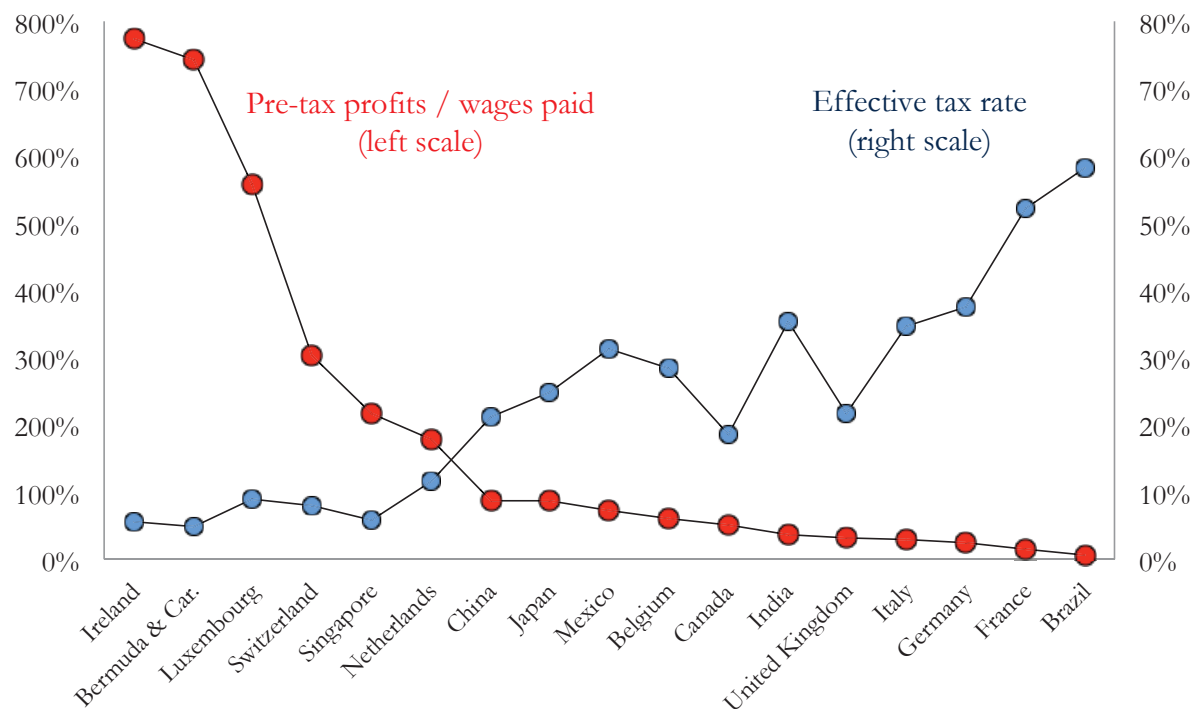
Notes: Foreign tax rates are computed by dividing foreign corporate income taxes paid (BEA survey Tables II.D.1 and II.D.2) by pre-tax profits net of interest payments and capital depreciation (“profit-type return” in the BEA survey Tables II.F.1 and II.F.2). Source: BEA survey of the foreign operations of U.S. multinationals and authors’ computations, see Appendix Table A.2.

Figure 3: Foreign operations, profits, and taxes of U.S. multinationals

Panel A: Share of wages, capital, and profits in havens vs. non-havens affiliates

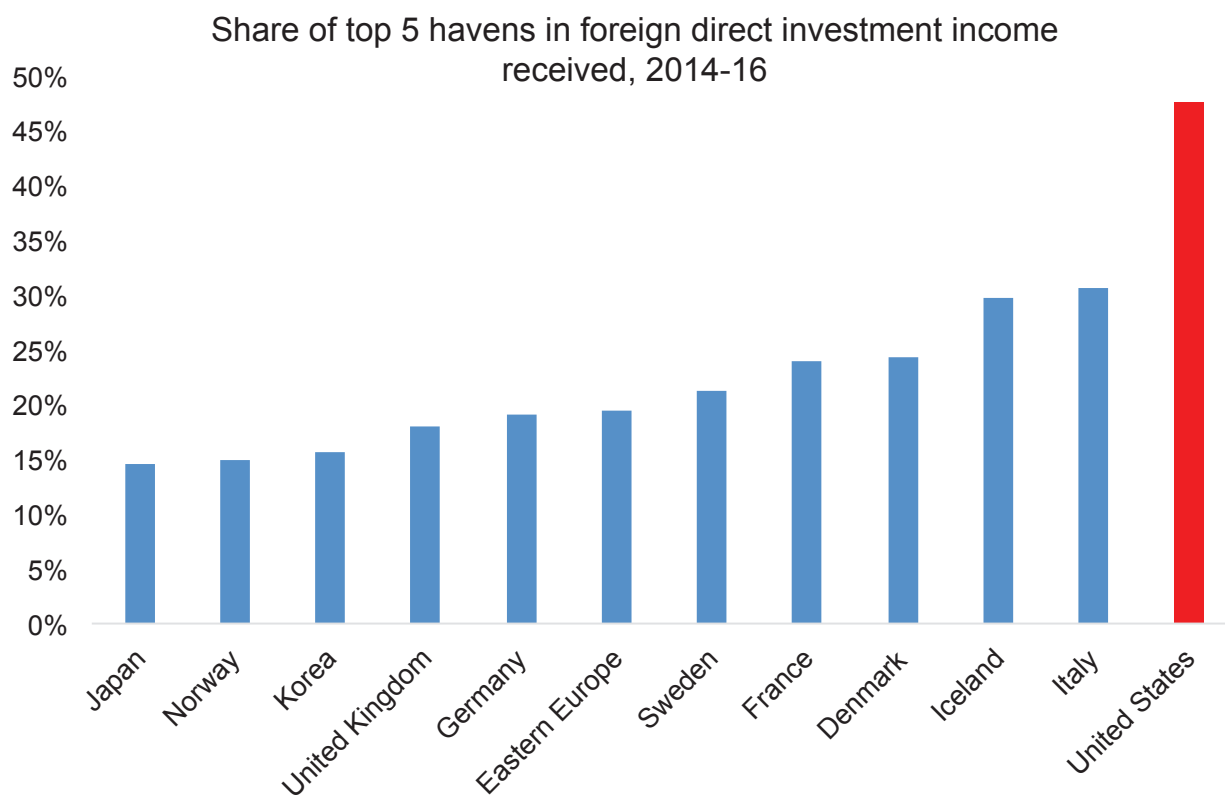


Panel B: Pre-tax profits vs. effective tax rates (2015)



Notes: As in Figure 2, profits are computed after net interest payments and capital depreciation and are before corporate income taxes. Source: BEA survey of the foreign operations of U.S. multinationals, Tables II.F.1, II.F.2, II.D.1, II.D.2, and for tangible capital II.B 1-2 (column “Plant, property, and equipment (net)).

Figure 4: The share of havens in direct investment income received



Notes: Top 5 havens are Ireland, Luxembourg, Switzerland, Netherlands, and Singapore. Shares are averages for 2014-16, and FDI income data is on a directional basis. We use total FDI income (instead of equity income only) as few countries publish bilateral FDI equity income data. The sample includes all countries where the 5 havens are covered. Note that these data are based on balance of payments statistics which are compiled on an immediate counterpart basis (contrary to the series we report elsewhere in this paper for the United States). To the extent that multinational firms use intermediate holding companies located in tax havens, balance of payment statistics over-estimate the share of taxable foreign profits made in tax havens. But we know that disregarding holding companies, U.S. multinationals report close to 50% of their economic foreign profits in tax havens (Figure 1). This is much higher than the share of DI income from havens reported by other OECD countries, a share which might itself be upwards biased. Source: OECD FDI income database.