



Did the Tax Cuts and Jobs Act Reduce Profit Shifting by US Multinational Companies?

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Abstract

The 2017 Tax Cut and Jobs Act lowered the US corporate tax rate and introduced provisions to curb profit shifting. We combine survey data, tax data, and firm financial statements to study the evolution of the geographical allocation of US firms' profits after the reform. Between 2017 and 2020, the share of profits booked abroad declined by 1–5% points, in part related to repatriations of intellectual property to the USA. However, the share of foreign profits booked in tax havens remained stable at around 50%. While aggregated changes in profit allocation are small, a number of firms responded strongly.

1 Introduction

A growing body of research shows that multinational corporations shift a large fraction of their foreign profits—profits booked by firms outside of their headquarter country—to tax havens (e.g., Tørsløv et al. 2022; Garcia-Bernardo and Janský, 2024). US multinationals appear to shift a particularly large fraction of their foreign

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income to low-tax places (e.g., Dowd et al. 2017; Clausing 2020a; Guvenen et al. 2022; Laffitte and Toubal 2021).

The Tax Cuts and Jobs Act (TCJA), enacted at the end of 2017, dramatically changed the profitshifting incentives faced by US corporations. The Act lowered the US federal corporate income tax rate from 35 to 21%, reducing the gap between US and foreign rates. The USA switched from a worldwide tax system—in which the foreign profits of US firms were, upon repatriation, subject to taxation in the USA—to a territorial tax system—in which foreign profits are generally exempt from US taxes.¹ To reduce the incentives to shift profits to tax havens, the Act also introduced three provisions: a US tax on foreign income subject to low tax rates abroad; a reduced rate on foreign income derived from intangibles booked in the USA; and measures to limit the deductibility of certain payments suspected to shift income out of the USA.

This paper asks one key question: How has the international allocation of US firms' profits evolved after the Tax Cuts and Jobs Act? Specifically, has profit shifting to tax havens declined? And if so, have profits shifted back to the United States? These questions are important in light of ongoing policy discussions about an international agreement on a minimum corporate tax (OECD 2021). If the TCJA substantially curbed profit shifting, further reforms may be less urgent than commonly thought. But if sizable profits are still booked in low-tax places, new policy measures may be warranted.

This paper addresses these questions by combining and reconciling all publicly available data on the location of US firms' profits. Our main contribution is to provide the first comprehensive analysis of trends in profit shifting after the Tax Cuts and Jobs Act. This was difficult until recently because of the delays involved in the publication of the key survey and tax data needed to conduct this analysis. Tabulations of the 2019 Bureau of Economic Analysis survey of the activities of US multinationals were published in November 2021 and the 2019 IRS country-by-country statistics in April 2022. Due to the lack of comprehensive data, previous research on this issue had to focus on case studies of specific firms or industries. Using a sample of the largest 10 pharmaceutical multinationals, Sullivan (2020) finds no evidence of profit shifted back to the USA. Coffey (2021) studies changes in the use of Ireland as a tax haven by US multinational companies. By contrast, we study trends in profit shifting for US firms as a whole. The data sources we use go up to 2019 or 2020, allowing us to capture two or three years post-reform and to provide a clear picture of the dynamic of profit shifting after the Tax Cuts and Jobs Act. Our analysis carefully accounts for the specificities of each data source and addresses the different pitfalls involved in the measurement of profit shifting, including double-counting issues.

Our main statistics of interest are the fraction of US firms' profits booked in the USA vs. abroad, and the fraction of their non-US profits booked in tax havens. We

¹ In practice, territorial systems (including the new US system) usually have anti-avoidance provisions to prevent firms from shifting domestic profits abroad; and most systems—including the new US tax system and the pre-Tax Cuts and Jobs Act one—can be characterized as hybrid.



provide a thorough descriptive analysis of changes in these statistics, relating their evolution to incentives introduced by the Tax Cuts and Jobs Act, and reconciling macro-level tabulated survey and tax data with micro-level public corporate financial statements. Our main findings are the following.

First, there is evidence that, consistent with incentives introduced in the law, US corporations book a larger share of their profits in the US post-reform. This change, however, is relatively small: the share of profits booked abroad has decreased by about 1–5% points, to about 27% for all US companies. A forensic analysis of listed corporations reveals six cases of large companies (Alphabet, Microsoft, Facebook, Cisco, Qualcomm, Nike) with a decrease in the share of foreign earnings of over 20% points that appears clearly related to changes in profit shifting, more precisely to repatriation of intellectual property to the USA. These large firms drive the macroeconomic decline in the share of US multinationals' profit booked outside of the USA.

Second, the geographical allocation of the foreign profits of US multinationals does not appear to have been significantly affected by the Act. Across data sources, the share of foreign profit booked in tax havens has remained stable at around 50% between 2015 and 2020. The similarity of findings across independent sources suggests that the high and stable share of haven profits over this period is robust. Since the share of profits outside of the USA has only slightly declined (to about 27% for all US corporations), the share of total (domestic plus foreign) profits booked by US corporations in tax havens has remained around 13–15% throughout the 2015–2020 period, a historically high level. Thus, although a few firms responded to incentives introduced by the Act—sometimes with dramatic effects at the micro-level—the global allocation of profits by US firms appears to have changed relatively little overall. This heterogeneity among firms' reactions is reflected in the regression analysis that we use to investigate whether the sensitivity of profits to tax rates differs before and after the reform.

Quantifying this evolution is important because the Tax Cuts and Jobs Act is the largest change to US corporation taxation since 1986 and its provisions have a priori ambiguous effects (Auerbach 2018; Slemrod 2018; Chalk et al. 2018; Hanlon et al. 2019). The lower US rate—as well as the measures introduced to limit profit shifting, such as the minimum tax on foreign income known as Global Intangible Low-Taxed Income (GILTI)—reduce the incentives for US firms to book profits in tax havens. However, the move to a territorial system increases the incentives to shift income to low-tax countries. Moreover, certain aspects of GILTI give US firms incentives to move tangible capital to low-tax countries (Clausing 2020a).

Methodologically, our contribution is to reconcile the available evidence on the location and taxation of the profits of US firms. There is a lively debate on the size of profit shifting and a body of work investigating the pros and cons of various data sources and series (e.g., Tørsløv et al. 2022; Dowd et al. 2017; Guvenen et al. 2022; Clausing et al. 2016; Wright and Zucman 2018; Bilicka 2019; Blouin and Robinson 2020; Clausing 2020b; Garcia-Bernardo et al. 2021; Dyreng et al. 2022). Taking stock of this body of work, we show that the different sources paint a consistent picture once the definition of profit is harmonized, the specificity of each source (e.g., sample of firms covered) is accounted for, and any double-counting (when it exists)



is removed. Our paper also adds to the body of work investigating the effect on profit shifting of government policies such as the shift to territorial taxation (e.g., Liu et al. 2020; Liu 2020), changes in controlled-foreign corporations rules (e.g., Clifford 2019) or increases in monitoring and enforcement (e.g., Bustos et al. 2022). Relative to this literature, we provide a comprehensive analysis of the combined effects of what is arguably one of the largest international tax reforms of the last decades.

The rest of this paper proceeds as follows. Section 2 presents the data sources and describes our methodology. Section 3 discusses our findings on the US vs. foreign split of US corporations' profits, and Section 4 studies changes in the location of foreign profits. Section 5 investigates whether the sensitivity of profits to tax rates differs between the periods before and after the TCJA. Section 6 concludes.

2 Data and Methodology

In this section, we introduce the data sources on the profits of US multinational companies and we briefly describe how we constructed our main macroeconomic statistics of interest, i.e., the share of US corporations' profits made abroad, and the share of foreign profits booked in tax havens. We present the data sources in more detail in Appendix A and we describe in more detail the construction of the harmonized statistics in Appendix B.

2.1 Data on the Profits of US Multinational Companies

We use four data sources to study the activities of US multinational companies: national accounts; surveys conducted by the Bureau of Economic Analysis (BEA); company financial statement collected in Compustat; and country-by-country data collected by the Internal Revenue Service. The data sources differ in what companies they cover: all US corporations (macroeconomic accounts), multinational corporations (BEA survey and country-by-country data), and listed corporations (Compustat).

First, we start by building the most comprehensive aggregates possible, namely total domestic and foreign profits for all US corporations, using national accounts data.

Second, the Bureau of Economic Analysis (BEA) conducts mandatory surveys of the foreign operations of US multinational companies. These surveys are the raw source used by BEA to produce its international economic accounts, including balance of payments statistics and activities of multinational enterprise statistics. As our preferred measure from the surveys, we use the variable "profit-type return." For comparison, we also report results using direct investment income. In contrast to direct investment income, profit-type return is not pro-rated by the ownership stake of the parent—it includes all profits of majority-owned affiliates and excludes those of minority owned affiliates—and is gross of foreign income taxes. Once foreign taxes are removed, profit-type return and direct investment equity income line up well on aggregate.



The third main data source to study US multinationals is companies' public financial statements (annual 10-K filings to the Securities and Exchange Commission), collected in S&P's Compustat North America. Compustat covers listed corporations; it excludes private companies which do not have to publicly disclose their accounts. The vast majority of listed firms report a breakdown of their global profits into US vs. non-US. However, profits are not broken down by country.

The fourth main data source is the country-by-country data published by the Internal Revenue Service. These data, available from 2016 onward, cover all US-headquartered multinationals with annual revenue over \$850 million. An advantage of country-by-country statistics is that these data may more closely reflect how US firms allocate profits for tax purposes than other data sources. Multinationals are required to report profits by "tax jurisdictions"—the IRS states that "a business entity is generally considered a resident in a tax jurisdiction if, under the laws of that tax jurisdiction, the business entity is liable for tax therein."

2.2 Methodology: Construction of Domestic, Foreign, and Haven Profit

Our main macroeconomic statistics of interest are (i) the share of US corporations' profits made abroad, and (ii) the share of foreign profits booked in tax havens. We first estimate aggregate domestic and foreign profits. Our goal is to construct aggregate series that maximize comparability across sources (e.g., based on the same definition of profit); that are comprehensive (i.e., covering the largest sample of firms possible); and that are consistent (e.g., without double counting and with a consistent treatment of taxes and depreciation, so that meaningful ratios of foreign to total profits can be constructed).

2.2.1 Macroeconomic Accounts (All Corporations)

We start by building the most comprehensive aggregates possible, namely total domestic and foreign profits for all US corporations, using BEA's National Income and Product Accounts (NIPA) and International Economic Accounts.

2.2.2 BEA Survey (Multinationals)

Next, we construct aggregate domestic and foreign profits for multinational companies in the BEA survey. US profits are computed as profit-type return of parents. Foreign profits are computed as profit-type return of majority-owned affiliates. Both domestic and foreign profit so defined are net of book (not economic) depreciation. Before 1994, profit-type return (for both parents and foreign affiliates) is computed as net income plus foreign income taxes paid minus income from equity investment minus capital gains.



2.2.3 Compustat (Listed Firms)

We compute total US and foreign profits for US listed firms in Compustat. Global profits are variable pi and foreign profits variable $pifo$. All listed firms report their global profits. Since 2010 we observe foreign profits for about 95% of listed firms weighted by global profit.

2.2.4 Country-by-Country Data (Multinationals)

Finally, we compute total domestic and total foreign profits in the country-by-country data. The main drawback of existing country-by-country data is that they can double count profits. Until 2020, OECD guidelines did not explicitly instruct companies to remove intra-group dividends from profits. When intra-group dividends are included, profits can be counted multiple times when they flow through chains of holding companies. We address this issue in Section B.2 below. Specifically, we use Compustat and other sources to estimate total domestic and foreign profits which should in theory (given reporting threshold requirements) be reported if there was no double-counting, and re-scale the country-by-country data so that they match these totals, building on Horst and Curatolo (2020). A detailed of the correction process is provided in the Appendix Section D.

2.2.5 Consistency Across Sources

Table A1 in the Appendix compares the amount of foreign profits earned by US multinationals across sources. All series reported in this table are on a pre-tax basis and based on book depreciation. The absolute amounts line up well. The differences in aggregate totals reflect differences in the sample of firms covered.

3 Evolution of the Share of Profits Made Abroad

3.1 Foreign vs. Domestic Profits: Aggregate Data

We begin by examining whether the 2017 Tax Cuts and Jobs Act affected where US corporations book their profits globally. Figure 1a displays the evolution of the share of profits booked abroad by all US corporations (macroeconomic accounts), multinational corporations (BEA survey and country-by-country data), and listed corporations (Compustat). Two main results emerge.

First, the foreign share of profit is relatively similar across sources. It ranges from 30 to 45% across sources in 2019–2020, reflecting the different underlying samples of firms. Multinationals naturally have a higher foreign profit share than all US corporations, which includes firms with no affiliates abroad (including small single-owner firms, such as incorporated self-employed individuals). The gap was significant in the 1980s and early 1990s but has become smaller in recent decades as multinationals captured by the BEA survey account for a high and growing share of all US corporate profits. Listed companies have the highest



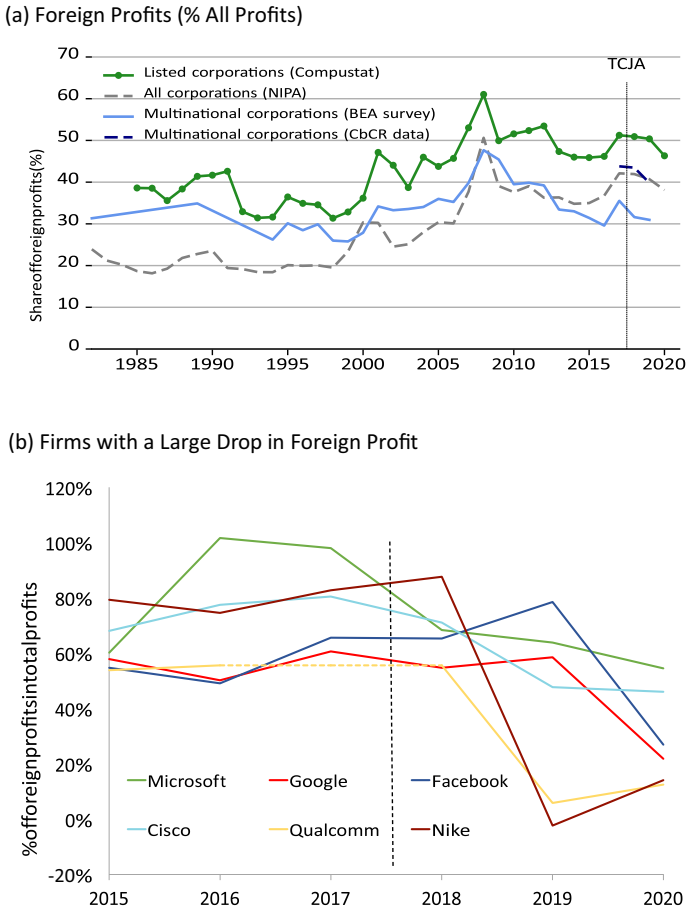


Fig. 1 Foreign Share of Profits of US Firms. *Note* Panel (a) shows the ratio of pre-tax profits booked outside of the USA to total (domestic plus foreign) pre-tax profits for all corporations (using National Income and Product Account data), multinational corporations (using the BEA survey and country-by-country data), and listed corporations (using Compustat). See text for computation of foreign and domestic profits in each source. In Compustat, the sample includes all firms headquartered in the USA with non-missing *pifo* and profits are winsorized at the 99th and 1th percentile. Due to the COVID-19 pandemic, in 2020 the BEA data show an increase in the foreign-profit share, driven by a sharper fall in domestic than in foreign profits of U.S. multinationals. We exclude 2020 from the main BEA series because of these distortions. However, once we control for business-cycle conditions (Appendix Fig. A2 and Table A3), the COVID-related spike disappears. Moreover, when including both 2020 and 2021 in the Appendix (Appendix Figs. A2, A3, A13 and A14), the evidence shows 2020 was an outlier and the downward trend resumes in 2021. Panel (b) shows the evolution of the foreign share of profit for listed multinationals with a 20 points or more decline in the foreign share linked to changes in profit shifting strategies. See Appendix E for details on sample construction.

foreign profit share, as listed firms tend to be larger and more internationalized. The foreign share in our corrected country-by-country data lies in between that seen in Compustat and in the BEA survey.



Second, in all series, the foreign profit share fell 1–5% points between 2017 (the year immediately preceding the Tax Cuts and Jobs Act) and 2020 (the last year in our study). There is agreement across sources that the trend is toward a slightly higher share of profits being booked in the USA. The evolution by sector (shown in Appendix Fig. A7) reveals some heterogeneity in responses following the TCJA. While the Information sector displays a pronounced and sustained decline in the foreign share of profits from 2017 onward, other sectors show more muted or inconsistent patterns. Notably, the Finance sector shows virtually no change over this period, and in three of the five sectors depicted, the 2019 foreign profit share exceeds its 2017 level. Also, there is no evidence of a systematic fall in 2018–2019 from the sectoral perspective (Appendix Fig. A7). These sectoral trends contrast with the overall downward movement seen in aggregate data (Fig. 1a), which is in part related to a small number of large firms. This suggests that the aggregate decline is not reflective of a broad-based sectoral response but rather concentrated within specific industries or firms.

Given that the share of foreign profits fluctuates in the short run (Fig. 1a), the small post-TCJA decline could reflect factors other than the reform itself. We examine and exclude three possibilities. First, the COVID-19 pandemic might have distorted the series. In 2020 the BEA data show an increase in the foreign-profit share, driven by a sharper fall in domestic than in foreign profits of U.S. multinationals. We exclude 2020 from the main BEA series because of these distortions. However, once we control for business-cycle conditions (Appendix Fig. A2 and Table A3), the COVID-related spike disappears. Moreover, when including both 2020 and 2021 in the Appendix (Appendix Figs. A2, A3, A13 and A14), the evidence shows 2020 was an outlier and the downward trend resumes in 2021.

Second, differences in the timing of business cycles between the USA and the rest of the world could drive short-term movements. To test for this, we estimate a regression of the share of foreign profits on (i) U.S. real GDP growth, (ii) foreign real GDP growth, and (iii) the percent change in the broad nominal U.S. dollar index (Appendix Fig. A2 and Table A3). We obtained the relevant data from the World Bank.² Results are robust: the post-TCJA decline in the unexplained (residual) foreign-profit share remains about 2 p.p. relative to 2017 (Appendix Fig. A2).

Third, exchange-rate fluctuations could matter, since an appreciation of the dollar reduces the value of foreign profits when expressed in USD. In addition to the regression control described above, we construct a currency-adjusted series by re-expressing foreign profits using nominal bilateral USD exchange rates by country, normalizing each country's rate to its 2017 level and scaling reported profits accordingly (Appendix Fig. A3). The currency-adjusted series shows that exchange rates do not explain the observed decline. Taken together, these adjustments reinforce the evidence that the TCJA played a central role in the decline of foreign profit shares.

² Specifically, we obtained annual real GDP data directly from the World Bank (indicator *NY.GDP.MKTP.CD*). Foreign GDP is calculated as world GDP minus US GDP. We obtained yearly values of the dollar index (measuring aggregated exchange rates) from the FRED (indicator *DTWEXBGS_PCH*); for early gaps we backfill with *DTWEXB_PCH* and, if needed, *DTWEXM_PCH*.



3.2 Firm-Level Case Studies

To learn more about the potential contribution of the TJCA, we turn to Compustat firm-level data. We identify all the firms that experienced a sustained decline (defined as lasting through to the end of our study, 2020) of the foreign share of profit of at least 10 or 20% point post-Tax Cuts and Jobs Act. We then manually check the annual 10-K of these firms to understand the origin of the decline, as detailed in Appendix E.

Our methodology identifies 23 firms with positive profits over the 2017–2020 period, more than \$10 billion in revenue at least one year during the period, and a more than 20 points drop in the foreign profits share post-Tax Cuts and Jobs Act (Fig. 1b). In 6 cases (Alphabet, Cisco, Facebook, Microsoft, Nike, and Qualcomm), the decline is unambiguously (or very likely) related to changes in profit shifting strategies, specifically repatriation of intellectual property to the USA. For instance, Alphabet states in its 2020 annual 10-K that: *“As of December 31, 2019, we have simplified our corporate legal entity structure and now license intellectual property from the U.S. that was previously licensed from Bermuda resulting in an increase in the portion of our income earned in the U.S.”* In 6 additional cases, there is some limited evidence that the decline may be partly profit-shifting related. In the remaining 11 cases, there is no evidence that changes in profit shifting are involved. Appendix Table A4 discusses each case. Around 90% of listed firms with positive profits over the 2017–2020 period and more than \$10 billion in revenue (at least one year during the period) experience no large change (defined as a sustained decrease of more than 20%) in their foreign earnings share.³ Thus both in dollar-weighted and unweighted terms, the domestic vs. Foreign profit split appears relatively little changed after the Act.

To form a lower bound for the contribution of changes in profit shifting strategies to the decline in the aggregate foreign profit share, we compute the amount of profit that would be booked by Alphabet, Cisco, Facebook, Microsoft, Nike, and Qualcomm outside of the USA in 2020 if their foreign income share had remained equal to its pre-Tax-Cuts-and-Jobs-Act level. We find that the foreign share of US corporations’ profits would be 2.8 points higher in 2020.⁴ To form an upper bound, we do the same computation but for all 22 firms with a 20 points or more sustained drop in the foreign income share, whether or not there is explicit evidence that the decline is profit-shifting related. We find that US corporations’ foreign income share would be 4.2 points larger in 2020. These results suggest that changes in profit shifting strategy can account for a significant fraction of the 1–5% point decline in the foreign

³ There are 219 listed firms with positive profits over the 2017–2020 period and more than \$10 billion in revenue at least one year during the period. Out of this sample, 23 (i.e., 10.5%) experience a 20% or more sustained decline in their foreign earnings share after the Act. Figure A6 in the Appendix shows the evolution of foreign profits for all listed firms between 2015-16 and 2018-20.

⁴ We estimate that Alphabet, Cisco, Facebook, Microsoft, Nike, Qualcomm would have booked \$61 billion extra in the United States, which is 2.8% of the \$2,194 billion in total pre-tax profits made by US corporations in 2020.



share of US corporations' profit, and that the repatriation of intellectual property by a few large tech companies accounts for most of this drop.⁵

The decline in foreign income observed for some firms is consistent with incentives introduced in the Tax Cuts and Jobs Act. The Act introduced a reduced rate on foreign income derived from intangibles booked in the USA known as FDII (foreign-derived intangible income). Royalties earned on exports of the right to use intellectual property booked in the USA are taxed at 13.125%. The law also introduced a new tax on foreign income subject to low tax rates abroad, known as GILTI (global intangible low-taxed income).

An important caveat when interpreting changes in profit shifting after 2017 is that the Tax Cuts and Jobs Act coincided with other major international law changes. Most importantly, in 2020 Ireland phased out the “Double Irish” structure which allowed companies like Alphabet to book income in subsidiaries incorporated in Ireland but taxable in Bermuda (see e.g., Zucman 2014, for a description of this scheme). Alphabet would probably have moved its intellectual property out of its Irish/Bermuda subsidiary even absent the Tax Cuts and Jobs Act, although provisions introduced in the Act may have been the reason why it chose to move it to the USA. For that reason, the observed decline in the foreign income share of US companies should probably be seen as an upper bound for the effect of the Tax Cuts and Jobs Act.

4 Evolution of the Geography of Foreign Profits

Next, we examine how the *foreign* earnings of U.S. multinationals have shifted geographically, with a focus on the share booked in tax havens (Fig. 2A).

We are interested in profit booked in individual tax havens as well as tax havens as a group. To discuss the results, we group the tax havens in two categories, as in Reurink and Garcia-Bernardo (2020): “profit centers” and “coordination centers.” Profit centers include territories used primarily for profit booking, with little production: Bermuda, the Cayman Islands, Puerto Rico, Jersey, Isle of Man, Gibraltar, Barbados, Mauritius, British Virgin Islands, Bahamas and Malta. Coordination centers include havens that are used to book profit but also for management and other coordination activities: Singapore, the Netherlands, Switzerland, Ireland, Luxembourg and Hong Kong. Over the 2015–2020 period, we find that all existing series—direct investment income, profit-type return, country-by-country data—paint a consistent picture.

First, the fraction of foreign profit booked in havens is broadly similar across sources, although a number of differences deserve to be noted. About 50% of the foreign profits of US multinationals appear to be booked in tax havens in recent years. The haven share is higher in direct investment income statistics (around 55%) than in profit-type return series (around 45%) with the corrected country-by-country

⁵ Considering firms with a 10 percentage points or more decline in the foreign earnings share yields similar findings.



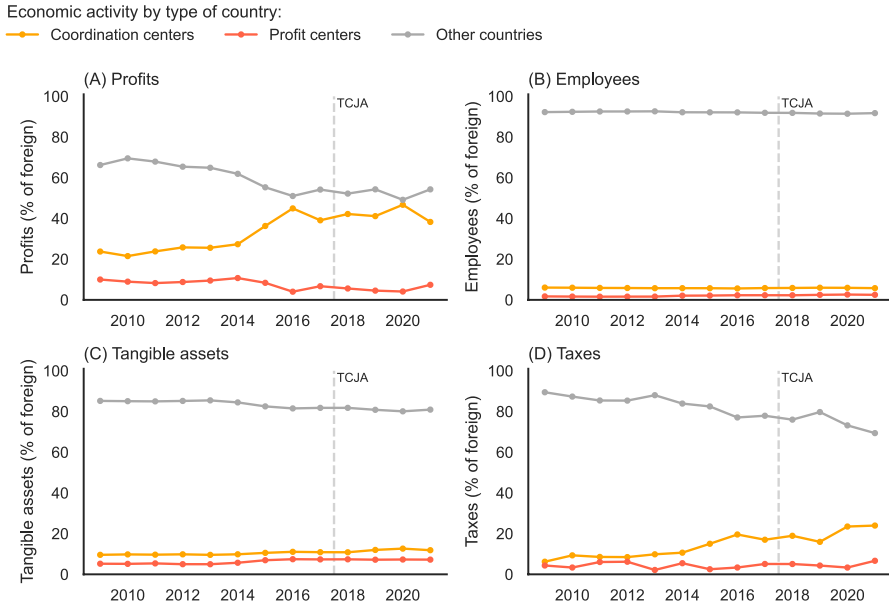


Fig. 2 Share of foreign profits, employees and tangible assets. *Notes:* Economic activity disaggregated by type of country. **A** Profit-type return **B** Number of employees **C** Tangible assets **D** Taxes paid. See text for definition of profit center and coordination centers. *Source:* BEA survey. The same figure using other data sources is available in the Appendix Figs. A9 and A10.

series usually in between (Fig. A9A). For the reason discussed in Section A.1, direct investment income series can be seen as an upper bound while profit-type return series can be seen as conservative. Appendix Fig. A11 reports a comparison across sources at the haven level. More profit is assigned to Bermuda in the country-by-country data than in profit-type return series, and vice-versa for Ireland. In direct investment income series, more profit is assigned to conduit countries (Luxembourg, Netherlands), due to the fact that in direct investment statistics, profits are allocated to the country with which the US parent has a direct link.

Second, and most importantly, in the years immediately following TCJA, the share of foreign profits booked in tax havens has remained flat at around 50%. No source suggests a significant immediate change in the haven share of foreign profits. Looking at country-level patterns, for profit centers the share of profit booked in Bermuda, Jersey, Isle of Man and Gibraltar increased, while it fell in the Cayman Islands. For coordination centers, Ireland and Singapore attracted a larger share of foreign profits consistently across sources, while Netherlands and Switzerland kept their share of profits constant or, depending on the source, lost part of it. Overall gains and losses at the haven-level broadly offset each other.

Third, the high concentration of foreign profits in tax havens contrasts with the dispersion of employment and tangible assets. Consistently across sources, only 4–9% of foreign employees and 18–23% of foreign tangible assets are located in tax havens (panels B and C of Fig. 2), primarily in coordination centers, such as Ireland, Singapore or the Netherlands. The shares of foreign employees and foreign tangible



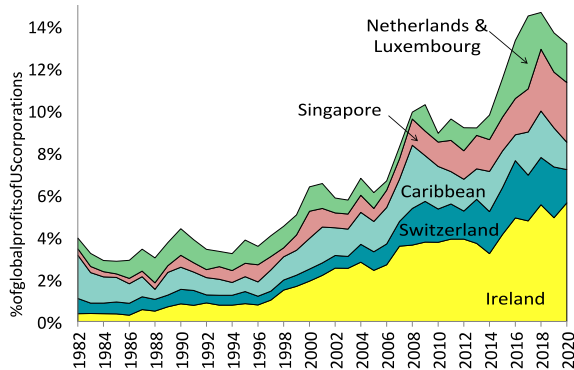


Fig. 3 Profits Booked by US Corporations in Tax Havens. Note: This figure shows the ratio of pre-tax profits booked in tax havens to global pre-tax profits for all US corporations (whether they have foreign affiliates or not). At the numerator, haven profits are estimated using data from the BEA survey of the foreign operations of US multinationals, series “profit-type return.” “Caribbean” includes Bermuda. At the denominator, global pre-tax profits include all domestic and foreign profits of US corporations, as reported in the US macroeconomic accounts; see Section B.1. Puerto Rico is excluded from both the numerator and denominator.

assets in tax havens are stable over the 2015–2019 period, suggesting no significant changes in patterns of tax competition for production factors.

Finally, we can combine the results from Section 3 on the share of profits booked abroad, with these results on the share of foreign profits booked in tax havens. For this computation, we use profit-type return series as our measure of the share of foreign profits booked in tax havens. Because profit-type returns series can be constructed back to 1982, we can show the long-run evolution of the fraction of US firms’ total profits booked in tax havens.⁶ Figure 3 reports the results.

The series in this figure is constructed by multiplying the share of global profits made abroad (Fig. 1 a, line “All corporations (NIPA)”) by the share of foreign profits booked in tax havens (Fig. 2, line “profit-type return,” removing Puerto Rico). For instance, in 2017, 32% of the total profits of US corporations (including firms with no foreign affiliates) were booked abroad, and 46% of the profit-type return of majority-owned affiliates was in tax havens. Therefore, $46\% \times 32\% =$ close to 15% of the global profits of US firms were booked in tax havens in 2017, a historical peak. This statistic fell back to 13% in 2020, driven by the decline in the foreign share of profit. Overall, the share of total profit booked in havens slightly fell but remained at a historically high level after the Tax Cuts and Jobs Act. This share was less than 5% in the 1980s and 1990s.

In sum, the Tax Cuts and Jobs Act was not followed by a major decline in the fraction of US firms’ profits booked in tax havens. Once all publicly available

⁶ Due to the lack of long-run time series on profits booked in Puerto Rico, we have to exclude this territory from the list of havens considered in Figure 3. Including Puerto Rico would increase the haven share throughout, though more research is required to know by how much exactly back in time.



sources are confronted and harmonized—so that profits are defined in the same way and any double counting is removed—these sources paint a consistent picture. There was a small decline the share of profits booked outside of the USA, largely driven by the repatriation of intellectual property to the USA by six large companies. In 2018–2020, US multinational corporations booked a similar share of their foreign profits in tax havens—around half—as in the years immediately preceding the reform. Combining these two findings implies a modest decline in the fraction of their total (US plus foreign) profits that US firms book in tax havens. These results suggest that additional policy efforts have the potential to further reduce profit shifting by US multinational companies.

5 Changes in Sensitivity of Profits to Tax Rates

Finally, we investigate using a standard regression framework whether the sensitivity of profits to tax rates differs between the periods before and after the TCJA.

We begin with a basic empirical question: are high profits in tax havens associated with low effective tax rates (ETRs)? Using adjusted CBCR data for profit-making affiliates from 2017 to 2019, we find a strong negative correlation between profitability (measured as profit per employee) and ETRs. The most profitable jurisdictions—e.g., Bermuda and Cayman Islands—combine extreme profitability with near-zero tax rates (Fig. 4a and b). In 2019, the top profit centers (accounting for 13.3% of total profits) recorded \$2.2 million in profit per employee with an average ETR of 1.4%. Coordination centers (35.4% of profits) exhibited lower profitability (\$470,000 per employee) and higher ETRs (8.3%).

These patterns are robust across datasets and align with findings in Cobham and Janský (2019), Tørsløv et al. (2022), and Garcia-Bernardo, Janský and Tørsløv (2021). Notably, no country combines high profitability and high ETRs, and only tax havens display both extremely high profitability and low ETRs.

Next, we estimate the elasticity of reported profits with respect to tax rates using four established specifications. The regression-based approach was pioneered by Hines and Rice (1994), who used a linear as well as a quadratic specification. We also consider a specification with tax haven dummies following Dowd et al. (2017) and a logarithmic specification as in Garcia-Bernardo and Janský (2024).

The linear and quadratic specifications are as follows:

$$\log(\pi_i) = \beta_0 + \beta_1 \log(K_i) + \beta_2 \log(L_i) + \beta_3(\tau_i) + \beta_\chi \chi + \varepsilon \quad (1)$$

$$\log(\pi_i) = \beta_0 + \beta_1 \log(K_i) + \beta_2 \log(L_i) + \beta_3(1 - \tau_i) + \beta_4(1 - \tau_i)^2 + \beta_\chi \chi + \varepsilon \quad (2)$$

where π_i represents profits booked in country i , including both real profit and profit shifted, and K_i and L_i are the capital and labor components of the Cobb-Douglas production function, usually operationalised with total tangible assets and wages. τ_i is the tax rate faced by the subsidiary which we proxy by ETRs, and χ are controls including e.g. GDP per capita and population.



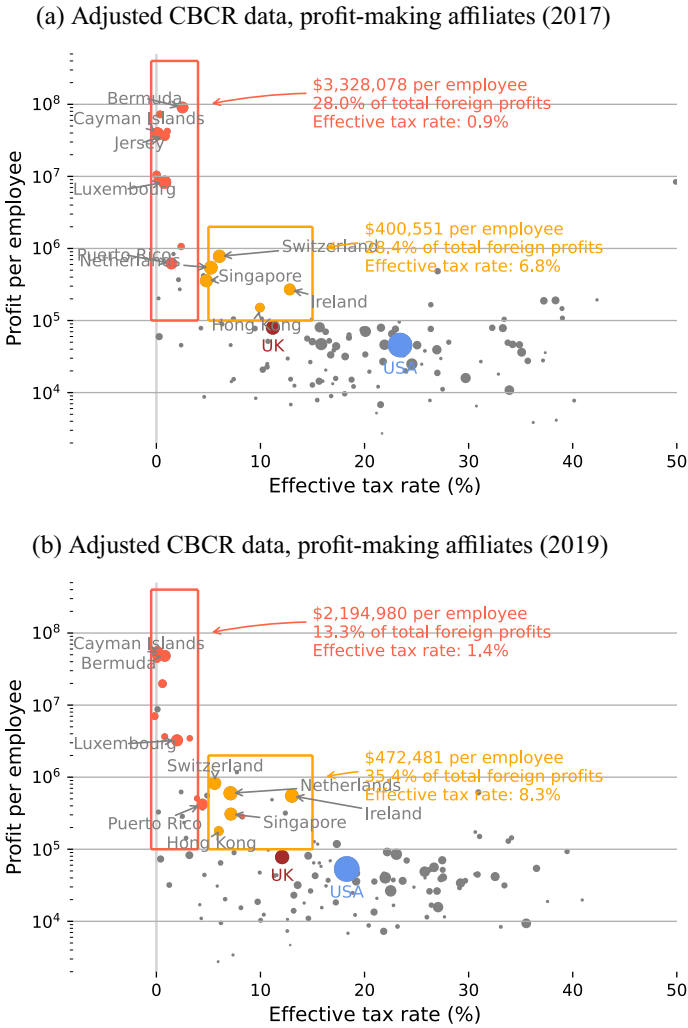


Fig. 4 Extreme profitability in tax havens. *Notes:* Profitability of affiliates is measured as profit per employee. Bubble size indicates the profits booked in the jurisdiction. Profit-centers are shown in red and coordination centers in orange. The average profit per employee, the share of total profits booked, and the average ETR is shown for the countries within the red and orange boxes. The USA is displayed in blue, and the United Kingdom is displayed in dark red. Only tax havens with at least \$10 billion of profits booked are annotated. ETRs for countries not present in the profit-making affiliates tables is calculated using data from all affiliates.

We then estimate a haven-specific semi-elasticity by interacting tax rates with a tax haven dummy, following Dowd et al. (2017):

$$\log(\pi_i) = \beta_0 + \gamma_1 TH_i + \beta_1 \log(K_i) + \beta_2 \log(L_i) + \beta_3(1 - \tau_i) + \gamma_2 TH_i(1 - \tau_i) + \beta_\lambda \chi + \varepsilon \quad (3)$$



Lastly, to account for extreme nonlinearities at very low tax rates, we apply a logarithmic specification as in Garcia-Bernardo and Janský (2024):

$$\log(\pi_i) = \beta_0 + \beta_1 \log(K_i) + \beta_2 \log(L_i) + \beta_3(\tau_i) + \beta_4 \log(t + \tau_i) + \beta_\chi \chi + \varepsilon \tag{4}$$

where $t = 0.001$ avoids instability in elasticity estimates for jurisdictions with ETRs close to zero. The results of the regressions are highly robust to the choice of the offset Garcia-Bernardo and Janský (2024).

Using BEA data with year fixed effects, we estimate these four specifications for pre-TCJA (2011–2016) and post-TCJA (2018–2020) periods. The results are presented in Table A5 in the Appendix and visualized in Fig. 5.

Across specifications, we find increased sensitivity of profits to tax havens in the post-TCJA period, especially at low tax rates typical of tax havens. Both quadratic and logarithmic specifications show that the relationship between profits and tax rates became more nonlinear post-TCJA—multinationals are increasingly sensitive to extremely low tax rates. Similarly, the haven dummy specification shows that semi-elasticity rose in havens and declined in non-havens. Somewhat in contrast, the linear specification shows less sensitivity post-TCJA, but averaged across haven and non-haven countries.

Our results suggest that while the statutory US tax rate declined and the overall incentive to shift profits abroad may have weakened, this was offset by rising sensitivity of profits to tax rates—especially within tax havens. This suggests that the TCJA’s anti-avoidance measures may not be sufficient to curb profit shifting. More

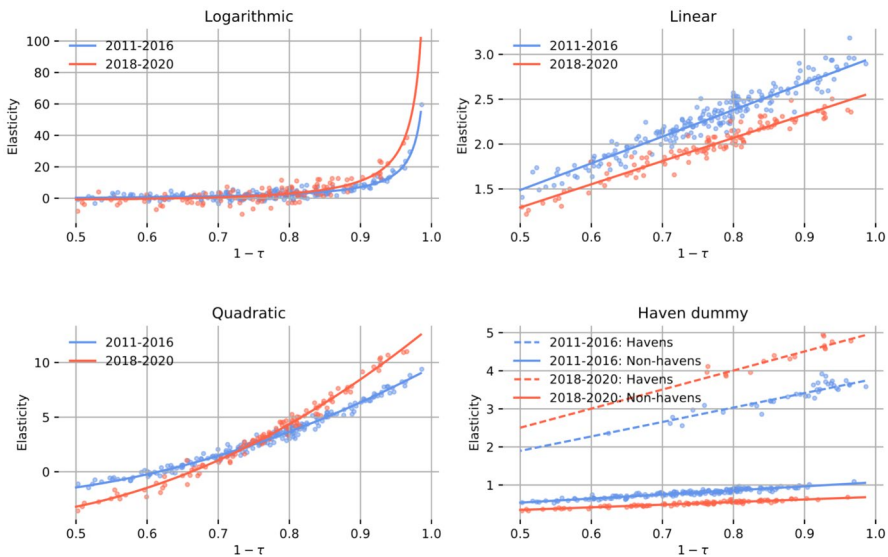


Fig. 5 Changes in sensitivity of profits to tax rates. *Notes:* Estimated tax semi-elasticity from four specifications—linear, quadratic, haven dummy and logarithmic—using the BEA data for the periods before the TCJA (2011–2016) and after (2018–2020), with year fixed effects. The results are robust to the inclusion of 2017 (the year TCJA was enacted), as shown in Fig. A15 in the Appendix.



stringent policy reforms, such as applying GILTI on a country-by-country or entity-level basis, rather than on an aggregate basis, may be needed to significantly reduce shifting to low-tax jurisdictions.

6 Conclusion

Following the 2017 Tax Cut and Jobs Act, US multinational companies faced lower corporate tax rates and new provisions designed to curb profit shifting. To assess how companies adjusted the geographical allocation of their profits after the reform, we combine survey data, tax data, and firm financial statements. After harmonizing all publicly available sources, we find a consistent picture of the share of profits booked abroad by US multinationals and how much of it is booked in tax havens.

Specifically, the share of profits booked abroad fell by 1–5% points, largely due to the repatriation of intellectual property to the USA. At the same time, the share of foreign profits booked in tax havens remained stable around 50% between 2015 and 2020. Taken together, these trends imply a modest decline in the fraction of total (domestic plus foreign) profits that US companies book in tax havens. While aggregate changes are small overall, we further show that some firms made substantial adjustments.

These findings suggest that further policy efforts may be needed to meaningfully reduce profit shifting by US multinationals. While the TCJA resulted in a modest reduction in the share of profits booked abroad, the persistently high share of foreign profits allocated to tax havens—around 50%—indicates that existing measures, such as the GILTI, may not be stringent enough to deter profit shifting substantially. Policymakers could consider enhancing the impact of these measures by applying GILTI on a country-by-country basis rather than in aggregate, as this would reduce opportunities for multinationals to offset high-tax and low-tax jurisdictions. Furthermore, international coordination, such as the OECD's global minimum tax, could play a pivotal role in reducing profit shifting incentives. Even if the USA does not fully adopt the global minimum tax in a near future, its implementation from 2024 onwards by many countries, including those in European Union, may nonetheless also curb profit shifting out of the USA.

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Data Availability All data and code used to produce the results in this paper are available in a publicly accessible replication package hosted on Zenodo (Garcia-Bernardo, Janský and Zucman, 2025). The



package contains the analysis code, documentation, and instructions for replication. Where underlying data are subject to access restrictions or confidentiality constraints, the replication package provides detailed guidance on how the data can be accessed or reconstructed. The replication package is available at: <https://doi.org/10.5281/zenodo.17988842>.

Declarations

Conflict of interest Not Applicable.

References

- Auerbach, A.J. 2018. Measuring the effects of corporate tax cuts. *Journal of Economic Perspectives*. <https://doi.org/10.1257/jep.32.4.97>.
- Bilicka, K.A. 2019. Comparing UK tax returns of foreign multinationals to matched domestic firms. *American Economic Review*. <https://doi.org/10.1257/aer.20180496>.
- Blouin, J. and Robinson, L. A. (2020). *Double Counting Accounting: How Much Profit of Multinational Enterprises Is Really in Tax Havens?* SSRN Scholarly Paper ID 3491451. Rochester, NY: Social Science Research Network.
- Bureau of Economic Analysis (2021). *U.S. International Economic Accounts: Concepts and Methods*.
- Bustos, S., D. Pomeranz, J.C.S. Serrato, J. Vila-Belda, and G. Zucman. 202). The Race Between Tax Enforcement and Tax Planning: Evidence from a Natural Experiment in Chile. *National Bureau of Economic Research Working Paper*, 30114.
- Chalk, N.A., M. Keen. and V.J. Perry. (2018). The Tax Cuts and Jobs Act: An Appraisal. *IMF Working Papers* 2018 (185).
- Clausing, K. 2020a. Profit shifting before and after the Tax Cuts and Jobs Act. *National Tax Journal*. <https://doi.org/10.17310/ntj.2020.4.14>.
- Clausing, K., Kleinbard, E. and Matheson, T. (2016). *U.S. Corporate Income Tax Reform and Its Spillovers*. IMF Working Paper 16. Washington DC, USA: International Monetary Fund.
- Clausing, K. 2020b. Five Lessons on Profit Shifting from the US Country by Country Data. *Tax Notes International and Tax Notes Federal*.
- Clifford, S. 2019. Taxing multinationals beyond borders: Financial and locational responses to CFC rules. *Journal of Public Economics*. <https://doi.org/10.1016/j.jpubeco.2019.01.010>.
- Cobham, A. and P. Janský. 2019. Measuring Misalignment: The Location of US Multinationals' Economic Activity versus the Location of Their Profits. *Development Policy Review*.
- Coffey, S. 2021. *The Changing Nature of Outbound Royalties from Ireland and Their Impact on the Taxation of the Profits of US Multinationals*.
- Dowd, T., P. Landefeld and A. Moore. 2017. Profit shifting of U.S. multinationals. *Journal of Public Economics*. <https://doi.org/10.1016/j.jpubeco.2017.02.005>.
- Dyreg, S., R. Hills, and K. Markle. 2022. Tax Deficits and the Income Shifting of US Multinationals. Available at SSRN.
- Garcia-Bernardo, J. and P. Janský. 2024. Profit shifting of multinational corporations world-wide. *World Development*. <https://doi.org/10.1016/j.worlddev.2023.106527>.
- Garcia-Bernardo, J., P. Janský and T. Tørsløv. 2021. Multinational corporations and tax havens: Evidence from country-by-country reporting. *International Tax and Public Finance*. <https://doi.org/10.1007/s10797-020-09639-w>.
- Garcia-Bernardo, J., Janský, P. and Zucman, G. (2025). *Replication package for "Did the Tax Cuts and Jobs Act Reduce Profit Shifting by US Multinational Companies?"* Zenodo.
- Guvenen, F., Mataloni Raymond J, J., Rassier, D. G. and Ruhl, K. J. (2022). "Offshore Profit Shifting and Aggregate Measurement: Balance of Payments, Foreign Investment, Productivity, and the Labor Share." *American Economic Review*.
- Hanlon, M., J.L. Hoopes, and J. Slemrod. 2019. Tax Reform Made Me Do It! *Tax Policy and the Economy*, 33.
- Hines, J.R. and E.M. Rice. 1994. Fiscal paradise: Foreign tax havens and American business. *Quarterly Journal of Economics*. <https://doi.org/10.2307/2118431>.



- Horst, T. and A. Curatolo. 2020. Assessing the Double Count of Pretax Profit in the IRS Summary of CbC Data for Fiscal 2017. *Tax Notes International* 98 (4).
- Laffitte, S. and F. Toubal. 2021. Multinationals' Sales and Profit Shifting in Tax Havens. *American Economic Journal: Economic Policy* (forthcoming).
- Liu, L., T. Schmidt-Eisenlohr and D. Guo. 2020. International transfer pricing and tax avoidance: Evidence from linked trade-tax statistics in the United Kingdom. *Review of Economics and Statistics*. <https://doi.org/10.1162/rest>.
- Liu, L. 2020. Where Does Multinational Investment Go with Territorial Taxation? Evidence from the United Kingdom. *American Economic Journal: Economic Policy*, 1 (12).
- OECD. 2021. *Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy*. OECD.
- Reurink, A. and J. Garcia-Bernardo. 2020. Competing for Capitals: The Great Fragmentation of the Firm and Varieties of FDI Attraction Profiles in the European Union. *Review of International Political Economy*.
- Saez, E. and G. Zucman. 2019. *The Triumph of Injustice: How The Rich Dodge Taxes and How to Make Them Pay*. New York, IL: W.W. Norton.
- Slemrod, J. 2018. Is this tax reform, or just confusion? *Journal of Economic Perspectives*. <https://doi.org/10.1257/jep.32.4.73>.
- Sullivan, M. 2020. TCJA Not Enough to Shift Big Pharma Profits to U.S. *Tax Notes Federal* 2020 (169).
- Tørsløv, T., L. Wier and G. Zucman 2022. The Missing Profits of Nations. *Review of Economic Studies* (forthcoming).
- Wright, T. and G. Zucman. 2018. The Exorbitant Tax Privilege. *National Bureau of Economic Research Working Paper* 24983.
- Zucman, G. 2014. Taxing across borders: Tracking personal wealth and corporate profits. *Journal of Economic Perspectives*. <https://doi.org/10.1257/jep.28.4.121>.

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