// NO.26-007 | 02/2026

DISCUSSION PAPER

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Transfer Price Documentation Rules and Multinational Firm Behavior – Evidence from France

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Abstract

In recent years, a growing number of countries have enacted tax rules that require multinational enterprises (MNEs) to document their intra-firm trade prices and show that they are set as in third-party trade. The objective of these rules is to limit opportunities for strategic trade mis-pricing and profit shifting to lower-tax affiliates. In this paper, we study the regulations' fiscal and real effects. Testing ground is the introduction of transfer pricing (TP) documentation rules in France in 2010. Drawing on rich firm-level data, we show that affected MNEs reduced their outward profit shifting from France, while simultaneously lowering real investments in the country. Outside of France, treated MNEs decreased their real economic activity at low-tax (but not at high-tax) group locations.

JEL codes: F21, F23, H25, H26, H87
Keywords: multinational firm, corporate taxation, profit shifting

*Access to some confidential data, on which this work is based, was made possible within a secure environment offered by CASD – Centre d'accès sécurisé aux données, the French Centre for Secure Access to Data (Ref. 10.34724/CASD). Nadine Riedel and Kristina Strohmaier gratefully acknowledge funding from the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) - grant no. RI 2491/5-1 as part of research unit FOR 2738. Katharina Schmidt, Johannes Voget and Sophia Wickel gratefully acknowledge funding from the DFG - Project-ID 403041268 - TRR 266. We thank Arjan Lejour, Dominika Langenmayr, Johannes Becker and participants of the 2023 EU Tax Observatory Workshop in Economics, the 2023 IIPF Conference and two RSIT conferences for helpful comments and suggestions. All errors remain our own.

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1 Introduction

Intra-firm trade prices determine how profit is allocated across affiliates of multinational enterprises (MNEs). While international tax rules mandate that these prices adhere to the arm's length principle (i.e. must be set as in third-party trade), growing evidence suggests that MNEs distort intra-firm trade prices to shift profits to low-tax entities (see, e.g., Clausing, 2003; Davies et al., 2018; Liu et al., 2020). Mis-pricing of intra-firm trade is perceived to contribute substantially to aggregate profit shifting (see, e.g., Heckemeyer and Overesch, 2017), in part reflecting that a significant fraction of international trade takes place within multinational groups (e.g., Antràs, 2003; Ruhl, 2015).

In recent decades, countries around the world have implemented so-called transfer pricing (TP) documentation requirements as a means to curb profit shifting practices. The regulations require MNEs to contemporaneously document their intra-firm trade prices and show that they are set in line with arm's length provisions.

Despite their growing prevalence, the effects of TP documentation rules on MNE behavior remain largely unclear. In this paper, we investigate their effect on firms' tax reporting and real activity. TP documentation requirements enhance transparency in intra-firm price setting and empower tax authorities to check on firms' compliance with the arm's length principle. If rigorously enforced, the rules are expected to limit firms' scope for tax-strategic trade mis-pricing.[1] On the downside, there may be repercussions on real economic behavior: The rules come with compliance burdens (e.g., Durst, 2010; Gauß et al., 2024) and, if they effectively constrain profit shifting to low-tax countries, firms' effective tax costs increase. This lowers the after-tax return to investments and may reduce firms' real economic activity.[2] TP documentation rules might even have effects beyond the policy-setting country. If investments at different multinational group locations are substitutes (complements), reform-induced investment decreases in the policy-setting

[1] An important caveat, however, is that many goods and services traded within MNEs are inherently firm-specific in nature, implying that arm's length prices are hard to come by and need to be inferred indirectly from contexts with imperfect comparability. Discretion in pricing choices can thus persist, offering opportunities for profit shifting, also in the presence of TP documentation requirements.

[2] The structure of firms' response hinges on the nature of the cost shock. Compliance costs are largely fixed in nature: there are fixed costs to prepare a TP report and additional costs that accrue per product item traded (while the TP documentation costs are plausibly largely invariant in trading volumes of a given product). These compliance costs may trigger adjustments at the extensive margin—firms may stop to be active in certain countries—or at the intensive margin—firms may lower the number of products traded internally and adjust their real economic activity at affected group locations (including fixed assets).

country may be accompanied by higher (lower) investments at foreign group entities. With TP documentation rules in place, MNEs may also have less incentives to maintain real economic activities at low-tax locations, which enable and facilitate shifting.

These considerations are brought to the data. Empirical testing ground is the introduction of legal TP documentation rules in France in 2010. The analysis relies on two unique data sources: tax administrative data for French firms, and accounting data plus ownership information (from the Orbis database) on multinational firms worldwide, with excellent coverage in France and other countries. We use this data to study MNEs' response to the new TP documentation rules in France and at foreign multinational group locations. There are two firm outcomes of interest: MNEs' tax avoidance behavior and their real economic activity. Previous work has identified tax avoidance behavior based on indirect identification strategies, showing that profit reporting within MNEs negatively correlates with affiliates' host country corporate tax rates (see, e.g., Tørsløv et al., 2023*b* for a review). Recent studies have, moreover, documented that a significant fraction of MNEs report (close-to-)zero taxable income and corporate tax payments in high-tax economies (see, e.g., Bilicka, 2019; Johannesen et al., 2020). We follow the latter strand of papers and use this "close-to-zero-tax reporting" as our measure for tax avoidance, on top of standard gross effective tax rate measures. Firms' real economic activity is captured by unconsolidated fixed assets. We abstract from potential complementary real responses in other input factors like employment (e.g., Curtis et al., 2022), which are not well covered in accounting data.

Methodologically, we estimate dynamic difference-in-differences (DiD) models that quantify how firms within the scope of the French TP documentation rules alter their tax reporting and real activity relative to untreated firms. Our identification strategy exploits that only firms meeting a specific size threshold——either based on their own size or the size of the largest affiliate within their MNE group——are subject to the TP documentation rule. We compare the evolution of firm outcomes by treated and untreated businesses in France. Confounding shocks at the host country level are absorbed—distinguishing our identification strategy from most prior studies on corporate taxes and firm behavior, which compare treated firms to untreated businesses in *foreign* countries (e.g., Dharmapala and Riedel, 2013; Dowd et al., 2017; Heckemeyer and Overesch, 2017, and the literature discussed therein). While country-specific trends are absorbed in our analysis, there may

be other differences across treated and control firms that may act as a confounder. Most obviously, by legal design, treatment status in our setting is a function of firm size.

We alleviate this concern twofold. First, our dynamic DiD estimates show that firm outcomes of treated and control businesses follow similar trajectories prior to the reform; this corroborates the common trend assumption of our DiD design. Second, we model differences in firms' baseline characteristics—their size, industry affiliation and parent country—and allow outcome trajectories to vary in these characteristics. This also allows us to absorb related shocks that occur at the time of treatment and hence do not show up in pre-trend differences across treated and control firms. To granularly absorb differences in outcome trends across firms of different size, we augment the data by multinational businesses from countries other than France using the Orbis dataset (as within France, treatment assignment correlates with firm size). Analogous to a triple-differences design, we model differences in outcome trends across firm-size-classes in third countries to filter out size-related outcome trend differences across treated and control firms in France.

Estimates from these specifications indicate that the introduction of TP documentation requirements significantly reduced corporate tax avoidance among treated firms in France: Firms' propensity for close-to-zero-tax reporting dropped significantly after the reform. Our results point to a decline by around 5.6% on average. Simultaneously, treated firms significantly decreased their fixed asset investments in France relative to the control group after the TP reform. Our preferred specification suggests a drop by around 3.07% on average. These findings are robust to a battery of robustness test, including restrictions of the bandwidth and placebo tests. We, moreover, present evidence suggesting that our estimates are not confounded by other policy changes during our sample frame. Additional tests, furthermore and intuitively, show that effects tend to be centered around profit shifting firms with an ownership connection to a tax haven country.

We further assess whether the introduction of TP documentation rules exerted effects beyond France. Rich ownership information on multinational group affiliates worldwide allows us to identify firms that are treated by the French TP documentation rules with their group affiliates in France and in other countries. By focusing on affiliates outside France, this part of the analysis compares the outcomes of firms that belong to treated and untreated MNEs. Our results reject spillover effects of TP documentation rules on foreign high-tax affiliates of treated MNEs. Their real activity remains largely unaffected.

We, however, show that firm investment at low-tax affiliates of treated MNEs declines pronouncedly. This is consistent with firms scaling down 'profit-shifting-related' real activity. We corroborate this finding by documenting a drop in firms' quality-adjusted number of patent applications—which have been shown to serve as profit shifting enablers by prior research (e.g., Karkinsky and Riedel, 2012; Griffith et al., 2014)—at low-tax affiliates after the reform.

The findings have important policy implications. Most importantly, they illustrate that policymakers face a trade-off when tightening TP regulations: while there is indication that the rules show some effectiveness in containing strategic mis-pricing and profit shifting to low-tax countries, they simultaneously come with negative real economic repercussions.

In the academic domain, our paper contributes to a flourishing literature on multinational profit shifting. A growing body of empirical evidence documents that MNEs relocate profits from high-tax to lower-tax countries (see, e.g., Riedel, 2018; Bilicka, 2019; Beer et al., 2020; Tørsløv et al., 2023*b* for recent surveys). Evidence suggests that one of the most prominent profit shifting channels are distortions of prices for goods and services traded within MNEs (see, e.g., Clausing, 2003; Heckemeyer and Overesch, 2017; Davies et al., 2018; Liu et al., 2020).[3] The fiscal and economic consequences of profit shifting activities are suggested to be significant: profit shifting strips tax revenues from high-tax countries (Tørsløv et al., 2023*b*), can distort product market outcomes (Gauß et al., 2024), foster industry concentration (Martin et al., 2025) and international tax competition (Keen and Konrad, 2013).

Our analysis also closely connects to recent work that assesses the effectiveness of anti-profit shifting policies in constraining international tax avoidance (e.g., Buettner et al., 2012; Egger and Wamser, 2015; Clifford, 2019 and Bilicka et al., 2022)[4] and, within that literature, most closely to a small set of papers that focus on measures against strategic mis-pricing of intra-firm trade. Beer and Loeprick (2015) offer early cross-sectional evidence on the impact of general TP rules on multinational profit reporting. In recent work,

[3]Other prominent tax avoidance strategies comprise the strategic location of functions and assets at low-tax affiliates: immaterial property (e.g., Karkinsky and Riedel, 2012; Griffith et al., 2014); headquarters functions (e.g., Voget, 2011); risk (e.g., Becker et al., 2020); sales (e.g., Laffitte and Toubal, 2022); financial services and lending (e.g., Goldbach et al., 2021).

[4]Buettner et al. (2012) and Bilicka et al. (2022) show that limits on the deduction of interest costs from the corporate tax base reduce debt shifting within firms; Egger and Wamser (2015) and Clifford (2019) document that controlled foreign company provisions restrict income shifting.

Wier (2020) and Bustos et al. (2023) add evidence from low-income country contexts. We also relate to papers on the real effects of anti-profit shifting rules (see, e.g., Suárez Serrato, 2019; Merlo and Wamser, 2020; de Mooij and Liu, 2021 and Bilicka et al., 2022), most closely to de Mooij and Liu (2020) who assess the impact of general TP provisions on firms' real investments in a cross-country context.[5] We complement existing work by shedding light on the workings of TP rules in a leading economy. We are also the first to study the effect of TP *documentation requirements*—not general TP rules as in Beer and Loeprick (2015) and de Mooij and Liu (2020)—which are instruments to *enforce* the arm's length principle enacted by general TP provisions (and are less prevalent worldwide than general TP rules). Our empirical testing ground allows for a transparent empirical strategy to identify the causal effect of interest. Moreover, we are the first to shed light on underlying mechanisms that shape firms' behavioral responses to TP documentation provisions and to provide evidence for cross-border effects.[6]

The rest of the paper is structured as follows: Section 2 sketches theoretical considerations. In Section 3, we discuss the institutional background of the TP documentation reform in France. Section 4 describes the dataset and summary statistics. Sections 5 and 6 present the estimation strategy and results. Section 7 concludes.

2 Theoretical Considerations

To motivate our empirical analysis, we develop a simple theoretical model, which is presented in Appendix A. The model illustrates that MNEs have incentives to relocate profits from high-tax to low-tax locations by means of strategic mis-pricing of intra-firm input trade. If the costs to conceal such mis-pricing are low, firms shift all of their profits out of high-tax countries – resulting in bunching at zero-income and zero-tax reporting, a phenomenon that is empirically well documented in the literature (see, e.g., Bilicka,

[5]Merlo and Wamser (2020), de Mooij and Liu (2021) and Bilicka et al. (2022) show that constraints on debt shifting exert negative investment responses by firms; Suárez Serrato (2019) documents a link between tax haven access and firms' real economic behavior.

[6]In the latter domain, we contribute to a growing literature that studies how shocks transmit within MNEs, see, e.g., Becker and Riedel (2012), Kleinert et al. (2015), Giroud and Mueller (2019) and Bilicka et al. (2022). The literature has largely been silent on cross-border effects of anti-profit shifting rules on MNEs' behavior. An exception is Bilicka et al. (2022) who show that a debt-cap rule introduced by the UK enhanced debt-holdings and investments at foreign group affiliates (reflecting incentives provided in the debt cap law to lower (increase) debt holdings and real activity in the UK (abroad)). Our findings contrast this evidence: TP documentation provisions are found to lower firms' real economic activity at foreign low-tax locations, while exerting no statistically significant investment effect at other higher-tax locations.

2019).[7]

When governments introduce or tighten TP documentation requirements, firms incur two types of costs: First, there are compliance costs associated with contemporaneously documenting that a good's transfer price aligns with the arm's length principle – i.e. that the price is set as in third-party trade. These costs accrue per traded input variety and irrespective of trade mis-pricing, that is also in trade between high-tax affiliates.[8] On top of that, tighter TP documentation rules raise firms' costs to conceal tax-strategic mis-pricing of intra-firm input trade between high-tax and low-tax affiliates.

The latter costs imply that firms are predicted to engage in less tax-motivated trade mis-pricing when TP documentation rules are tightened, resulting in higher tax payments at high-tax locations and fewer incidents of zero-tax reporting. Increased TP documentation costs and tighter constraints on firms' ability to shift profits increase the effective cost of sourcing intermediate inputs from abroad, incentivizing MNEs to scale back on their use. This, in turn, impacts corporate real activity at the MNEs' group locations. TP documentation reduces firm investment at both, the input- and output-producing locations: Investments and production at the input location mechanically drop when firms scale back on input use. If inputs and firm investments at the output-producing affiliate are complements, the same holds true for investments at the output-producing units. MNEs may thus reduce their real economic activity in the policy-changing country (i.e. the country, which implements TP documentation rules) as well as at foreign group locations.

Intuitively, adjustments at foreign affiliates may be particularly large in low-tax countries: If MNEs engage in trade with and operations at low-tax locations primarily with the aim to transfer income there[9] and if TP documentation requirements effectively constrain these opportunities, MNEs may downscale these activities after TP documentation is introduced.

In the longer-run, MNEs might find it attractive to relocate whole production units in order to circumvent TP documentation requirements and ensure low taxation. Broadly

[7]The bunching emerges as firms have no incentives to reduce taxable income below zero, given that this does not result in additional immediate reductions in tax payments.

[8]Tørsløv et al. (2023*a*), e.g., document that the majority of transfer pricing audits targets trade between high-tax affiliates within multinational groups.

[9]Evidence, for example, suggests that MNEs operate low-tax affiliates, which fund and develop *firm-specific inputs* like patents or licenses, primarily for tax-saving purposes. The firm-specific input is sold to production affiliates at high-tax locations and allows for profit stripping through tax-strategic overpricing of license fees (see, e.g., Beer and Loeprick, 2015).

speaking, firms may try to avoid intra-firm cross-border trade and bundle production in fewer countries; and they might have incentives to locate real activity at low-tax locations as low profit taxation can, to a lesser extent, be achieved through tax-strategic profit relocation after TP documentation requirements are tightened.

See the model in Appendix A for details and further discussion. In the following, we will empirically test for the effect of TP documentation on firm behavior drawing on the introduction of contemporaneous TP documentation requirements in France. Following our theoretical considerations, we assess the effect of the rules on treated MNEs' tax reporting and real activity in France. Additional analyses shed light on spillover effects on firm activity at other (high-tax and low-tax) locations within the same multinational group.

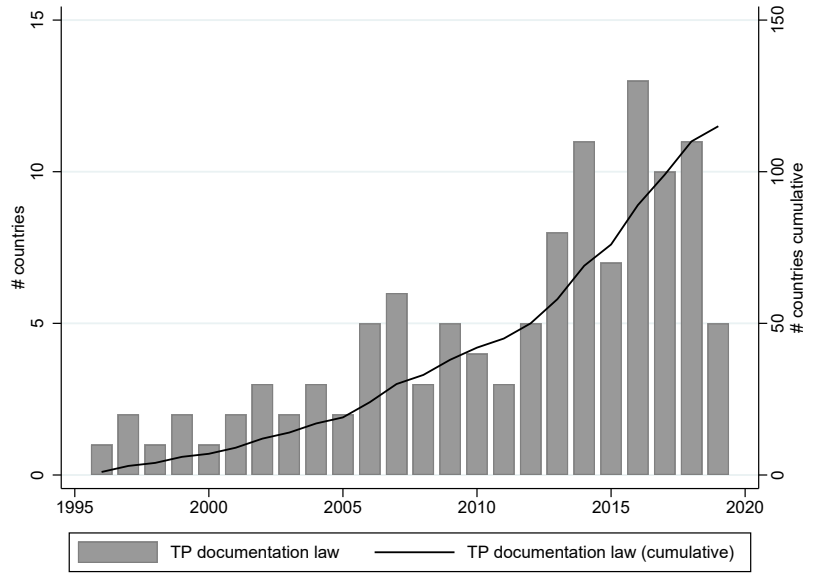
3 Institutional Background

France has had general TP rules in place since the first half of the 20th century. While these provisions required French firms to set intra-firm trade prices at arm's length, enforcement was incomplete, as tax authorities could only request information on companies' TP choices in the course of audits when there was specific indication for misconduct and non-compliance by the firm. Evidence from the late 1990s suggests that French MNEs engaged in significant mis-pricing of intra-firm trade to shift profits to tax haven economies (Davies et al., 2018).

In 2010, France introduced TP documentation requirements to tighten up the enforcement of TP rules. The regulations are specified in Article L13 AA of the French Tax Procedure Code (LPF). From 2010 onwards, MNEs subject to the regulation have been required to contemporaneously document their intra-firm transfer prices, show that these prices are set in line with arm's length standards, and provide this documentation to tax authorities upon request. The documentation can be requested by the authorities at any time, without specifying a reason or indication for irregularities and mis-pricing behavior.

Firms in the scope of the regulation are required to prepare contemporaneous TP documentation, comprising a local file and a master file (see French Tax Procedure Code Article L13 AA LPF). Further guidance on the preparation of TP documentation is stated in the French Administrative Guidelines (Bulletin Officiel des Finances Publiques - Impôts

Figure 1: Introduction of TP Documentation Requirements in Law, 1996 to 2019



Source: Research School of International Taxation's (RSIT) International Tax Institutions (ITI) database (Wamser et al., 2025).
Notes: The bars indicate the number of countries per year that newly introduced TP documentation rules in their national tax law. The solid line indicates the cumulative number of countries with TP documentation rules in place per year.

(BOFiP), specifically the BOI-BIC-BASE-80-10 guidelines).

The master file must include a description of the group's business activities and changes during the audit year, legal and operational structures, general TP policy, intangible assets held with a link to the considered entity, intercompany financing structures, description of functions performed and risks borne in relation to the considered entity. The local file includes information on the specific entity, including annual balance sheets, as well as detailed documentation on all transactions involving the French entity, including recurring but also any exceptional transactions. In addition, the documentation must include a full explanation of the TP methods and comparable data used to argue that the transfer prices are at arm's length. It must also list any cost-sharing or advanced pricing agreements if applicable.[10]

Firms were required to contemporaneously document their intra-firm transfer prices if they fulfilled one of the following criteria:

- unconsolidated turnover or total assets above or equal to EUR 400 million; or

[10]The length of TP documentation files vary depending on the firm, the industry, and the number of TP transactions involved. TP costs are plausibly largely fixed in nature per product variety traded. Average compliance costs thus become smaller the higher the trading volume.

- a majority-owned subsidiary (in France or abroad) with turnover or total assets above or equal to EUR 400 million; or
- a parent company (located in France or abroad) with turnover or total assets above or equal to EUR 400 million.

As described above, in-scope firms need to provide basic information and document the universe of intra-firm trade prices for all intra-firm imports to and exports from France and show that these prices are set as in third-party trade.[11] The introduction of the TP documentation requirements was perceived as a significant tightening of French TP provisions. When the law was passed, Le Monde, a leading French newspaper, told its readers to prepare for the "tougher" TP laws and higher scrutiny (Michel, 2010). In the years after the reform, the risk of a tax audit, TP scrutiny and challenge of the TP methodology by the French tax authorities was also particularly high, according to practitioners (see Ernst and Young, 2012).[12]

The French reform was part of a wider trend of countries introducing transfer pricing documentation requirements into their national laws. As illustrated in Figure 1, this process began with one to three developed countries per year in the 1990s and early 2000s, before gaining broader momentum. Since 2012, more than five countries have introduced TP documentation requirements each year (for an extensive discussion on the evolution of transfer pricing regulation see Laudage Teles et al., 2024). The French reform is representative, as its features follow the broad direction of the OECD's documentation framework. The Master and Local File concept was first suggested by the Council of the European Union in its Code of Conduct on Transfer Pricing Documentation in 2006 and later formalised under Base Erosion and Profit Shifting (BEPS) Action 13. In two respects, the French rules may be more prescriptive than average TP regulations (Laudage Teles et al., 2024). First, as mentioned above, France set explicit size thresholds and filing requirements that determine which entities must prepare the documentation. Second, France added concrete penalty provisions directly linked to documentation defects rather than tax underpayment alone, increasing the compliance stakes for firms (Deloitte, 2010).

[11] If the latter information is shared across tax authorities (and this information is new to the foreign tax authority), it may help to constrain profit shifting from foreign high-tax nations, other than France.

[12] On average, MNEs in France are audited every 3-4 years (PwC, 2013).

4 Data

Our empirical analysis draws on two data sources: Unconsolidated balance sheet information and ownership data from Bureau van Dijk's Orbis database and the universe of corporate tax returns submitted by corporations in France.

The two datasets serve as complements in our empirical work. The Orbis data comprises high-quality accounting information for firms in France and worldwide. It thus offers unique opportunities for cross-country analyses. In our study, we will draw on Orbis information on firms' unconsolidated fixed assets and accounting tax liability, which allows us to track corporate real investment activity and tax payments over time. Coverage rates in Orbis are high (often comparable to administrative datasets), reflecting that a relevant fraction of the data is collected from administrative sources (Kalemli-Özcan et al., 2024). Comparing Bureau van Dijk's data for France to official statistics for the manufacturing sector, Kalemli-Özcan et al. (2024) e.g. report sales coverage rates above 80%.[13] Coverage rates generally hinge on countries' reporting requirements— missing data commonly relates to smaller and unincorporated entities (Beuselinck et al., 2023).[14] Bureau van Dijk spends considerable efforts to collect comprehensive information on large businesses. The data is hence widely perceived to be well-suited to study the behavior of MNEs, which belong to the leading businesses in many countries (Johansson et al., 2017).

Complementary to Orbis, we draw on the population of corporate tax returns in France (filed under the normal tax regime BIC-RN, provided by the French Public Finances Directorate General DGFiP). The key advantage of this data is that it includes information on firms' current cash tax payments as opposed to firms' *accounting* tax liability in Orbis. Drawing on cash taxes hedges us against findings affected by book-tax-differences, i.e. differences in cash and accounting tax liabilities, which may arise because financial reporting and tax law serve different objectives (decision usefulness vs. revenue collection).[15]

[13] We also confirm their finding using our data at hand, see Table B8 in the Appendix.

[14] Note that the coverage of SMEs in our sample does not change significantly over the sample period. Tax haven coverage is a well-known weakness of the Orbis data—in particular financial information on tax haven firms is often lacking (Dutt et al., 2023), while firm presence in tax havens is observed at higher rates.

[15] An important source of such book-tax-differences is deferred taxation: if firms, e.g., benefit from accelerated tax depreciation, this lowers their present cash-tax liability (at the expense of higher tax liabilities in the future), but is not reflected in the firms' accounting tax liability as accounting rules require firms to record a deferred tax liability when tax depreciation exceeds book depreciation (reflecting that tax saved today will reverse in future periods).

In both datasets, our sample comprises multinational entities in the period 2007-2015, which are identified from ownership information in the Orbis database.[16] Specifically, we define firms as MNEs if their Global Ultimate Owner (GUO) has at least one majority-owned foreign affiliate. In case the GUO is missing in the data, we replace the missing GUO by the highest controlling shareholder. The analysis thereby accounts for indirect ownership structures.[17] Table 1 presents summary statistics of the sampled firms in the French administrative data (Panel A) and in Orbis (Panel B).[18] In total, we identify 99,214 MNEs in our Orbis data, which comprise 361,206 distinct firms (including both parents and subsidiary firms) in 183 home and 97 host countries (see Tables B6 and B7 in Appendix B); 39,393 firms are located in France. Our administrative dataset covers 30,824 firms or firm groups for tax purposes in France, owned by 9,991 GUOs. The discrepancy between the number of firms in Orbis and in the French tax administrative data arises because French parent companies can elect fiscal group taxation, under which the parent and its French subsidiaries that are at least 95% owned by the parent are treated as a single tax unit and taxed on consolidated profits and losses. The parent then files and pays the corporate income tax (CIT) for the 'tax group'. Our administrative data contains information on 28,659 standalone firms and 2,165 tax groups. The latter units comprise several firms, which are recorded as separate entities in Orbis' accounting data. More information on the preparation of the two datasets is included in Appendix B.

In the analysis to come, aggressive multinational profit shifting will be approximated by firms' tax payments. While most of the prior empirical literature indirectly infers profit shifting from correlations of intra-group profit reporting with host-country corporate tax rates (see, e.g., Tørsløv et al., 2023*b* and the literature cited therein), recent studies have noted that many MNEs report taxable income and tax payments of (close to) zero in high-tax economies—consistent with large parts of their profits being shifted out to lower-tax entities (e.g., Bilicka, 2019; Johannesen et al., 2020). In the following, we will follow this literature and proxy for multinational profit shifting by a dummy variable indicating that firms report corporate tax payments over assets close to zero. In additional checks, we

[16]The ownership data from Orbis is static and refers to the download year 2018.

[17]To identify the highest controlling shareholder, we account for up to 10 levels of immediate direct shareholder links (of shareholders owning at least 50% of ownership shares).

[18]After defining treatment and control group in the following Section 5.1, we also present summary statistics for these two groups in Table B9 in the Appendix.

Table 1: Summary Statistics

	Observations	Mean	Std. Dev.	Median
Panel A: Analysis of Direct Effects - French Admin Data				
Tax payments/assets	162436	0.013	0.029	0.001
Zero-tax indicator	162436	0.456	0.498	0.000
Asinh(tax payments)	164246	2.448	3.821	2.081
ETR	135539	0.226	0.245	0.118
GTR	141022	0.241	0.237	0.197
Long-run GTR	115626	0.288	0.236	0.309
Min. group tax rate	162436	0.152	0.120	0.165
Tax haven in group	162436	0.661	0.473	1.000
Unconsolidated turnover	162436	93629.014	184726.754	5382.662
Unconsolidated total assets	162435	286825.382	5454891.676	6950.496
Group max turnover/assets	162436	7790727.138	30734735.941	158240.266
Panel B: Analysis of Direct Effects - Orbis Data				
Tax payments/assets	2184806	0.017	0.034	0.006
Zero-tax indicator	2184806	0.288	0.453	0.000
Ln(fixed assets)	2183799	7.496	3.164	7.869
Min. group tax rate	2184806	0.131	0.105	0.150
Tax haven in group	2184806	0.600	0.490	1.000
Unconsolidated turnover	2184806	83739.203	1044103.836	6138.129
Unconsolidated total assets	2184806	162465.355	3058975.876	8248.826
Group max turnover/assets	2184806	6737850.339	33742506.181	121865.090

Sources: French Administrative Data. Bureau van Dijk's Orbis database.
Notes: The zero-tax indicator equals 1 if tax payments divided by total assets range between -0.002 and 0.002 in the considered year, otherwise zero. The ETR is the unconsolidated effective tax rate measured as tax payments over accounting profit. We replace positive values with missing if both numerator and denominator are negative. The GTR provides the gross tax rate, which is the firms' tax rate prior to deductions and tax credits (Bach et al., 2019). The long-run GTR is a three-year-average of the gross tax rate and is less sensitive to negative shocks to profitability (Dyreng et al., 2008). All tax rate measures use the accounting profits in the denominator and are restricted to values between 0 and 1. Asinh(tax payments) is an inverse hyperbolic sine transformation of tax payments to gain a quasi-logarithmic form in the presence of zero values. The minimum group tax rate gives the minimum statutory corporate income tax rate in the MNE per year. Tax haven in group is a dummy variable indicating whether MNEs have a tax-haven affiliate or not (based on the list by Dharmapala and Hines, 2009). Unconsolidated turnover and total assets are measured in thousand EUR. All financial and tax variables are winsorized at the first and 99th percentile.

will rely on firms' gross tax rate, defined as gross tax payments (i.e. tax payments before tax credits, see Bach et al., 2019) over firms' accounting profit.[19]

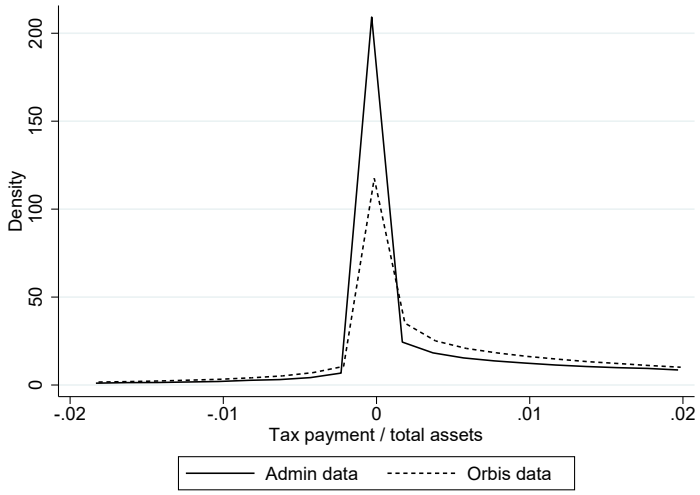
Figure 2 depicts the distribution of firms' corporate tax-over-asset ratio across our sample frame—featuring considerable mass on realizations close to zero. Eyeballing the distribution suggests that firm mass is elevated in the tax-over-asset range between -/+0.002. We hence define a dummy variable for (close-to-) zero tax reporting, which takes on the value 1 if realizations fall within that range. In the Orbis data, the propensity for close-to-zero-tax reporting is 29.2%; in the tax administrative data, the fraction is even higher, consistent with prior findings in Bilicka (2019).[20] In the empirical analysis, we show that our findings are robust to adjustments in this cutoff value. Furthermore, we present results using lagged or pre-reform averages of total assets instead of current total assets as the denominator of the tax-over-asset ratio, showing that our results remain robust to different normalizations.

Firms' real economic activity is measured by unconsolidated fixed assets. The average fixed assets—winsorized at the 1% level—of firms in our global data amount to USD 52.25 million (with log-transformed assets being reported in Table 1) and it is USD 47.34 million in the subsample of French firms.

[19] As laid out in more detail in Appendix A.3, we expect that constraints on mis-pricing raise the defined unconsolidated effective gross tax rate measure (despite the fact that such constraints move both, the numerator and the denominator of the effective tax measure). Furthermore note that relying on corporate tax payment outcomes rather than firms' income reporting offers the advantage that the corporate tax measure directly relates to the policy aim of the TP documentation reform: To increase tax payments of MNEs in France. A further advantage is that tax adjustments through TP audits are thus captured by the analysis. And while accounting profits may include dividend income and can therefore cause issues related to double reporting (see e.g. Blouin and Robinson, 2025), tax payments are (commonly) not subject to this caveat (the double counting issue might extend beyond dividends paid when the equity-accounting method is used to pseudo-consolidate subsidiary income in the parent's separate financial statement; in France, this method is allowed but seldomly used (Nobes, 2002).

[20] As discussed in Bilicka (2019) and further above: the difference between tax returns and financial accounts may root in book-tax differences. It may also reflect that MNEs use losses (and cross-border profit shifting) in conjunction with group relief to attain taxable profits that sum to a value close to zero within the set of their French affiliates that form a tax group. Note again in this context that tax groups are only observable in the tax return data.

Figure 2: Distribution of Tax Payments Over Total Assets



Notes: The figure depicts the distribution of tax payments over total assets (in a range between -0.02 and +0.02) in the Orbis dataset ('Orbis data') and in the French administrative data ('Admin data').

5 Direct Effect

In this section, we investigate how treated firms in France responded to the introduction of the French TP documentation requirements ("direct effect").

5.1 Methodology

Our empirical identification strategy exploits that not all MNEs in France were treated by the reform. In a difference-in-differences design, we compare outcome changes of treated and untreated entities in the population of firms which are part of an MNE. Specifically, we use our data at hand to identify firms that are treated by the French TP documentation provisions. Following our description of the institutional setting in Section 3, firms are classified as treated if they are located in France and if they—in any pre-reform year 2007 to 2009—either themselves feature turnover or total assets above EUR 400 million, or belong to MNEs with a parent company or majority-owned subsidiary above this size threshold. Conversely, our control group consists of all firms which are part of an MNE but are not subject to the French TP provisions because no majority-owned affiliate is above the size threshold in any pre-reform year or—when the sample is in a later step extended beyond France— they are not located in France. See Table B9 in the Appendix for summary statistics on sub-samples split by treatment status.

In the baseline analysis, the sample is restricted to entities in France. Formally, the

dynamic DiD model reads:

$$Y_{it} = \sum_{j=-3, j\neq -1}^{6} \beta_j b_{it}^j + X_{it}'\delta + \mu_i + \pi_{kt} + \phi_{ht} + \epsilon_{it}. \quad (1)$$

The dependent variable Y_{it} is the firm outcome (zero-tax reporting, tax payments, (gross) effective tax rate or fixed assets) of firm i in year t. The binary variables b_{it}^j indicate leads and lags of the treatment status. Hence, b_{it}^j takes the value 1 when firm i is part of the treatment group, and additionally $t = 2010+j$, i.e. the year of observation t has a distance of j years relative to 2010, the year in which the regulation was introduced. Otherwise, it takes the value 0. As our sample includes years between 2007 and 2015, we account for three years before and six years after treatment to assess the reform dynamics.[21] The first event lead $j = -1$ is excluded. Complementary, we estimate static DiD models, where the b^js are replaced by a dummy variable indicating treated firms after treatment.[22]

The β_js are the coefficients of interest and capture differences in outcome trends of treated firms relative to control firms across time. The model controls for time constant heterogeneity across entities by including a full set of firm fixed effects (μ_i). Firm i operates in industry k, and the group which the firm is part of is headquartered in country h. Correspondingly, industry and parent-country-specific trends are absorbed by a full set of 2-digit industry-year fixed effects and a full set of parent-country-year fixed effects (denoted by π_{kt} and ϕ_{ht}).[23] We follow prior literature and absorb time-varying heterogeneity

[21] We rely on data up to 2015 to avoid confounding effects related to the OECD's BEPS provisions that countries started enacting in 2016.

[22] The treatment definition could also suggest applying a Regression Discontinuity Design (RDD) using the 400 million EUR threshold. Note, however, that, due to the definition of treatment, the running variable is not necessarily the firm's own size, as treatment assignment is also based on group characteristics. Using the size of the largest group member as the running variable would be possible, but would not alleviate the concerns regarding own firm size being a major confounder. On top of that, sample size decreases dramatically the closer we restrict the sample around the threshold. Restricting the sample, for example, to firms that have a group affiliate with turnover or total assets between 350 and 450 million EUR, reduces our sample size by factor 34, reducing power and inflating standard errors. In our setting, the design, moreover, also has a "fuzzy" element in the sense that firms start being affected by the policy some time before the the largest group member actually crosses the 400 million EUR threshold. When determining their tax strategy, the French affiliates have to act on their expectation whether and when any of their affiliated companies surpasses the 400 million EUR threshold. Expectations and outcome will frequently differ. Hence, the policy can already affect firms even though their group structure does not trigger the more stringent documentation requirements yet. This would imply that the local average treatment effect captured by an RDD approach would be a lot smaller than the average treatment effect estimated by the DiD approach. The latter effect appears more relevant from a policy perspective, however (Fougère and Jacquemet, 2004). Finally, we are not confident that RDD assumptions in our setting hold. Prior work provides compelling evidence that firms adjust their size to stay below documentation thresholds in the international tax domain (see Hugger, 2025), leading to strategic sorting around the threshold, which invalidates regression discontinuity designs.

[23] The distribution of industries and parent countries across treated and control firms is depicted in

across firms by the control vector X_{it}. In specifications, where the dependent variable is firm's tax-related outcomes, X_{it} comprises control regressors capturing firms' profit shifting incentives (the minimum corporate tax rate in the multinational group), loss carryforwards (an indicator for a loss in the previous period) and firm sales; in specifications, where the dependent variable is the log of firms' fixed assets, we control for the minimum tax rate in the group, firm profitability (pre-tax profits over assets), and sales (following, e.g., de Mooij and Liu, 2020 and Schwab and Todtenhaupt, 2021).

For the estimates of the β_js to have a causal interpretation, we need to assume conditional mean independence: the regressors of interest, the b^js, must—conditional on the other regressors—be uncorrelated with the error term ϵ_{it}. In the parlance of the DiD design: the estimation strategy relies on the common trend assumption. As will be shown below, our dynamic DiD estimates indicate that trends in tax reporting and asset investment emerged in parallel between treated and control firms prior to treatment—which corroborates the common trend assumption. We, moreover, show that our estimates are robust to including the vector of control variables indicated above. This further dampens concerns that confounding shocks lead to biased estimates.

Complementarily, we run a second set of specifications, which—additionally to the above control factors—allows for differences in outcome trends across firms of different size. We consider this exercise to be of particular importance as treatment assignment is a function of firm size: if small and large firms experience different tax reporting and investment trends, this may confound the analysis. To address this concern, we expand the sample to also include firms outside of France using the Orbis dataset. The latter set of firms serves to model differences in outcome trends across firm-size-classes (analogous to a triple-DiD design). Note that, within France, treatment assignment correlates with firm size. While treatment assignment and size are not perfectly collinear (as treatment also depends on MNE characteristics), the power to identify size-specific outcome trends is larger in the extended sample. The modified estimation model reads

$$Y_{it} = \sum_{j=-3, j\neq -1}^{6} \gamma_j b_{it}^j + X_{it}'\kappa + \rho_i + \alpha_{kt} + \zeta_{ht} + \chi_{ct} + \xi_{mt} + \epsilon_{it}. \tag{2}$$

The variable and parameter definitions correspond to Equation (1). The extended sample

Figure B1 in the Appendix.

allows us to also account for firm i being located in country c and being element of firm size ventile m in terms of total assets. Thereby, χ_{ct} represents a full set of host-country-year fixed effects, which non-parametrically control for differences in outcome trends across host locations. ξ_{mt} is a full set of firm size-ventile-year fixed effects, which non-parametrically control for differences in outcome trends across firms of different size. Firms outside France that belong to treated MNEs with a French parent are excluded from the sample as they may have been affected themselves by the reform. We, furthermore, run specifications where we drop firms in foreign countries that experienced changes in corporate tax rules—i.e. corporate tax rate changes by > 1 percentage point or changes in anti-profit shifting rules in their respective home or host country. While such shocks are absorbed by χ_{ct} if homogeneous across firms, dropping the observations leaves estimates unbiased even if the tax policy changes exerted differential effects across large and small entities.

Statistical Inference

We, moreover, show that our results are robust to different assumptions on the clustering of errors. In the baseline analysis, we account for clustering at the firm level. In robustness checks, we also present estimates where we allow for clustering at the MNE group level or at the level of the 2-digit industry. In additional tests, we, furthermore, rely on randomization inference as originated in Fisher (1935), which does not hinge on any distributional assumptions about the structure of the errors.

5.2 Results

Pre-Analysis – Profit Shifting

Before embarking on the main empirical analysis, we trace multinational profit shifting in our data. For brevity, the analysis is relegated to Appendix C (cf. Table C1). Following the standard approach in the literature (see, e.g., Huizinga and Laeven, 2008), we show that MNEs' pre-tax profit reporting inversely correlates with the difference between firms' host country corporate tax rate and the weighted average tax rate at other group locations.[24]

[24]Note that weights are time-constant and reflect the number of affiliates in a country.

Intuitively, this tax sensitivity turns out to be particularly large for firms in MNEs with tax haven affiliates, consistent with the notion that haven-connected businesses engage in particularly aggressive tax avoidance behavior. In line with prior evidence (e.g., Davies et al., 2018; Bilicka, 2019; Wier and Erasmus, 2023; Bilicka et al., 2024; Karkinsky and Riedel, 2012; Liu et al., 2020), we furthermore show that the tax-elasticity of pre-tax profit reporting positively correlates with firm size and with firms' R&D intensity and patent holdings.[25]

Baseline Analysis – Tax Reporting

We then assess the impact of the French TP reform on firms' propensity to engage in aggressive profit shifting behavior as measured by close-to-zero-tax reporting. Table 2 presents estimates from static DiD models, Figure 3 depicts estimates of the dynamic DiD model in Equation (1). Standard errors allow for clustering at the firm level and control variables and fixed effects are modeled as given in Equation (1).

In Specifications (1) and (2), the data is restricted to firms in France. Specification (1) of Table 2 relies on the French administrative data and firms' cash tax liability to construct the zero-tax-indicator. Specification (2) relies on Orbis and the zero-tax-reporting dummy is constructed based on firms' accounting tax liability. In both models, the coefficient estimates turn out negative and statistically significant, suggesting that the introduction of the French TP documentation rules lowered aggressive profit shifting behavior as measured by zero-tax reporting. Specification (1) suggests a reform-induced drop in the propensity of zero-tax reporting by around 2.5 percentage points or 5.6% evaluated at the sample mean of treated firms (see the descriptive statistics in Table B9).[26]

In Specifications (3) and (4) of Table 2, we estimate the model in Equation (2) on the expanded Orbis sample, that is firms outside of France are included in the control group to model size-specific time trends. Following Equation (2), we now control for firm-size-ventile-year fixed effects to granularly absorb potential differences in the tax reporting

[25]If no directly comparable trade exists, MNEs often employ the Transactional Net Margin Method (TNMM) to establish a transfer price that falls within an acceptable arm's length range. The TNMM focuses on comparing net profit margins, such as cost margins or operating margins, rather than the actual prices of transactions (see OECD, 2010). As a result, the products or services of the comparable transactions can be less similar because net profit margins are less prone to transactional differences than prices. This may offer more scope for firms to tax-strategically distort transfer prices, consistent with our findings and the findings in Liu et al. (2020).

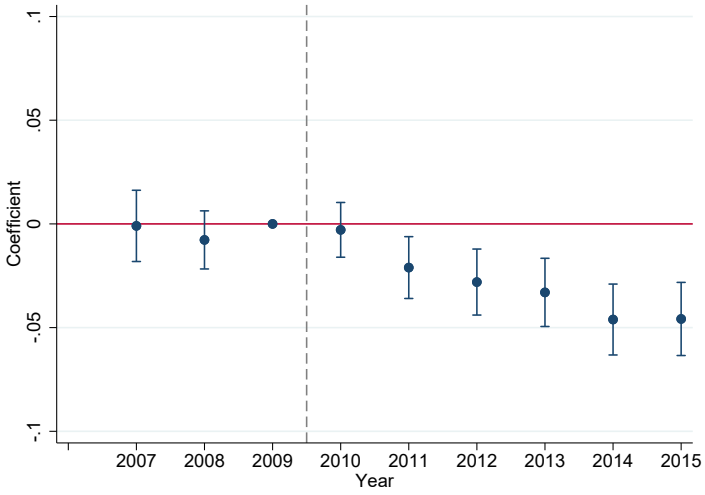
[26]We observe no significant difference in the survival rate of firms in the treatment and control group after the reform, so attrition should not affect the estimates.

Table 2: Static DiD Model - Reform Effect on Close-to-Zero-Tax Payments of Firms in France

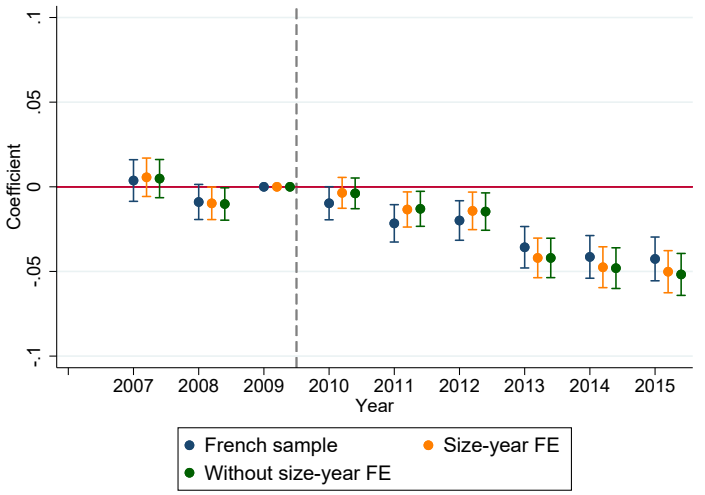
	(1)	(2)	(3)	(4)	(5)	(6)
Sample	France	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
Data	Admin	Orbis	Orbis	Orbis	Orbis	Orbis
treat x post	-0.0246***	-0.0260***	-0.0260***	-0.0264***	-0.0276***	-0.0206***
	(0.00551)	(0.00412)	(0.00386)	(0.00387)	(0.00390)	(0.00424)
Min. group tax rate	-0.0742	-0.234**	0.0261	0.0185	0.0568*	-0.208**
	(0.117)	(0.0929)	(0.0261)	(0.0273)	(0.0342)	(0.0925)
Ln(turnover)	-0.0368***	-0.0407***	-0.0469***	-0.0435***	-0.0383***	-0.0358***
	(0.00106)	(0.000824)	(0.000330)	(0.000393)	(0.000458)	(0.000956)
Loss indicator	0.129***	0.0945***	0.0575***	0.0666***	0.0641***	0.105***
	(0.00302)	(0.00243)	(0.000869)	(0.000959)	(0.00114)	(0.00253)
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	no	yes	yes	yes
N	162436	298572	2184806	1848024	1334927	292668

Notes: The table presents estimates of a static DiD regression model. The dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. Column (1) uses administrative tax return data for tax groups and standalone firms in France. Column (2) uses unconsolidated financial reports for French firms from the Orbis database. Columns (3)-(6) also use unconsolidated financial reports. Column (3) estimates the specification for the extended sample of firms in France and in other countries. Column (4) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (5) and (6) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 3: Dynamic DiD Model - Reform Effect on Close-to-Zero-Tax Payments of Firms in France



(a) Administrative Data France



(b) Orbis Data

Notes: The figures show dynamic DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets in France. The graphs depict point estimates and 95% confidence intervals of the β_j coefficients in Equation (1) and the γ_j coefficients in Equation (2) respectively. The specifications control for firm fixed effects, industry-year fixed effects, parent-country-year fixed effects, as well as the firm-level controls described in the main text. Panel (a) uses French administrative data (the corresponding static model estimates are reported in Column (1) of Table 2). Panel (b) uses Orbis data. The blue symbols depict the baseline estimates: the set of control firms is restricted to entities in France (the corresponding static model estimates are reported in Column (2) of Table 2). The orange and green symbols show the extended sample, where the control group also includes firms outside France. This allows us to include host-country-year fixed effects (green symbols, cf. Column (3) of Table 2 for the corresponding static model estimates). The orange symbols depict estimates from specifications, where we additionally control for size ventile-year fixed effects (the corresponding static model estimates are reported in Column (4) of Table 2). See Appendix C for further robustness checks.

across larger and smaller firms. This leaves the estimates qualitatively and quantitatively unaffected. In Specifications (5) and (6), we furthermore restrict the control group by dropping firms outside France whose host or home countries enacted a corporate tax reform either in the reform year 2010 (Specification (5)) or during the full sample frame (Specification (6)); the latter specifications hedge us against concerns that other reforms may act as confounders in the empirical exercise.[27] Effect size drops slightly in the latter model but the estimate of interest remains sizable and statistically significant.[28]

Figure 3 presents dynamic difference-in-differences estimates. Figure 3(a) draws on the French tax administrative data (modeling the zero-tax reporting dummy based on firms' cash tax liability); Figure 3(b) draws on Orbis (modeling the zero-tax reporting dummy based on firms' accounting tax liability). The Orbis-based analysis further distinguishes between models where the data is restricted to firms in France ('French sample') and models, which include firms worldwide (with and without size-year fixed effects in the set of regressors respectively). All estimates support the common trend assumption of our empirical design: Close-to-zero-tax reporting emerged in parallel between treated and control firms prior to treatment. After treatment, close-to-zero-tax reporting of treated firms dropped gradually over the post-treatment period.

Table 3 shows that similar findings emerge when we draw on continuous measures for firms' effective tax costs using French administrative data. In Specification (1), we reestimate our baseline model using firms' tax payments as dependent variable. To account for outliers and avoid losing zero or negative tax payments, we rely on an inverse hyperbolic sine transformation of the dependent variable. In Specification (2), the dependent variable is firms' effective tax rate (measured as cash tax payments over accounting profit), in Specification (3) firms' gross tax rate (defined as ETR prior to deductions and tax credits). The positive and statistically significant coefficient estimates confirm our prior

[27] In the anti-profit shifting domain, we drop firms if their host country – or their parent's home country – i) introduced TP legislation or documentation requirements in law or as guidelines; ii) introduced controlled foreign company (CFC) provisions; iii) introduced thin-capitalization or earnings stripping rules or enacted changes in the law on the thresholds for the debt-to-equity ratio or interest-earnings ratio above which interest deduction is denied. Additionally, we drop firms in foreign countries with a corporate tax rate change > 1 percentage point. The data is drawn from the International Tax Institutions (ITI) database provided by RSIT.

[28] We consider our effect to be sizable, in particular given that not all of firms' zero tax reporting is related to tax avoidance. Managers, for example, may have incentives to shift income across time to avoid reporting losses. Moreover, MNEs have several tax avoidance channels at their disposal. Quantitatively, the effect is arguably still somewhat smaller than some prior evidence on firm responses to anti-profit shifting laws. Bilicka et al. (2022), e.g., finds that the introduction of a Worldwide Debt Cap in the United Kingdom increased tax payments by domestic multinational firms by 21.3%.

findings that treated firms experienced an increase in their effective tax costs.[29] Specification (4) reruns the model in Column (3) using a 3-year average of the gross tax rate as dependent variable, acknowledging that this longer-run average is less sensitive to profit volatility and losses (Dyreng et al., 2008).[30] This again leaves the estimates qualitatively and quantitatively unaffected. Specifications (1) to (4) of Table 4, moreover, show that statistically significant effects tend to be centered around multinational firms with at least one tax haven affiliate, consistent with the notion that TP documentation rules impact the tax reporting of MNEs which do engage in international tax avoidance behavior.[31]

In Appendix C, we provide a battery of further robustness checks. Table C3 documents that changes in the definition of the dependent variable do not alter our findings: In line with intuition, choosing stricter (broader) bands for the definition of close-to-zero-tax reporting slightly increases (reduces) the size of the point estimates, in absolute terms—with all estimates remaining statistically significant at conventional significance levels. Figures C2(a) and C2(b) show that the dynamic DiD estimates in Figure 3 are robust to the sensitivity checks that we outlined above for the static DiD model (cf. Table 2). Figures C3(a) and C3(b), moreover, show that our findings are largely insensitive to dropping different sets of control variables and fixed effects from the estimation model (see Specifications (1) to (5)), and to reestimating the model in a balanced sample (see Specification (6)). In Appendix Table C4, we further normalize the tax payment variable with lagged or pre-reform mean total assets, which does not alter our results (see Specifications (1) and (2)). The findings are also robust to dropping larger and smaller firms from the data and to restricting the bandwidth of the estimation (see Tables C5

[29]Note that the DiD estimate turns our larger in specifications where the dependent variable is the firms' gross tax rate relative to its effective tax rate. This is consistent with taxpayers partly offsetting profit shifting related adjustments and the tax consequences they incur by relying more strongly on other tax avoidance channels related to cost deductions. This must not necessarily entail real adjustments. Prior evidence, e.g., suggests that firms have some scope to relabel activities as R&D for tax purposes, see Chen et al. (2021). The smaller response of the ETR relative to the gross tax rate may also relate to the 2008 expansion of R&D tax incentives in France (while expanding the generosity of R&D tax incentives for all firms, the design of the reform implied that larger entities might reap relatively larger benefits).

[30]The calculation follows Dyreng et al. (2008) and sums up the tax payments (numerator) as well as the pre-tax profits (denominator) over three years to balance out short-term variations of both variables accounting for the periods 2007-2009, 2010-2012, and 2013-2015. Our rather short sample frame, unfortunately, does not allow us to account for longer time spells (e.g. 10 years as in Dyreng et al., 2008).

[31] Table C2 in the Appendix, moreover, depicts results from models where we split the sample between large and small firms. The estimates show that sizable and statistically significant coefficient estimates only emerge in the subsample of large entities—consistent with the notion that profit shifting activity is particularly pronounced among this subgroup of firms—and constraints on shifting activities thus more strongly impact the tax reporting of this group of firms.

Table 3: Static DiD Model - Reform Effect on Effective Tax Burdens of Firms in France

	(1)	(2)	(3)	(4)
Outcome	Asinh	ETR	Gross tax rate	Long-run GTR
Data	Admin	Admin	Admin	Admin
treat x post	0.0877**	0.0100***	0.0161***	0.0156***
	(0.0431)	(0.00283)	(0.00301)	(0.00447)
Min. group tax rate	0.928	-0.0211	0.0739	0.0207
	(0.829)	(0.0583)	(0.0549)	(0.0608)
Ln(turnover)	0.317***	0.0167***	0.0216***	0.00873***
	(0.00813)	(0.000510)	(0.000506)	(0.000506)
Loss indicator	-0.814***	-0.0688***	-0.0620***	-0.0551***
	(0.0207)	(0.00142)	(0.00932)	(0.00102)
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes
N	164246	135539	141022	115626

Notes: The table presents estimates of a static DiD regression model. The regressor of main interest is $treat \times post$ indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. The dependent variables are measures of effective tax burdens (derived from French administrative data): Column (1) uses tax payments as dependent variable, transformed by the inverse hyperbolic sine function to gain a quasi-logarithmic form in the presence of zero values. Column (2) uses the effective tax rate as dependent variable, where positive values are replaced with missing if both numerator and denominator are negative. Column (3) uses the gross tax rate as dependent variable. The gross tax rate is grossed up to neutralize the potentially distorting influence of specific R&D and wage tax credits (Bach et al., 2019). Column (4) uses a 3-year average of the gross tax rate as dependent variable as the average is less sensitive to negative shocks to profitability (Dyreng et al., 2008). All tax rate measures use the accounting profits in the denominator and are restricted to values between 0 and 1. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Static DiD Model - Reform Effect on Firms in France - Heterogeneity

	Zero-tax		GTR		Ln(FIAS)	
	(1) Tax haven	(2) No haven	(3) Tax haven	(4) No haven	(5) Tax haven	(6) No haven
treat x post	-0.0216***	-0.0170	0.0167***	0.00624	-0.0454***	0.0239
	(0.0069)	(0.0155)	(0.00379)	(0.00827)	(0.0158)	(0.0332)
Controls	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes	yes	yes
Parent cty-year FE	no	no	no	no	yes	yes
Firm size-year FE	no	no	no	no	yes	yes
N	107350	54954	92400	48502	852285	583226

Notes: The table presents estimates of a static DiD regression model. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text. Columns (1) and (2) use the zero-tax indicator as dependent variable (from administrative tax return data for tax groups and standalone firms in France). Columns (3) and (4) use the gross tax rate as dependent variable (from administrative tax return data for tax groups and standalone firms in France). Columns (5) and (6) use the natural logarithm of fixed assets as dependent variable (from unconsolidated financial reports from the Orbis database). The different specifications limit the sample as follows: Columns (1), (3), (5): firms with a tax haven affiliate in the group, Columns (2), (4), (6): no tax haven affiliate in the group. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

and C6, and Figure C5(a) in the Appendix). Placebo checks yield insignificant estimates when we pull the event forward in time or move the treatment size-threshold to lower values than the actual treatment (see Table C8 in the Appendix). We also show that the statistical significance of our findings remains unchanged when we alter assumptions on the correlation structure of the errors (see below for details).

In the Appendix, we furthermore assess the sensitivity of our findings to potential misclassifications of treated and control firms. In the main analysis, firms are classified as treated or control based on observed characteristics in the pre-reform period. This status is kept constant throughout the post-reform period to avoid changes in the composition of treatment or control group affecting the results. There may thus be some degree of misclassification if firms exhibit characteristics in a post-reform year that would have placed them in the opposite group. This is quite rare in our data, however. Figure C6 in the Appendix illustrates how treatment status evolves over time when treatment is assigned on an annual basis rather than being fixed. More than 99.7% of firms are correctly classified in the complete post-reform period based on their pre-reform status, and results are robust to excluding the firms with a change in treatment status from the sample, see Table C9 in the Appendix. We also show that our findings are robust to relying on an instrumental variable strategy, where we instrument the actual treatment status in post-

reform years by the pre-reform treatment status interacted with a post-reform dummy, see Table C11 in the Appendix.

One additional concern might be that our findings are confounded by other policy events in France during our sample frame that might affect firm behavior. Of particular concern are tax reforms with a potentially differential effect on larger and smaller firms in France. There were two key reforms to corporate taxation during our sample frame. In 2008, the country reformed its existing R&D tax credit scheme, including removal of the pre-existing tax credit ceiling and a shift from an incremental to a volume-based calculation of the credit. These reforms, while increasing the generosity of R&D tax incentives for all firms, by design, favored larger over smaller entities and would, therefore, if anything, work against the effects of our treatment. Further note that our findings are robust to ignoring any R&D tax credit related impact on firms' tax payments (cf. Specification (3) of Table 3).

A second set of corporate tax reforms was implemented in 2013, introducing the Competitiveness and Employment Tax Credit (CICE), which aimed to reduce labor costs and boost employment. At the same time, the government significantly increased the dividend tax rate. These reforms occurred late during our post-treatment period, with many effects, such as the payout of the CICE, beginning in 2014 or later. Table C12 in the Appendix demonstrates that our findings remain robust when excluding post-treatment years after 2012 or 2013, respectively. In further robustness checks, we also assess the relevance of other important legal and regulatory thresholds. In particular, various legal obligations in terms of social dialogue, profit sharing and accounting apply to French companies when they reach the threshold of 50 employees (see, e.g., Gourio and Roys, 2014, Garicano et al., 2016, Askenazy et al., 2022, Aghion et al., 2023). Various policies and regulations, moreover, differentiate between small and medium enterprises (SMEs) and larger firms. Therefore, also in Table C12 in the Appendix, we show that our findings are robust to non-parametrically absorbing differences in outcome trends between French firms with more or less than 50 workers and between firms that do and do not fall under SME regulations.

Finally note that we paid close attention to loss-making firms in our data. All specifications in Tables 2-4 include a regressor indicating if firms incurred losses in the preceding year, which might be carried forward and reduce current-period tax payments. In Ap-

pendix C, we furthermore show that all our findings hold if we restrict our data to firms with non-negative income (see Table C13). In the tax rate regressions (Columns (2) to (4) in Table 3), the sample is by construction limited to firms with non-negative tax payments to avoid negative ETRs and gross tax rates.[32] A large prior literature on multinational profit shifting (see, e.g., Dharmapala, 2014 for a review), based on this line of argumentation, restricts its focus to profit-making firms. We also followed this choice in our initial profit shifting analysis (cf. Table C1 in the Appendix). For consistency reasons, we will furthermore, in the following, present findings for profitable firms.

Baseline Analysis – Investment Response

We next turn to analyzing whether firms in France adjusted their real economic activity in response to the introduction of the French TP documentation law. The analysis is based on the Orbis data. The dependent variable is the log of firms' fixed assets. Table 5 presents static DiD estimates (structured as in Table 2); Figure 4 presents dynamic DiD estimates. The sample is first restricted to firms in France (Specification (1)) and then augmented by firms outside France to granularly model size-specific trends (Specifications (2) and (3)) in firms' investment behavior (see argumentation above). Control variables are included as given in Equations (1) and (2). Specifications (4) and (5), again, exclude firms which belong to multinational firms located in countries that experienced changes in their corporate tax rate provisions in the reform year 2010 or the whole sample frame respectively. Our preferred estimate (Specification (3)) suggests that fixed assets in treated firms dropped by 3.07% relative to the control group in the wake of the TP reform. In robustness checks in Table C4, we, moreover, measure the investment response using firms' net investment as drawn from administrative data, which is either normalized using pre-reform mean or lagged assets. This does not alter our results.

The dynamic DiD estimates in Figure 4 furthermore indicate that fixed assets emerged in parallel between treated and control firms prior to treatment, hence again corroborating the common trend assumption of our DiD design. After treatment, fixed asset investments in treated firms dropped relative to the control group, with the treatment

[32]Loss-making entities might, in the presence of loss carryforwards, also have incentives to understate profits, but to the extent that carryfowards are restricted or there is uncertainty about firm survival, related incentives are weaker. Focusing on the latter subset of firms offers the advantage that incentives for profit shifting are strongest in this sub-group of firms.

Table 5: Static DiD Model - Reform Effect on Fixed Assets of Firms in France

	(1)	(2)	(3)	(4)	(5)
Sample	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
Data	Orbis	Orbis	Orbis	Orbis	Orbis
treat x post	-0.0675***	-0.0607***	-0.0307**	-0.0361***	-0.0430***
	(0.0135)	(0.0125)	(0.0125)	(0.0127)	(0.0140)
Min. group tax rate	-0.0263	-0.756***	-0.398***	-0.356***	-0.0575
	(0.254)	(0.0978)	(0.101)	(0.131)	(0.252)
Ln(turnover)	0.557***	0.437***	0.411***	0.418***	0.503***
	(0.0147)	(0.00371)	(0.00429)	(0.00511)	(0.0152)
Profitability	-1.799***	-1.777***	-1.744***	-1.759***	-1.717***
	(0.0555)	(0.0184)	(0.0198)	(0.0229)	(0.0537)
Firm FE	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes
Host cty-year FE	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes
Firm size-year FE	no	no	yes	yes	yes
N	191152	1673546	1435610	1044156	195601

Notes: The table presents estimates of a static DiD regression model. The dependent variable is the log of firms' fixed assets (from unconsolidated financial reports from the Orbis database). The regressor of main interest is $treat \times post$ indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. Column (1) uses unconsolidated financial reports for French firms from the Orbis database. Columns (2)-(5) also use unconsolidated financial reports for firms included in Orbis. Column (2) estimates the specification for the extended sample of firms in France and in other countries. Column (3) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (4) and (5) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

effect gradually increasing over the first post-treatment years (see Figure 4).[33] Consistent with the findings in the prior subsection, heterogeneity analysis furthermore suggest that statistically significant asset responses are centered around firms with a tax haven link (cf. Specifications (5) and (6) in Table 4).[34] In the Appendix, we, furthermore, show that these findings are robust to the sensitivity checks outlined in the previous section (changes in the set of control variables, or relying on balanced data, Figures C3(c) and C3(d); different normalization of the dependent variable, Table C4; restrictions of the set of firms included in the estimation, Tables C5 and C7, Figure C5(b); placebo tests, Table C8; sample restricted to firms without change in treatment status after the reform, Table C10; instrumental variable approach based on treatment status prior to the reform, Table C11; changes in the sample frame, Table C12).

Statistical Inference

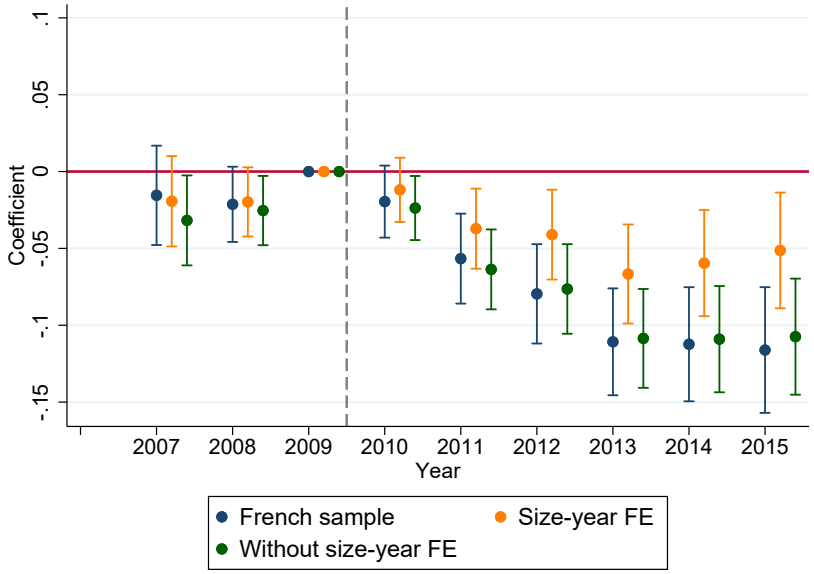
For both, the reform effect on zero tax-reporting and firms' investment response, we further assess the sensitivity of our findings to changes in underlying assumptions on the correlation structure of the errors. While the baseline analysis allows for clustering at the firm level and hence for serial correlation, Figure C4 in Appendix C shows that standard errors remain largely unchanged when we allow for clustering at the level of the multinational group or at the level of 2-digit industries.

Complementary, we draw on randomization inference, which does not rely on any assumption on the correlation structure of the errors. We randomly permute the treatment variable (indicating those firms that are within the scope of the French TP documentation requirements) across firms. This randomization procedure is repeated 1000 times, and the resulting distribution of t-statistics is compared to the t-statistic for the original regressor. To account for a regional component in the treatment assignment process, randomization is within the strata of parent countries. Treatment is, moreover, assigned in a time constant manner, that is, firms are defined as treated or untreated in all sample years.

[33]The size of our estimate is somewhat smaller than in prior studies on other anti-profit shifting measures: de Mooij and Liu (2020) find that MNE investment in the policy-changing country decreased by 11% after the introduction of general TP regulations. Bilicka et al. (2022) report that the introduction of the Worldwide Debt Cap in the UK in 2010 equally lowered asset investments by multinational firms in the UK by around 11%.

[34]When allowing for effect heterogeneity across large and small firms, we, again consistent with the findings in the prior subsection (see Footnote 31), find that asset responses are centered around larger entities, cf. Table C2 in the Appendix.

Figure 4: Dynamic DiD Model - Reform Effect on Fixed Assets of Firms in France



Notes: The figure shows dynamic DiD estimates for the effect of TP documentation rules on logarithmized fixed assets of firms in France (using Orbis data). The graph depicts point estimates and 95% confidence intervals of the β_j coefficients in Equation (1) or the γ_j coefficients in Equation (2). The specifications control for firm fixed effects, industry-year fixed effects, parent-country-year fixed effects, as well as the firm-level controls described in the main text. The blue symbols depict the baseline estimates: the set of control firms is restricted to entities in France (the corresponding static model estimates are reported in Column (1) of Table 5). The orange and green symbols show the extended sample, where the control group also includes firms outside France. This allows to include host-country-year fixed effects (green symbols, cf. Column (2) of Table 5 for the corresponding static model estimates). The orange symbols additionally control for size ventile-year fixed effects (the corresponding static model estimates are reported in Column (3) of Table 5). See Appendix C for further robustness checks.

Figure 5 shows the distribution of t-statistics of all permutations and compares it to the actual t-statistic of the original treatment effect. The models correspond to Specification (3) of Table 2 (outcome variable: zero-tax reporting) and Specification (2) of Table 5 (outcome variable: fixed assets) respectively. The reference distribution of t-statistics is centered closely around zero in both cases, and our original t-statistic is placed in the far left tail of the reference distribution, corroborating that our estimates are statistically significantly different from zero. The corresponding two-sided p-values are below 0.01.

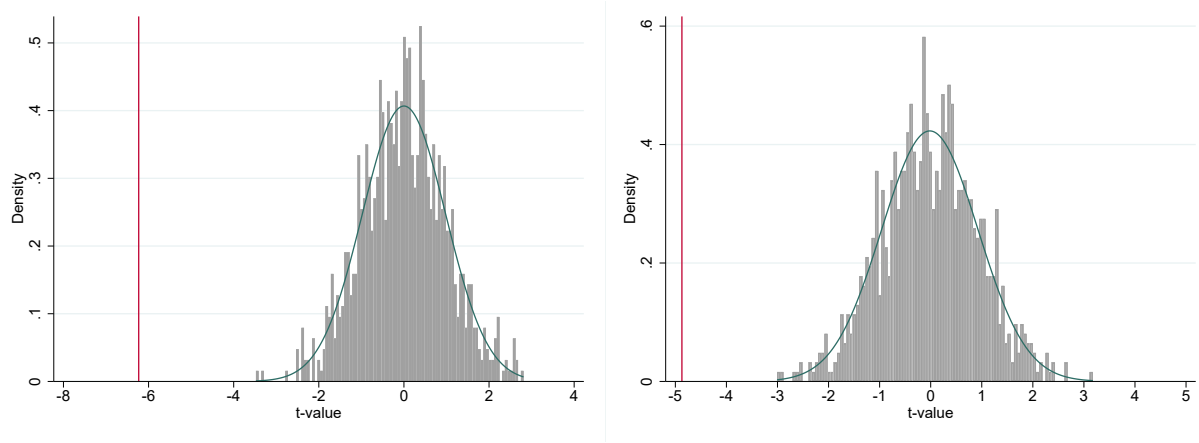
Discussion of Effect Size

Finally, note that our estimates suggest that firm responses are quantitatively non-negligible. Our baseline estimates suggest that firms' propensity to engage in aggressive tax avoidance, as measured by zero-tax reporting, decreased by around 5.6% after the reform (cf. Table 2). In Specification (1) of Table 3, we further use the inverse hyperbolic sine transformed tax payments of firms as the left-hand side variable and infer the reform's aggregate effect on tax paid by summing up the reform's firm-level effects over all treated firms. The changes in predicted values from switching the reform indicator from zero to one imply that the reform raised the tax paid by all treated firms by 187 million EUR, a 5.0% increase in the aggregate tax paid by treated firms relative to the base year 2009 before the reform.[35]

Comparing this change in corporate tax collection to the change in fixed asset investments implied by the model in Column (3) of Table 5 (a drop by 3.07%) yields a tax elasticity of asset investment of 0.61 (=0.0307/0.05). This estimate is within the upper range of the previous literature (see, e.g., de Mooij and Ederveen, 2003; Feld and Heckemeyer, 2011; Zwick and Mahon, 2017; Ohrn, 2018; McAuliffe et al., 2023). One potential explanation for the relatively large asset response is that firm adjustments may not solely be driven by the fact that firms' effective tax rates increased through the reform. Firms might also find it less attractive to engage in operations in France because of the additional compliance frictions associated with the new TP documentation rules. The observed fixed asset response captures both effects. Also note that our treated firms are large MNEs, which may generally – given their international structures – respond more sensitively to tax

[35]To check for robustness, we also use the level of tax paid as the dependent variable in an OLS regression with the same controls and fixed effects structure as in Column (1) of Table 3. The findings are quite similar with the estimates implying that the reform increased the aggregate tax paid of treated firms by 231 million EUR, a 6.2% increase relative to the base year 2009.

Figure 5: Randomization Inference - Direct Effect



(a) Close-to-Zero-Tax Reporting **(b)** Fixed Assets

Notes: The graphs show the t-statistics of the original treatment effect in Column (3) of Table 2 and Column (2) of Table 5 (vertical red line) and the randomization distribution (grey bars) with 1,000 permutations. For each permutation, we estimate the effect of the dependent variable (zero-tax indicator or logarithmized fixed assets) on the TP reform in 2010 including all control variables and the full set of fixed effects as based on the respective specifications. Resampling is kept constant within firms and we permute the treatment variable within the strata of parent countries.

increases than national firms and smaller MNEs. See Appendix C for further discussion.

6 Spillover Effects

The prior section established that the introduction of TP documentation provisions increased the tax reporting of firms in France, while lowering firms' real economic activity in the country. However, treatment effects must not be limited to the policy-changing country, but may, through the group network, transmit to foreign group locations. In the investment domain, the sign of this cross-border effect is ambiguous and hinges on whether investments at different group locations are substitutes or complements (see Section 2 and Appendix A for details). MNEs might relocate activity from the policy-changing country to other group affiliates to avoid the tighter TP documentation provisions (implying a substitutionary relation between domestic and foreign firm investment). If the French and foreign group affiliates operated in the same value chain, investments at foreign group locations could, however, also decline in the wake of the TP rule change (implying a complementary relation between domestic and foreign firm investment). As illustrated in Section 2 and Appendix A, the decline in real investments might be particularly pronounced at low-tax affiliates. If MNEs engaged in low-tax operations primarily with the aim to transfer income there, maintaining such activity may become less attractive under

contemporaneous TP documentation requirements.

In the following, we empirically test for such spillover effects.

6.1 Methodology

The sample in this part of the analysis comprises all firms *outside of France*. Affiliates of MNEs within the scope of the French TP regulations and with a French parent form the treatment group.[36] They are compared to untreated entities with no ownership connection to France. Firms with a non-French parent but an ownership link to France are dropped from the analysis (while results remain qualitatively unchanged when they are included in the treatment group). The formal estimation model reads

$$Y_{it} = \sum_{j=-3, j\neq -1}^{6} \psi_j o_{it}^j + X_{it}'\omega + \rho_i + \alpha_{kt} + \zeta_{ht} + \chi_{ct} + \xi_{mt} + \epsilon_{it}. \tag{3}$$

The variable definition follows Equation (1). o_{it}^j indicates the leads and lags respectively of the treatment dummy (now indicating foreign affiliates of multinational groups that are treated by the reform). The specification again non-parametrically controls for time-varying shocks at the host-country level (χ_{ct}), parent-country level (ζ_{ht}), industry-level (α_{kt}) and across firms of different size (ξ_{mt}).

6.2 Results

The results are presented in Figure 6 (dynamic DiD model) and in Table 6 (static DiD model). The dependent variable is firms' logarithmized fixed assets at foreign group locations. One caveat is the heterogeneous coverage of financial information in Orbis across foreign locations due to differential reporting requirements. For example, estimates may be attenuated if the spillovers occur in countries with lower coverage.[37] Table 6 distin-

[36]Figure B2 in the Appendix provides a graphical depiction of the worldwide group network of multinational firms that are headquartered in France and treated by the TP documentation provisions: the graph shows the number of treated affiliates of French GUOs per country, relative to countries' GDP.

[37] Another caveat would be strategic closure of foreign subsidiaries in response to the new regulation. However, we do not find a differential effect of the reform on the survival rates of foreign subsidiaries between treatment and control group. Specifically, we run a linear probability model to predict whether foreign affiliates drop from the sample and whether foreign affiliates of treated firms are more likely to do so. Hence, the dependent variable is a binary indicator of whether an affiliate disappears in the subsequent period, and we test whether the reform affected the survival rate of affiliates in the treatment group relative to the control group. We have also investigated whether the likelihood varies for specific sets of foreign countries such as countries with below median corporate income tax rates or tax havens. However, we do not find a difference between the two groups. The test statistic has a p-value of 0.85 in

guishes between firms located in foreign high-tax and low-tax countries. Specifications (1) and (2) differentiate between firms that are located in tax haven economies and those that are not. Specifications (3) and (4) estimate analogous specifications, differentiating between high-tax and low-tax countries with a corporate tax rate below and above 12.5%, respectively. Specifications (5) and (6) present estimates for firms in higher-tax countries with corporate tax rates above 20% and 30%. The results show a stark picture: while investments at foreign higher-tax affiliates do not significantly change in the wake of the introduction of the French TP documentation requirements, low-tax affiliates experience a pronounced drop in fixed asset investments.[38] This may reflect that intangible property is preferably acquired by subsidiaries from low-tax jurisdictions in order to receive license payments there, avoiding taxes in the payer country. With stronger TP documentation requirements, this strategy becomes less profitable inhibiting the growth of assets in low-tax locations. This notion is supported by Specifications (7) and (8), which focus on intangible property as left-hand side variable. The specifications proxy for intangible property by the number of successful patent filings of the affiliates to the European Patent Office and national patent offices worldwide. We focus on priority filings to avoid double counting and acknowledge that the distribution of patent quality is highly skewed by quality-adjusting the patent count measure. Specifically, we rely on common quality-indicators used in the literature: the patent's five-year forward citations, the size of the patent family and the number of technology classes on the patent. A composite technological quality index is then derived from a factor analysis (e.g., Lanjouw and Schankerman, 2004). This measure is used as the outcome variable in a Poisson regression framework in Specifications (7) and (8) restricting the treatment group respectively to firms in tax haven countries or countries with tax rates below 12.5%. Consistent with the notion that firms scale down their intangible property holdings at low-tax affiliates, we find that the number of quality-adjusted patent filings at low-tax affiliates of treated multinational groups drops after the reform.

Figure 6 presents dynamic DiD estimates, which confirm that treated and control firms' outcomes emerged in parallel prior to treatment. Moreover, while the analysis in Table 6 accounts for clustering at the firm level, we again show that our findings are robust to

the total sample, and the smallest p-value is 0.18 in the subsample analysis.

[38]Table C14 in the Appendix shows that the findings are robust to excluding firms which were exposed to corporate tax rate changes or changes in anti-avoidance rules in 2010 or during the full sample period (2007 to 2015) in their home or host country.

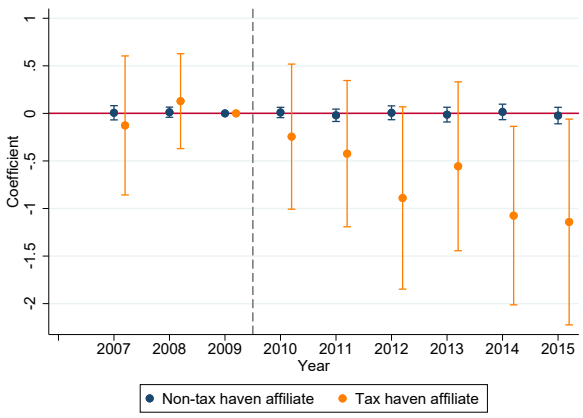
allowing for error correlation at different levels (Figure C7 in the Appendix) and randomization inference testing (two-sided p-value: 0.007).

Table 6: Spillover Effects on Fixed Assets of Affiliates Outside France

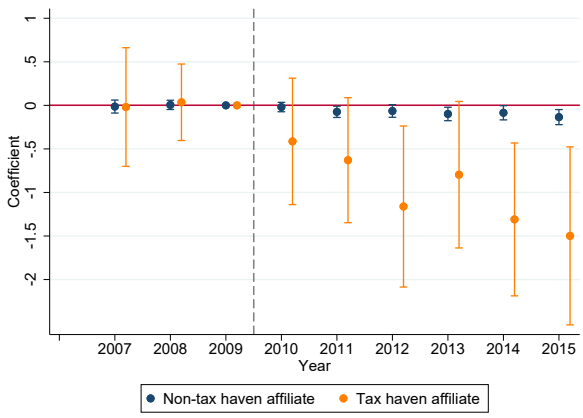
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample split	Tax haven	No haven	$\tau_i \leq 12.5\%$	$\tau_i > 12.5\%$	$\tau_i > 20\%$	$\tau_i > 30\%$	$\tau_i \leq 12.5\%$	Tax haven
Outcome	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	# patents	# patents
treat x post	-0.660*	-0.00999	-0.851***	-0.00392	0.00617	0.0294	-0.894**	-0.167
	(0.377)	(0.0298)	(0.320)	(0.0298)	(0.0339)	(0.0434)	(0.434)	(0.654)
Min. group tax rate	-1.074	-0.313***	-0.217	-0.335***	-0.298**	-0.331**	1.352	1.374
	(2.847)	(0.112)	(0.647)	(0.114)	(0.127)	(0.152)	(0.894)	(0.894)
Ln(turnover)	0.193***	0.399***	0.418***	0.391***	0.383***	0.360***	0.340***	0.340***
	(0.0273)	(0.00469)	(0.0232)	(0.00477)	(0.00522)	(0.00912)	(0.0459)	(0.0459)
Profitability	-2.229***	-1.689***	-1.814***	-1.693***	-1.727***	-1.904***	-0.274**	-0.273**
	(0.265)	(0.0222)	(0.126)	(0.0228)	(0.0260)	(0.0467)	(0.127)	(0.127)
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm size-year FE	yes	yes	yes	yes	yes	yes	yes	yes
N	15779	1007317	38307	984921	831452	353484	46021	46033

Notes: The table presents estimates of a static DiD regression model. The dependent variable is firms' logarithmized fixed assets (from unconsolidated financial reports from the Orbis database) in Columns (1) to (6) and the number of quality-adjusted granted patents in Columns (7) and (8) (from PATSTAT). Columns (1) to (6) are estimated with OLS, Columns (7) and (8) employ a Poisson pseudo-maximum-likelihood (PPML) model. In Columns (1) to (2), the sample is restricted to firms in tax haven or non-tax haven countries, respectively, based on the tax haven list provided in Dharmapala and Hines (2009). Columns (3) to (4) restrict the sample to firms with a host country statutory tax rate τ_i below or above 12.5%. In Columns (5) and (6), the sample is further restricted to firms with a host country statutory tax rate τ_i above 20% or 30% respectively. Column (7) restricts the treatment group to firms with a host country statutory tax rate τ_i below 12.5%. The control group cannot be restricted because the number of firms with τ_i below 12.5%, that have no affiliate link to France, and have at least one patent would be insufficient to run the regression. Column (8) restricts the treatment group to firms in tax haven countries. The control group cannot be restricted because the number of firms that are in tax haven countries, have no affiliate link to France, and have at least one patent would be insufficient to run the regression. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 6: Spillover Effects on Fixed Assets of Affiliates Outside France



(a) Tax Haven vs. Non-Tax Haven Firms (with size-year FE)



(b) Tax Haven vs. Non-Tax Haven Firms (without size-year FE)

(c) High-Tax vs. Low-Tax Firms (with size-year FE)

(d) High-Tax vs. Low-Tax Firms (without size-year FE)

Notes: The figures show dynamic DiD estimates for the spillover effects of TP documentation rules in France on logarithmized fixed assets of firms outside France (using Orbis data). The graphs depict point estimates and 95% confidence intervals of the ψ_j coefficients in Equation (3) respectively. The specifications control for firm fixed effects, industry-year fixed effects, parent-country-year fixed effects, host-country-year fixed effects, as well as the firm-level controls described in the main text. Panels (a) and (c) additionally control for size-year fixed effects. Panels (a) and (b) depict estimates from specifications, where the sample comprises affiliates in tax haven countries (orange symbols) and affiliates in non-tax haven countries (blue symbols). Panels (c) and (d) depict estimates from specifications, where the sample comprises firms with a statutory corporate tax rate higher than 12.5% (blue symbols) and lower/equal to 12.5% (orange symbols). See Appendix C for further robustness checks.

7 Conclusions

This paper examines how TP documentation requirements affect the behavior of MNEs. TP documentation rules are a central element of the international anti–profit-shifting architecture: they are designed to curb the mis-pricing of intrafirm transactions and, thereby, the shifting of taxable income to low-tax jurisdictions. Despite their widespread adoption, relatively little is known about their effectiveness and their implications for real economic activity. We contribute to filling this gap.

Exploiting the introduction of TP documentation in France and rich firm-level data covering activities in France and abroad, we find that TP documentation requirements are effective and reduce MNEs' propensity to report near-zero taxes in France by 5.6%, indicating a decline in tax avoidance through profit shifting. At the same time, treated firms reduce their real activity in France as fixed assets decrease by 3.1%. Additional analyses show that TP documentation rules exert effects beyond France: foreign group locations in low-tax countries significantly contract in size— consistent with a retrenchment of real activity that had facilitated profit shifting prior to the reform. We find no spillovers on investments at foreign higher-tax locations.[39]

These findings inform ongoing policy discussions about the design of the international corporate tax system. Governments have adopted, both unilaterally and through coordinated initiatives, a series of measures to restrain cross-border tax avoidance. TP rules are central to these efforts because mis-pricing of intrafirm trade is widely viewed as a key channel of aggregate profit shifting. Yet the extent to which current TP rules succeed—and the real-activity costs they entail—remains debated. Some observers have called for more fundamental changes in international tax rules. The most prominent suggestion has been to abolish the current "separate accounting" system—where multinational group profit is allocated across group affiliates based on intra-firm trade pricing—for a system of profit consolidation and formulary apportionment, where profit is consolidated at the level of the MNE and apportioned to affiliates based on a fixed formula that reflects affiliates' real economic activity. The European Commission has advocated a reform along these lines

[39]While our paper offers a comprehensive perspective on the workings of TP documentation rules in France, some potential distortions are ignored: we, for example, do not assess if the TP provisions hamper firm growth below the threshold, that is if firms strategically distort their size to avoid TP documentation rules. Prior evidence points to related behavioral responses in the context of other international tax provisions (see, e.g., Hugger, 2025).

in the EU for years (see, e.g., European Commission, 2021).[40] Whether such fundamental changes in international tax rules are necessary and desirable critically hinges on the effectiveness of TP rules in preventing tax-strategic mis-pricing of intra-firm trade—and on the economic distortions that TP rules create along the way. Our analysis speaks to this debate by offering a quantification of the effect of TP documentation rules on firms' tax reporting and investment behavior.[41]

[40]Several countries apply formula apportionment for corporate taxation at the subnational level—formulas account for wage costs, assets or sales, or a combination of these factors. Profit consolidation at the MNE level renders intra-firm trade pricing irrelevant.

[41]A thorough welfare analysis of TP documentation rules is complex and must be relegated to future research. Welfare effects, among others, hinge on the marginal benefits from public good and service provision, on spillovers of multinational firm investments (and their decline) on national firms (see e.g. Alfaro-Urena et al., 2022), on their effects on productivity, workers‘ wages and job creation in frictious labor markets (see e.g. Setzler and Tintelnot, 2021) as well as on the distributional implications of the rules and individual welfare weights in the social welfare function.

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A Theoretical Considerations

We develop a stylized theoretical model that illustrates the link between transfer pricing (TP) regulations and multinational enterprises' (MNEs) input choices. The model serves to motivate and clarify the empirical analysis presented in the main text.

A.1 Baseline Model

We consider an MNE headquartered in a high-tax country with corporate tax rate t_h, which produces output according to a production function $y = f(k, m)$, where k denotes capital and m is an intermediate good. The production function $f(\cdot)$ is strictly concave and satisfies the standard conditions: $f_k, f_m > 0$, $f_{kk}, f_{mm} < 0$, and $f_{km} > 0$, where subscripts denote partial derivatives.

The intermediate input m is a CES aggregate of a continuum of varieties m_i, indexed over $i \in [0, N]$, and sourced from a foreign low-tax subsidiary (with tax rate $t_l < t_h$):

$$m = \left(\int_0^N m_i^{\frac{\sigma-1}{\sigma}} \, \mathrm{d}i \right)^{\frac{\sigma}{\sigma-1}},$$

where $\sigma > 1$ denotes the elasticity of substitution across varieties.[42]

Each variety m_i is produced at constant marginal cost $\bar{c}$ and sold to the parent at a transfer price $\bar{c} + \delta_i$, where $\delta_i > 0$ captures the deviation from the arm's length price. Deviations from arm's length pricing induce variable cost per unit m_i, defined as $C_i = \frac{1}{2}\frac{\delta_i^2}{\mu}$, where μ is an inverse measure of profit-shifting costs. The variable cost component comprises the costs for legal services, which allow firms to justify deviations from arm's length provisions or may reflect detection risk and fines by authorities if mis-pricing is detected. Sourcing and trading an input variety i is, furthermore, assumed to entail fixed cost $\phi_i = \phi$, which represent compliance burdens related to firm documentation in the TP domain.

Assuming an output price normalized to one and that variable TP costs are not deductible,

[42] Nested production functions are common in the literature analyzing multinational firms, see e.g. Feenstra (2015), for a textbook treatment.

the firm's after-tax global profit is:

$$\begin{aligned}\pi =&(1-t_h)\left[f(k,m)-rk-\int_0^N(\bar{c}m_i+\delta_i m_i+\phi)\,\mathrm{d}i\right]\\&+(1-t_l)\int_0^N\delta_i m_i\,\mathrm{d}i-\frac{1}{2\mu}\int_0^N\delta_i^2 m_i\,\mathrm{d}i.\end{aligned}$$

The decision margins of the firm include transfer price deviations $\{\delta_i\}$, the number of varieties N and the quantity of each variety m_i used to assemble the intermediate input m in a cost effective way and, finally, the overall input choices k and m. Since input costs depend on transfer prices, we first solve for the optimal $\{\delta_i\}$.

Optimal Transfer Prices The firm chooses δ_i to maximize profit. The first-order condition

$$(t_h-t_l)m_i=\frac{\delta_i}{\mu}m_i \quad \Rightarrow \quad \delta_i^*=(t_h-t_l)\mu:=\delta^*,$$

equates the tax payment reduction from a marginally higher transfer price with the marginal profit shifting costs and implies symmetric optimal distortions across all i.

Optimal Input Choices To determine the cost minimizing combination of intermediate varieties to assemble the intermediate good m, we exploit symmetry and set $m_i=\bar{m}$ for all i, which implies:

$$m=N^{\frac{\sigma}{\sigma-1}}\bar{m}.$$

Substituting into the profit function and using δ^* gives:

$$\pi=(1-t_h)\left[f(k,m)-rk-\phi N\right]+N^{-\frac{1}{\sigma-1}}m\cdot c,$$

where:

$$c=\frac{1}{2}(t_h-t_l)\mu-(1-t_h)\bar{c}$$

is the effective per-unit cost of an intermediate input, after accounting for tax savings from profit shifting.

Profit maximization with respect to N (holding m fixed) yields:

$$N^*(m) = \left(\frac{cm}{(1-t_h)\phi(\sigma-1)} \right)^{\frac{\sigma-1}{\sigma}}.$$

Thus, the after-tax cost function for m is:

$$C(m) = (cm)^{\frac{\sigma-1}{\sigma}} \cdot [(1-t_h)\phi]^{\frac{1}{\sigma}} \cdot \tilde{\sigma},$$

where $\tilde{\sigma} = (\sigma-1)^{1/\sigma} + (\sigma-1)^{(1-\sigma)/\sigma}$. Observe that, intuitively, $C(m)$ increases in the unit and fixed cost c and ϕ.

Capital and Intermediate Input Choice The firm solves:

$$\max_{k,m} (1-t_h)(f(k,m) - rk) - C(m).$$

The first order conditions are:

$$\text{FOC}_k : (1-t_h)(f_k - r) = 0$$
$$\text{FOC}_m : (1-t_h)f_m = C_m$$

Tighter TP regulations raise both ϕ, e.g. by increasing transfer price documentation requirements, and reduce μ, increasing c and thereby raising the marginal cost for the intermediate good C_m:

$$C_m = c^{\frac{\sigma-1}{\sigma}} [(1-t_h)\phi]^{\frac{1}{\sigma}} \cdot \tilde{\sigma} \cdot \frac{\sigma-1}{\sigma} m^{-\frac{1}{\sigma}}.$$

Total differentiation of the FOCs yields:

$$\begin{bmatrix} f_{kk} & f_{km} \\ (1-t_h)f_{km} & (1-t_h)f_{mm} - C_{mm} \end{bmatrix} \cdot \begin{bmatrix} dk \\ dm \end{bmatrix} = \begin{bmatrix} 0 \\ dC_m \end{bmatrix}$$

Since $f_{km} > 0$ and the Hessian determinant is positive[43], it follows that:

$$dk = -\frac{f_{km}}{\det A} dC_m < 0.$$

Intuitively, tighter TP regulations reduce the use of m by raising its cost, which—due to complementarity—lowers capital demand.

Two important remarks are in order: First, although increases in fixed and variable transfer pricing cost have qualitatively similar effects in our simple model, observe that changes in variable cost (μ) affect only sourcing decisions from low tax countries (see the definition of c above). In contrast, sourcing from high-tax countries, which does not offer profit shifting opportunities, is also affected by changes in the fixed compliance cost ϕ. Our model thus implies that both high and low-tax foreign subsidiaries scale back their operations following tighter TP documentation regulations – but that the quantitative effect tends to be more pronounced at low-tax locations. Second, the capital response to tighter TP documentation regulations is ultimately an empirical questions as our results crucially depend on the assumed complementarity between capital and the intermediate input and would reverse if these two production factors would be substitutes.

A.2 Bunching at Zero Profits

Many MNEs report zero domestic taxable income. To model this, we introduce firm heterogeneity in fixed and variable TP costs: firms differ in μ_j and ϕ_j. Firm j's profits are:

$$\begin{aligned}\pi_j = (1-t_h)\left[f(k,m) - rk - N\bar{m}(\bar{c} + (t_h - t_l)\mu_j) - N\phi_j\right] \\ - \frac{1}{2}(t_h - t_l)^2 \mu_j N\bar{m} + (1-t_l)(t_h - t_l)\mu_j N\bar{m},\end{aligned}$$

where the first two terms correspond to domestic profits and the last term to profits at the foreign subsidiary.

Observe that firms with sufficiently low variable profit shifting costs (i.e. high values of μ_j) and sufficiently high fixed compliance cost ϕ_j report zero domestic profits. Profit shifting beyond the point where domestic profits are still positive cannot be optimal

[43] See, e.g., Dixit (1990).

because it entails costs without a corresponding tax payment reduction.[44] This generates a "bunching" mass of firms at zero profits.[45]

Tighter TP documentation regulation affects domestic profits through both μ_j (raising variable costs) and ϕ_j (raising fixed costs), but in opposing directions: while reduced μ_j discourages shifting (raising taxable income), increased ϕ_j lowers domestic profits. The net effect on bunching is therefore ambiguous and evaluated empirically in the main analysis.

See Section 2 in the main text for a summary of these theoretical insights.

A.3 Impact of TP Documentation Rules on Firms' ETR

On a separate note: As described in the main text, our empirical analysis relies on two key measures to capture the impact of TP documentation rules on firms' tax reporting behavior: (i) a dummy variable indicating close-to-zero-tax reporting of firm j at time t, and (ii) the effective tax rate of firm j at time t. If TP documentation rules are tightened, we expect less mis-pricing of intra-firm trade, which may translate into higher tax liabilities. Note that a reverse effect may also be at work: MNEs' investment and output may fall, lowering profits and thus tax payments. ETR_{jt} normalizes tax payments by accounting pre-tax profits, thereby cushioning the second channel. It is defined as:

$$\text{ETR}_{jt} = \frac{\text{TAX}_{jt}}{P_{jt}} = t_{ct} \frac{P_{jt} - \text{TA}_{jt}}{P_{jt}},$$

where TAX_{jt} denotes the tax payments of firm j at time t, P_{jt} denotes firm j's accounting pre-tax profit, TA_{jt} are tax allowances (so taxable income may differ from accounting profit), and t_{ct} is the statutory corporate income tax rate in country c at time t. If tighter TP documentation rules limit opportunities to shift income to low-tax countries, this is expected to raise pre-tax profits P_{jt} in the high-tax jurisdiction and, consequently, the effective tax rate, since

$$\frac{\partial \text{ETR}_{jt}}{\partial P_{jt}} = t_{ct} \frac{\text{TA}_{jt}}{P_{jt}^2} \; > \; 0.$$

[44] Loss carryforwards dampen this mechanisms. But to the extent that tax provisions imply limitations to loss carryforwards (e.g. by restricting the number of years or/and the amount losses can be carried forward), the argument still applies. Moreover, even in the absence of restrictions to loss carryforwards, firms may find it unattractive to shift profits to lower negative income, if there is risk of firm closure or restructuring that limit loss offsets.

[45] This bunching at zero profits is consistent with existing empirical evidence (e.g., Bilicka, 2019).

Note, however, that this shift is muted relative to contexts, where researchers study shifts in MNEs' consolidated tax payments and ETRs. In the latter cases, groups' consolidated profits in the denominator remain constant and only tax payments in the numerator show (reform-induced) shifts.

B Data Appendix

In this Appendix, we document the data collection, the data cleaning and the construction of our final panel dataset on MNEs worldwide and the administrative dataset on the French part of those multinationals. The purpose is to show our sample selection approach and make our data processing transparent and reproducible for other researchers.

For the Orbis data preparation, we start with a full-access version of Bureau van Dijk's Orbis database of more than 50 million firms worldwide. We use a downloaded version of the database from 2018 (accessed by University of Tübingen) and make use of the financial data on firms and data on firms' ownership links. For the ownership links, we use the 50% Global Ultimate Owners (GUO) definition. Our administrative dataset is based on all tax returns filed under the normal tax regime (BIC-RN), provided by the French Public Finances Directorate General (DGFiP). Our data cleaning and merging is based on three steps. First, we download and clean the data on firms' financial accounts. Second, we prepare the ownership data on GUOs, controlling shareholders and subsidiary lists, which allows us to identify the MNEs. Third, we merge the financial account and ownership data and analyze the coverage for countries over time. This yields our final estimation dataset.

For the administrative dataset, we start with all tax returns filed under the normal tax regime, comprising both standalone firms (in terms of group taxation) as well as tax group tax returns. After preparing the tax return data, we merge this dataset with our Orbis MNE dataset to arrive at our final sample for the empirical analysis.

Orbis Financial Data

Our download is a full version of Orbis financial account data for the years 2007 to 2016. We follow quite conservative cleaning steps as recommended by Kalemli-Özcan et al. (2024). First, we drop consolidated account observations (step 2); then we drop observations with missing accounting close dates (step 3); firm-year level duplicates (step 4); firm-year level observations where total assets, employments and operating revenue are missing simultaneously (step 5); firms with negative total assets, employment, sales, or tangible fixed assets in at least one year (steps 6 to 9). Table B1 shows how the sample size of the Orbis financial account dataset is reduced by concluding the data cleaning

Table B1: Orbis Financial Account Data Cleaning Steps

Step	Description	Firms	Observations	% of step 1
1	Downloaded	-	53,977,057	100.00
2	Keep unconsolidated accounts	6,358,749	37,700,525	69.85
3	Drop observations with missing accounting close date	6,358,749	37,700,522	69.85
4	Drop duplicates by firm and year	6,358,749	37,574,085	69.61
5	Drop firm-year observation if total assets, employment, and operating revenue are missing simultaneously	6,357,907	37,525,162	69.52
6	Drop firm if total assets are negative in any year	6,357,855	37,523,246	69.52
7	Drop firm if employment is negative in any year	6,357,855	37,523,246	69.52
8	Drop firm is sales are negative in any year	6,357,386	37,517,041	69.51
9	Drop firm if tangible fixed assets are negative in any year	6,357,215	37,503,101	69.48

Source: Bureau van Dijk (2018); full version downloaded by University of Tübingen.

steps named above. The cleaned Orbis financial account sample consists of 6.35 million firms and 37.5 million observations for the years 2007 to 2016. This sample amounts to 69.5% of the downloaded Orbis financial account data. Most observations are dropped when excluding consolidated accounts (step 2).

Orbis Ownership Data

In a next step, we prepare the Orbis data on ownership structures in 2018 to identify MNE groups. The ownership structures reported by Orbis are static for the most recent year (in our case 2018). The data includes information on the GUOs, the controlling shareholders on different levels as well as subsidiaries on different levels. There are two possibilities to identify MNE groups from the ownership data. First, we use data on firms and their GUOs to identify corporate groups. We define a corporate group as a MNE group if at least one majority-owned affiliate is located in another country than the GUO. Hence, we use the following GUO definition: a firm is a GUO if its ownership share is larger than 50.01%, it has no identified shareholders, and it is the highest quoted shareholder. Second, we use full subsidiary lists and identify MNE groups if at least one majority-owned subsidiary is located abroad.

In the following, we describe the data processing in more detail. From the Orbis 2018 data download, we use three different datasets: the GUO dataset, the controlling shareholder dataset, and the subsidiaries dataset. The GUO dataset contains information on firms' immediate shareholders, GUOs, and domestic ultimate shareholders and there is only one static observation per firm. The controlling shareholder dataset contains all controlling

shareholders listed between the subject firm and the GUO. Hence, there are several observations per firm, and the variable controlling-shareholder-level indicates the length of links between the subject firm and the controlling shareholder. From this dataset, we identify the highest controlling shareholder of a firm. Both the GUO and the controlling shareholders datasets are available for different GUO definitions. We use the 50% ownership GUO definition. In addition, the subsidiaries dataset contains full lists of parent firms' first-level subsidiaries. Firms are listed as parents and subsidiaries in the dataset, since only first-level ownership shares are reported (direct and total shares). The level of observation is the parent firm, for which as many observations exist as subsidiaries the firm has.

Table B2 presents the sample selection steps for identifying MNE groups using the Orbis ownership data from 2018. The downloaded GUO dataset includes more than 14 million ownership links whereof 4.18 million firms have a non-missing GUO. In case, the GUO dataset does not provide a parent for a firm, we replace it with the highest controlling shareholder from the controlling shareholder dataset and merge this information to the GUO dataset. In step 3, the missing GUO can be replaced by the highest controlling shareholder for 2,719 firms. In step 4, we replace missing GUO country codes by the first two digits of the firm ID (bvdidnumber) in 611,165 cases. However, for 608,370 firms the country of the GUO remains unknown (step 5). We know that these firms have a GUO, but the residence country of the GUO is unknown (e.g., GUO ID starts with II, WW, YY, or ZZ). We flag these firms and later exclude them from our empirical analysis. In step 6, we identify one duplicate firm (bvdidnumber= SG197301118N) and drop it. In addition, we drop 10,195,532 observations, for which the GUO ID number is missing.

In step 7, we append ownership information from the subsidiaries dataset (4,191,792 observations) to the GUO dataset. We only append majority-owned subsidiaries with a direct or total ownership share of more than 50% for subsidiary levels 1 to 10. This increases our sample size to 10,356,863 firm-subsidiary-level observations. Table B3 provides an overview on the number of subsidiaries appended at different levels.

In step 8, we identify 2,948,853 corporate groups, that is, groups of firms with the same GUO. Within these corporate groups, we identify 10,225,466 foreign ultimate links between firms and GUOs or subsidiaries and GUOs (step 9), that is, a firm or subsidiary is located in another country than its GUO. Step 10 reports 2,948,569 MNE groups with at

Table B2: Orbis Ownership Data Cleaning Steps

Step	Description	Firms	GUOs	% of firms step 1
1	Download GUO data	14,379,027	2,947,121	100.00
2	Non-missing GUO	4,180,776	2,947,121	29.08
3	Fill in GUO by controlling shareholder	4,183,495	2,948,853	29.09
4	Missing GUO country	611,165	544,137	4.25
5	Unknown GUO country (WW/YY/ZZ)	608,370	542,254	4.23
6	Drop duplicates and remaining missing GUOs	4,183,494	2,948,853	29.09
7	Append subsidiary lists	4,183,494	2,948,853	29.09
8	Corporate groups	4,183,494	2,948,853	29.09
9	Foreign ultimate links	4,182,776	2,948,569	29.08
10	MNE groups	4,182,953	2,948,569	29.09

Source: Bureau van Dijk (2018); full version downloaded by University of Tübingen.

Table B3: Orbis Subsidiary Lists Data

Subsidiary level	N
1st level	2,949,119
2nd level	1,305,625
3rd level	808,068
4th level	586,323
5th level	479,756
6th level	422,450
7th level	394,166
8th level	376,275
9th level	367,532
10th level	364,434

Source: Bureau van Dijk (2018).

Table B4: Financials and Ownership Orbis Data (2007 to 2015)

Matching variable	Distinct counts
Matched sample:	
GUOs	1,489,502
Firms	2,171,037
Baseline sample:	
GUOs	99,214
Firms	361,206

Source: Bureau van Dijk (2018).

least one majority-owned foreign affiliate. This is our final MNE sample from the GUO data, which includes 4,182,953 firms, 2,948,569 GUOs, and the respective first to tenth level subsidiaries. The median MNE group size is 94, where 2,487,542 MNEs have a group size of one, that is, they only consist of the firm and the GUO, and possibly subsidiaries.

Merge of Orbis Financial Account and Ownership Data

In a final step, we merge the time-invariant MNE ownership links data to the cleaned panel of financial account data. Table B4 reports the distinct counts of firms and GUOs for the matched sample. All reported counts of firms and GUOs are distinct values and vary by the number of observations per variable over time. We only keep firms for which at least two observations of the variables operating revenue, total assets and fixed assets are available. Furthermore, we only keep the observations of the matched sample, for which ownership and financial data is available.

For our baseline sample, we further restrict the dataset and drop firms with missing information on their GUO country (2,417,828 observations deleted). Furthermore, we drop firms with missing industry codes. We winsorize all our financial variables (e.g., pre-tax profits, fixed assets, operating revenue) at top and bottom 1 percentiles. Finally, we drop the year 2016 to avoid confounding effects related to the OECD's BEPS provisions and a transfer pricing reform in France in 2016. This leaves us with a baseline MNE sample of 361,206 firms and 99,214 GUOs. The firm coverage in host and home countries is reported below in Tables B6 and B7.

French Administrative Data

For a subset of our analyses we rely on French administrative data. We use corporate tax return data (BIC-RN: industrial and commercial profits - normal scheme) on the taxpayer-level, meaning either an independent company or a tax group head (Bach et al., 2019). The tax return data also includes financial information such as turnover, assets, and profits. We identify tax groups based on the PERIM dataset (produced by DGFiP), which determines parent companies and all members of a tax group based on the 2058TS form in France. Since a firm can change tax group membership status throughout the sample period, we construct the tax group identifier on an annual basis.

Table B5 presents the dataset creation steps for the administrative data. We start with the universe of individual corporate tax returns filed under the normal scheme (BIC-RN), yielding 8,517,735 observations over a period from 2007 until 2016. In addition, we use the tax group tax returns (FDG) for the same time period, giving us 284,954 observations. We assign an observation to a specific year based on the reported closing date in the tax return. All observations with closing dates until June 30 are assigned to the previous year, whereas all observations from July 1 onwards belong to the current year.

In a second step, we identify standalone firms based on whether they are member of a tax group in a specific year.[46] All firms which are part of a tax group also file an individual tax return. The group tax payment is split across all tax group firms, which report their fraction of the group tax in their individual tax return. However, the distribution of the group tax payment across all tax group members is at the tax group's discretion and does not necessarily follow any percentage distribution based on current or past profits. We therefore only use the group tax payment, as this most accurately reflects the tax paid in relation to the profits earned. We assign this tax payment to the head of the group and drop all other members of the tax group (with their individual tax return data) from our sample. After merging the tax group data with the standalone tax data and dropping all duplicate observations, we are left with 6,820,354 observations, representing 50,589 tax group and 1,273,032 standalone tax returns.

Finally, we merge the administrative dataset with our Orbis dataset from above. This step results in a final sample of 171,543 observations, thereof 2,165 tax groups and 28,659 standalone group returns. These firms are part of 9,991 multinational groups (as identi-

[46] We follow the procedure by Bach et al. (2019).

Table B5: Administrative Data Cleaning Steps

Step	Description	Firms			Observations			% of step 1
		stand-alone	tax groups	total	stand-alone	tax groups	total	
1	All individual and group tax return data from 2007-2016	-	-	-	8,517.735	284,954	8,802,689	100.00
2	Drop individual returns if part of tax group and drop duplicates	1,273,032	50,589	1,323,621	6,568,239	252,115	6,820,354	77.48
3	Merge with Orbis MNE dataset	28,659	2,165	30,824	148,236	23,307	171,543	1.95

Source: French Public Finances Directorate General (DGFiP).

fied by distinct GUO IDs). As with the Orbis data, we winsorize all financial variables at top and bottom 1 percentiles.

Coverage of French Firms in Orbis Data

Comparing Orbis sales data aggregated over all French firms in the manufacturing sector to official statistics, Kalemli-Özcan et al. (2024) report sales coverage rates above 80%. Following their methodology, we confirm that we observe similar coverage rates for French firms in our wave of the Orbis data. Table B8 reports the coverage rates per year.

Descriptive Statistics

Table B9 presents descriptive statistics for the French administrative data (Panel A) and Orbis (Panel B, for the worldwide data), separately for treated firms (last four columns in the table) and control firms (first four columns) in the table. The table presents descriptive statistics for our key firm outcome variables, information on firm characteristics (namely, the prevalence of low-tax affiliates/tax haven affiliates in the MNE group, with which the firm is affiliated, as well as unconsolidated turnover and total assets). The table, moreover, reports the maximum of the unconsolidated total assets and turnover of the considered firm, its parent and the majority-owned subsidiaries – which defines treatment: If this value is above 400 million EUR, the firm becomes subject to TP documentation requirements. See Section 3 for further details. Panel C, moreover, depicts descriptive statistics for the treated and control firms in the spillover analysis. Affiliates of MNE groups within the scope of the French TP regulations and with a French parent form the

Table B6: List of Host Countries

Country	Freq.	Country	Freq.	Country	Freq.
AL	121	GB	258,664	MU	144
AR	257	GR	16,286	MX	516
AT	25,110	GT	6	MY	3
AU	21,764	GY	9	NL	30,586
BA	6,238	HK	16	NO	89,032
BB	8	HR	17,765	NZ	5,028
BE	92,516	HU	21,137	PA	48
BF	7	ID	2,573	PE	686
BG	19,961	IE	28,020	PH	8,304
BM	12	IL	15	PK	273
BO	46	IN	31,757	PL	82,762
BR	2,977	IR	8	PT	62,545
CA	6	IS	1,333	PY	19
CH	685	IT	268,984	RO	74,664
CI	17	JM	21	RS	16,133
CL	585	JP	59,368	RU	140,175
CN	94,356	KN	8	SE	139,845
CO	20,917	KR	21,332	SI	14,673
CV	9	KV	28	SK	36,581
CY	946	KZ	1,603	SV	35
CZ	77,080	LB	6	TH	526
DE	131,639	LI	79	TN	9
DK	14,443	LK	276	TR	7,145
DM	9	LR	3	TT	26
DO	7	LT	11,377	TW	14,732
DZ	450	LU	20,560	UA	37,166
EC	232	LV	17,574	US	36
EE	14,866	MA	3,188	UY	421
ES	190,854	MC	8	UZ	3
ET	5	MD	153	VE	8
FI	38,427	ME	631	ZW	4
FR	299,663	MK	2,852		
GA	7	MT	8,814		

Notes: This table lists the number of observations per host country in the sample period from 2007 to 2015. The firms in the dataset are located in 97 different host countries.

Table B7: List of Home (GUO) Countries

Country	Freq.	Country	Freq.	Country	Freq.	Country	Freq.	Country	Freq.
AD	331	CR	143	IE	21,107	MK	811	SE	121,731
AE	4,204	CU	47	IL	7,321	ML	3	SG	7,100
AF	23	CV	56	IN	25,686	MN	46	SI	10,434
AG	9	CW	4,805	IQ	106	MO	227	SK	9,182
AI	194	CY	56,486	IR	475	MR	29	SL	24
AL	351	CZ	27,147	IS	1,896	MT	5,536	SM	607
AM	255	DE	212,256	IT	220,248	MU	1,706	SN	33
AO	325	DK	35,914	JM	85	MV	3	SO	9
AR	571	DM	297	JO	238	MX	2,776	SR	179
AT	49,493	DO	41	JP	118,311	MY	1,902	ST	46
AU	20,978	DZ	581	KE	22	MZ	9	SV	34
AW	35	EC	112	KG	73	NA	10	SY	483
AZ	219	EE	6,836	KH	33	NG	134	SZ	5
BA	2,435	EG	552	KI	13	NI	30	TG	14
BB	113	ER	7	KN	694	NL	78,285	TH	1,727
BD	59	ES	139,798	KP	109	NO	76,517	TJ	16
BE	69,435	ET	5	KR	16,758	NP	8	TM	38
BF	9	FI	37,436	KV	28	NR	4	TN	450
BG	7,364	FJ	8	KW	963	NZ	1,787	TR	10,230
BH	324	FR	248,112	KY	21,494	OM	293	TT	31
BJ	9	GA	31	KZ	2,116	PA	4,567	TW	21,813
BM	15,108	GB	178,892	LA	7	PE	414	TZ	42
BN	65	GE	193	LB	2,210	PG	14	UA	6,000
BO	24	GH	72	LC	18	PH	3,778	US	215,263
BR	3,776	GI	2,149	LI	6,263	PK	231	UY	286
BS	2,229	GM	18	LK	401	PL	23,169	UZ	279
BW	11	GN	13	LR	580	PS	19	VA	17
BY	2,508	GR	11,419	LT	7,760	PT	33,489	VC	301
BZ	2,165	GT	13	LU	73,533	PW	9	VE	270
CA	16,440	GW	19	LV	4,739	PY	17	VG	23,893
CG	73	GY	47	LY	253	QA	1,051	VN	109
CH	62,138	HK	9,373	MA	1,562	RO	5,704	WS	320
CI	64	HN	2	MC	1,041	RS	6,345	YE	10
CL	1,226	HR	9,090	MD	1,033	RU	56,101	ZA	3,202
CM	140	HT	12	ME	525	SA	1,271	ZW	4
CN	54,574	HU	13,972	MG	74	SC	4,954		
CO	11,429	ID	1,885	MH	1,032	SD	19		

Notes: This table lists the number of observations per home country in the sample period from 2007 to 2015. The GUOs in the dataset are located in 183 different home countries.

Table B8: Coverage of French Manufacturing Firms in Orbis

Year	Sales Coverage Ratio
2008	77.0 %
2009	73.4 %
2010	80.1 %
2011	82.8 %
2012	83.1 %
2013	87.8 %
2014	89.3 %
2015	91.4 %
2016	84.7 %

Notes: The Table reports aggregate operating revenue of all French manufacturing firms in Orbis data divided by operating revenue of French manufacturing firms in Eurostat SBS data. Firms in the manufacturing sector are indicated by NACE 2-digit industry codes between 10 and 33. The data are cleaned as in Kalemli-Özcan et al. (2024) dropping the following observations from the sample: consolidated account observations; observations with missing closing dates; firm-year level duplicates; firm-year level observations where total assets, employments and operating revenue are missing simultaneously; firms with negative total assets, employment, sales, or tangible fixed assets in at least one year. Sources: Eurostat Structural Business Statistics and Bureau van Dijk (2018).

treatment group. All entities with no ownership connection to France enter the control group. Variable definitions correspond to Panels A and B.

Figure B1 shows that treated and control firms are comparable in key characteristics, namely in their industry and parent country composition. Figure B2, moreover, provides a graphical depiction of the worldwide group network of multinational firms that are headquartered in France and treated by the TP documentation provisions: the graph shows the number of treated affiliates of French global ultimate owners per country, relative to countries' GDP. The figure indicates that treated French MNEs are strongly represented in Europe, other OECD countries and some former French colonies like Morocco.

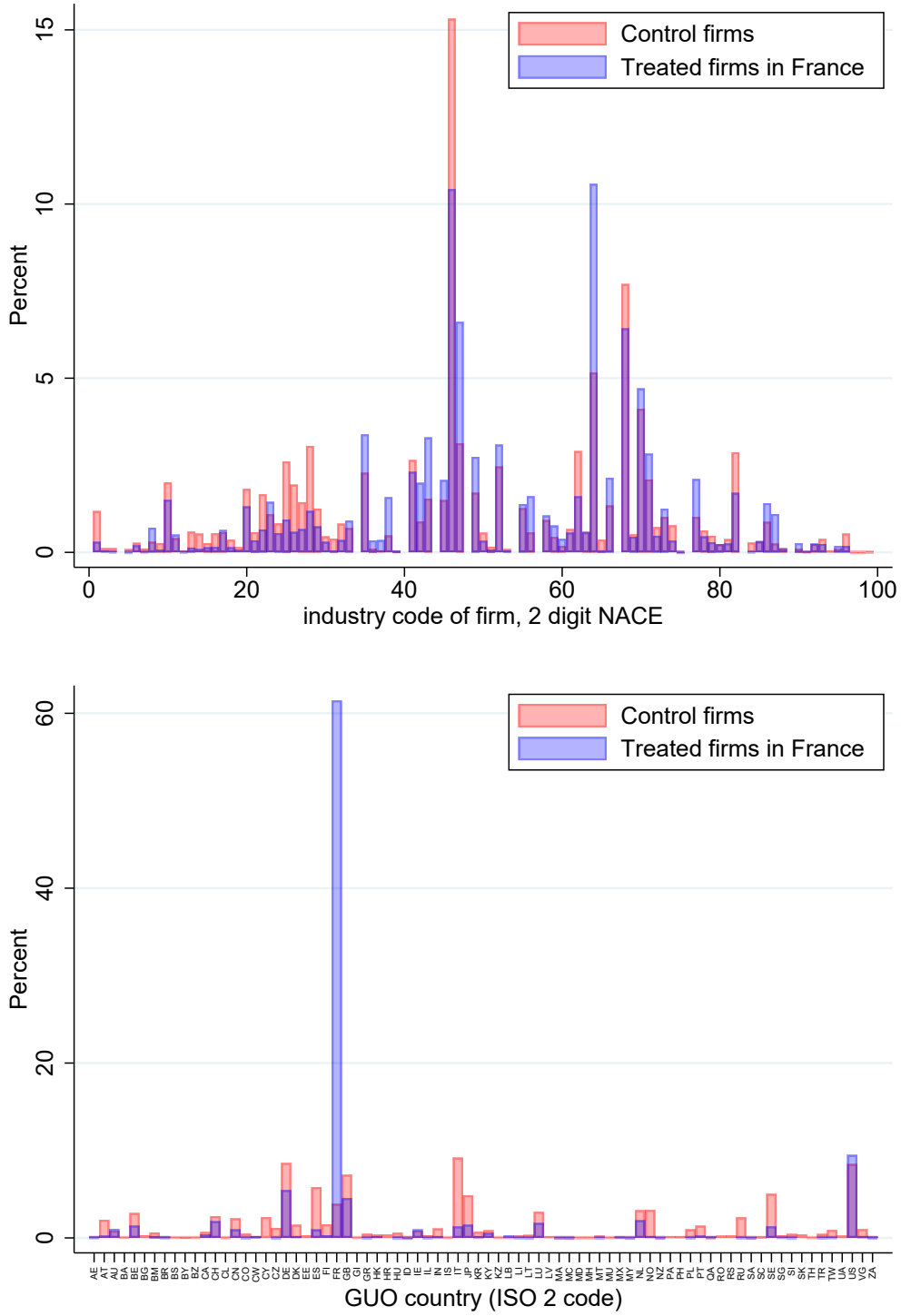
Table B9: Summary Statistics

	Control				Treatment			
	Observations	Mean	Std. Dev.	Median	Observations	Mean	Std. Dev.	Median
Panel A: Analysis of Direct Effects - French Admin Data								
Tax payments/assets	98106	0.014	0.029	0.002	64330	0.012	0.028	0.000
Zero-tax indicator	98106	0.414	0.493	0.000	64330	0.521	0.500	1.000
Asinh(tax payments)	99084	2.375	3.763	2.658	65162	2.558	3.905	0.000
ETR	80670	0.242	0.244	0.185	54869	0.203	0.246	0.010
GTR	85850	0.245	0.236	0.206	55172	0.235	0.238	0.180
Long-run GTR	70369	0.293	0.234	0.313	45257	0.280	0.239	0.303
Min. group tax rate	98106	0.211	0.099	0.212	64330	0.061	0.089	0.000
Tax haven in group	98106	0.490	0.500	0.000	64330	0.922	0.268	1.000
Unconsolidated turnover	98106	19043	53529	4968	64330	207375	2194526	6322
Unconsolidated total assets	98106	30027	260889	5536	64329	678460	8647452	11039
Group max turnover/assets	98106	78018	96221	35040	64330	19552938	46434390	4068615
Panel B: Analysis of Direct Effects - Orbis Data								
Tax payments/assets	2032834	0.017	0.034	0.007	151972	0.016	0.036	0.000
Zero-tax indicator	2032834	0.277	0.448	0.000	151972	0.437	0.496	0.000
Ln(fixed assets)	2031829	7.478	3.148	7.867	151970	7.730	3.362	7.897
Min. group tax rate	2032834	0.136	0.104	0.160	151972	0.054	0.085	0.000
Tax haven in group	2032834	0.575	0.494	1.000	151972	0.935	0.246	1.000
Unconsolidated turnover	2032834	82910	1054214	6104	151972	94829	897911	6589381
Unconsolidated total assets	2032834	157969	3111986	8122	151972	222607	2231091	10258
Group max turnover/assets	2032834	5779637	33131911	94241	151972	19555268	38835524	4746354
Panel C: Analysis of Indirect Effects - Orbis Data								
Tax payments/assets	1097420	0.024	0.033	0.013	51918	0.021	0.037	0.010
Zero-tax indicator	1097420	0.191	0.393	0.000	51918	0.220	0.414	0.000
Ln(fixed assets)	1172537	7.320	3.101	7.728	57413	7.801	3.171	8.134
Min. group tax rate	1172537	0.156	0.095	0.170	57413	0.037	0.068	0.000
Tax haven firm	1172537	0.017	0.128	0.000	57413	0.029	0.168	0.000
Unconsolidated turnover	1172537	68241	738280	6557	57413	84489	495532	12296
Unconsolidated total assets	1172537	120414	2636840	7251	57413	158287	1259346	13818
Group max turnover/assets	1172537	1574064	13478516	49995	57413	28319900	33785249	12585812

Sources: French Administrative Data. Bureau van Dijk's Orbis database.

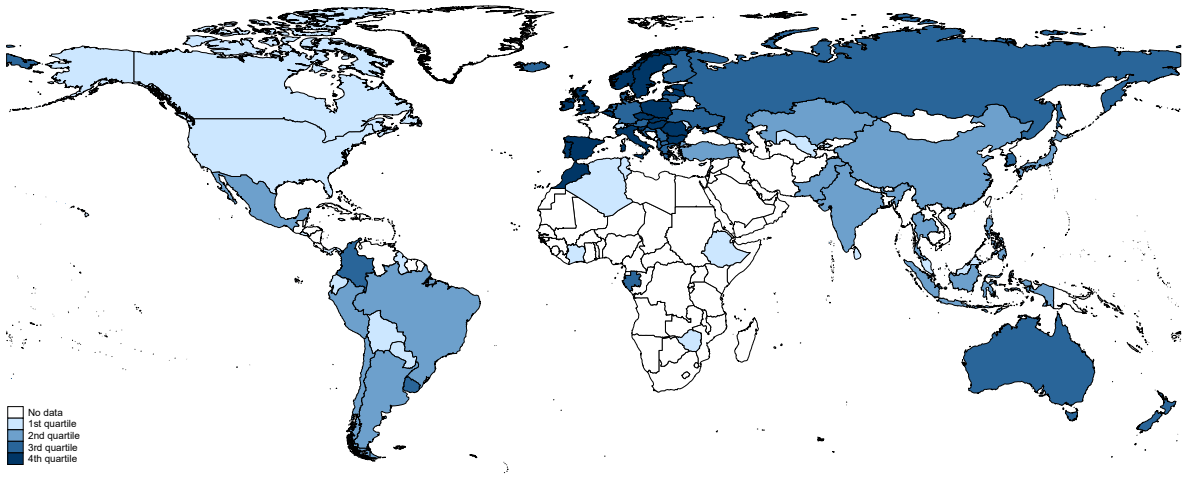
Notes: The zero-tax indicator equals 1 if tax payments divided by total assets range between -0.002 and 0.002 in the considered year, otherwise zero. The ETR is the effective tax rate measured as tax payments over accounting profit. We replace positive values with missing if both numerator and denominator are negative. The GTR provides the gross tax rate, which is the firms' tax rate prior to deductions and tax credits (Bach et al., 2019). The long-run GTR is a three-year-average of the gross tax rate and is less sensitive to negative shocks to profitability (Dyreng et al., 2008). All tax rate measures use the accounting profits in the denominator and are restricted to values between 0 and 1. Asinh(tax payments) is an inverse hyperbolic sine transformation of tax payments to gain a quasi-logarithmic form in the presence of zero values. The minimum group tax rate gives the minimum statutory corporate income tax rate in the MNE per year. Tax haven in group is a dummy variable indicating whether MNEs have a tax-haven affiliate or not (based on the list by Dharmapala and Hines, 2009). Tax haven firm is a dummy variable indicating whether the firm is located in a tax haven or not (based on the list by Dharmapala and Hines, 2009). Unconsolidated turnover and total assets are measured in thousand EUR. All financial and tax variables are winsorized at the first and 99th percentile.

Figure B1: Treated and Control Firms by Industry and GUO Country



Notes: The figure shows the distribution of treated and control countries by industry (2-digit NACE codes) and by GUO country. Note that only GUO countries with more than 1,000 observations are displayed.

Figure B2: Foreign Treated Affiliates Worldwide



Notes: The figure depicts the number of foreign affiliates per host country that belong to MNEs with a global ultimate owner in France and are treated by the introduction of TP documentation rules in France, normalized on countries' GDP.

C Additional Results Appendix

This Appendix presents additional analyses that complement our findings in the main text.

Pre-Analysis – Profit Shifting

As explained in the main text, we use our data to study profit shifting by multinational firms. Specifically, we run a standard profit shifting equation of the following form:

$$log(EBIT_{it}) = \eta_i + \theta\tau_{ict} + \gamma X'_{it} + \lambda Z'_{ct} + \rho_{kt} + \epsilon_{it}, \tag{1}$$

where $EBIT_{it}$ denotes the unconsolidated earnings before interest and tax of firm i at time t, τ_{ict} depicts the tax rate differential between the corporate tax rate of firm i's host country c at time t to other group affiliates, calculated as the weighted average corporate tax rate at foreign group affiliates (weighted by the time-constant share of group affiliates per country). The specification further includes firm level input factor controls—the log of fixed assets and the log of firms' wage costs—as well as a vector of country control variables (GDP, GDP per capita, GDP growth and population). η_i represents a full set of firm fixed effects and ρ_{kt} is a full set of 2-digit industry-year fixed effects.

The results are presented in Table C1. Specification (1) presents the baseline estimates. Consistent with prior evidence, we find a negative and sizable estimate for θ, indicating

that firms reduce their reported profit when the corporate tax rate differential increases.

In Column (2), we allow the effect to vary across firms that belong to MNEs with and without tax haven affiliates; in Column (3) across firms with above and below median firm size. Column (4) allows the effect to vary between firms that belong to MNEs with and without patent holdings (i.e. successful patent applications to the European Patent Office or another patent office within our sample frame, which is retrieved by a link between Orbis and the administrative PATSTAT database that comprises the universe of patent applications to the European Patent Office and all major national patent offices worldwide during our sample frame).

As spelled out in the main text, we find that the tax sensitivity of reported profits is larger in MNEs with a tax haven connection, in MNEs with above median size and in MNEs with patent activity, consistent with larger income shifting activity in these types of MNEs.

Direct Effect – Robustness Checks

In the following subsection, we present a number of robustness checks for the main analysis, where we determine the impact of the introduction of TP documentation requirements in France on firm outcomes of treated firms in France.

Table C2 extends the heterogeneity analysis in the main text by testing for potential effect heterogeneity between larger firms (with above median unconsolidated total assets) and smaller firms (with below median unconsolidated total assets). It shows that larger firms exhibit a stronger reaction to the reform than their smaller counterparts – in the tax reporting and in the asset dimension. This is consistent with our results in Table C1, where we find that large MNEs engage in systematically larger profit shifting than smaller entities. In addition, Figure C1 presents dynamic DiD estimates for both heterogeneity analyses (cf. Tables 4 and C2), corroborating our baseline findings.

In further robustness checks, we rerun the base analyses in Table 2 in the main text with an alternative definition of close-to-zero-tax reporting, relying on cutoff value of -/+0.001 and -/+0.003 of tax-over-assets respectively. The results are presented in Table C3 and qualitatively resemble our baseline estimates; the absolute effect size decreases (increases) for wider (smaller) cutoff bands around zero tax-to-asset ratios, in line with intuition.

Figure C2, moreover, presents additional dynamic DiD estimates – in specifications where we rely on the Orbis data and the dependent variables are the indicator for close-to-zero-tax reporting and the log-transformed fixed assets respectively (analogously to Figures 3 and 4 in the main text). Figure C2 shows that the base findings are robust to a number of modifications of the estimation model: restriction of control firms to entities in France; and in the worldwide sample, modeling the firm-size-year fixed effects by firm-size-deciles rather than firm-size-ventiles, as well as excluding firms outside of France whose host or home countries enacted a corporate tax reforms during the reform year of the full sample frame.

Additional checks in Figure C3 indicate that our findings are robust to excluding different sets of control regressors from the estimation model. Figure C4, moreover, shows that statistical significance of our estimates prevails when we alter assumptions on the correlation structure of the errors. While the base analyses allow for serial correlation, Figure C4 shows that estimates of standard errors and confidence bounds are similar when we account for clustering at the level of the parent firm and at the 2-digit-industry level. While confidence bands get somewhat larger, the estimates remain statistically significant at conventional significance levels.

Table C4 furthermore presents results from robustness checks, where we rerun our baseline model with a normalized dependent variable. In Specification (1), the dependent variable is the close-to-zero-tax indicator calculated based on a tax-over-asset ratio, which is normalized on the pre-reform mean of total assets. In Column (2), the dependent variable is the close-to-zero-tax indicator calculated based on a tax-over-asset ratio, which is normalized on lagged total assets. In Column (3), the dependent variable is net investments, calculated as change in fixed assets excluding depreciation expenses, which is normalized on the pre-reform mean of total assets. In Column (4), the dependent variable is firms' net investments, which is normalized using lagged total assets. Control variables are included as described in the main text and the table notes. Again, the estimates qualitatively and quantitatively resemble our baseline findings.

We also ran robustness analyses in restricted samples, designed to make treatment and control group more comparable. Columns (1) to (4) of Table C5 present results from specifications, where the dependent variable is the zero-tax reporting indicator; in Columns (5) to (8) the dependent variable is firms' fixed assets. In Columns (1) and (4), we show

results for a bandwidth of +/- 100 million around the treatment threshold (based on the largest group affiliate, i.e. between 300 million and 500 million). In Columns (2) and (5), we exclude firms where the largest group member is larger than the median of the treatment group. In Columns (3) and (7), we exclude firms below the 10th and above the 90th percentile of the firm size distribution. Columns (4) and (8) report results where we exclude the lower and upper quartiles of the firm size distribution (measured by the maximum of firms' turnover and total assets in the pre-period (2007-2009)). All specifications do not alter our baseline findings.

Tables C6 and C7, moreover, show that estimates in these restricted samples are also robust to the sensitivity analyses presented in the main text. Specifically, the tables indicate that, in the restricted sample (bandwidth -/+100 million EUR around the threshold), the estimated effect of TP documentation rules on firms' zero-tax reporting (cf. Table C6) prevails in the tax administrative data as well as in Orbis and is robust to adding various control regressors (namely, industry-year, parent country-year and firm-size-year fixed effects) as well as to excluding observations of foreign firms with host or home countries, which experienced substantive corporate tax changes. Table C7 presents analogous results for models, where the dependent variable is firms' fixed asset investment. Last but not least, Figure C5 depicts estimates from dynamic DiD models in a restricted firm sample with a bandwidth of -/+100 million EUR around the threshold, again corroborating our baseline findings.

We further augmented our analysis by several placebo tests in Table C8. In a first set of tests, we shift the treatment forward in time. This yields coefficient estimates, which are close to zero and do not gain statistical significance, both, in specifications, where the dependent variable is firms' fixed assets as well as in specifications, where the dependent variable is the zero-tax indicator (cf. Columns (1) to (4)). In a second set of tests, we reclassify treatment to lower thresholds (EUR 100 million and EUR 250 million respectively), while dropping firms, which are actually treated by the newly introduced TP documentation rules (and assuming treatment to take place in 2010 as with the actual treatment). Again, this yields small coefficient estimates, which do not gain statistical significance (cf. Columns (5) to (8)).

Moreover, we investigate the sensitivity of our findings to the definition of treatment status. As discussed in Section 5, the main analysis assigns treatment status based on

any available pre-reform year (2007–2009). This ensures that we capture firms' structural characteristics prior to the reform, while maximizing sample size. Treatment assignment is thereby fixed over time: once a firm is classified as treated or control based on its status in the pre-reform period, this classification remains constant throughout the post-reform period. Figure C6 illustrates how treatment status evolves over time when treatment is assigned on an annual basis rather than being fixed. It visualizes the share of correctly classified firms, i.e. firms that do not switch their treatment status (blue), as well as the share of misclassifications due to fixed treatment assignment (red and orange). Throughout the entire post-reform period, over 99.7% of firms are correctly classified according to their pre-reform group status.

Tables C9 and C10 present the baseline results (cf. Tables 2 and 5 in the main text) excluding all firms that change treatment status between the pre- and post-reform periods—either from treatment to control or vice versa. The results are very similar to our baseline estimates. In addition, Table C11 presents estimates of the reform effects on the propensity to pay zero tax and on fixed assets when using an instrumental variable approach. The variable of interest then becomes the actual treatment status in post-reform years, which is instrumented by the treatment status indicated by firm characteristics in the pre-reform period interacted with an indicator variable for the post-reform period. The F-statistic of this instrument in the first stage regressions is in all cases above 90,000 which reflects the instrument's high predictive power. In all cases, the IV estimates are very similar to the estimates directly based on the pre-reform treatment status.

Furthermore, note that the main concern for the empirical analysis is that there may be confounding policy events in the France, which may exert a differential impact on larger and smaller firms in France. As described in the main text, one potential confounder might be a reform of the R&D tax credit system, which was enacted in 2008 and thus prior to our treatment. We offer robustness checks in the main text, which suggest that our estimates are not driven by changes in the respective tax credits. A second potential confounding reform are tax changes enacted in 2013 (see the main text for details). Columns (1) and (2) of Table C12 show that our findings remain largely unchanged when we drop years after 2012 and 2013 respectively, which corroborates that our findings are not driven by the respective tax reform.

We furthermore assess if other salient size thresholds may act as a confounder in the

analysis. In particular, various legal obligations in terms of social dialogue, profit sharing and accounting apply to French companies when they reach the threshold of 50 employees (see, e.g., Gourio and Roys, 2014; Garicano et al., 2016; Askenazy et al., 2022; Aghion et al., 2023). Moreover, various policies and regulations differentiate between small and medium enterprises (SMEs) and larger firms. In Table C12, we show that our findings are robust to non-parametrically absorbing differences in outcome trends between French firms with more or less than 50 employees and between firms that are subject to SME regulations vs those that are not.

Finally, Table C13 shows that our results hold when only considering profitable firms. The treatment effects on zero-tax reporting stay negative and statistically significant. For the (long-term) gross tax rate (see last two columns), we can also confirm the positive and statistically significant effect identified in the baseline model.

Size of the Direct Effect

In the base analysis, we discuss that our findings imply non-negligible tax reporting and investment responses. Note that our estimates further imply that firms' effective tax rate increases by 0.0100 (cf. Column (2) of Table 3) or around 5% evaluated at the sample mean (0.203). This estimate is smaller than the effect identified in related papers on other reforms with the aim to constrain tax misreporting behavior. Edwards et al. (2024), who study the introduction of new mandatory reporting requirements for a wide range of cross-border tax arrangements in the European Union (EU Directive 2018/822, also known as DAC6) find that 'DAC6' increased cash ETR by around 2 percentage points.

The quantitative interpretation of treatment-induced shifts in effective tax rates is thorny, however, as we rely on unconsolidated, rather than consolidated ETRs (– treated firms are large worldwide-operating MNEs, implying that TP rule tightenings at French business locations are hardly expected to have a meaningful impact on group-level ETRs).

Using the firms' *unconsolidated* gross tax rate in France – defined as gross tax payments over accounting profits – however, comes with the complication that both, the numerator and the denominator may be impacted by the anti-profit shifting regulation: if tighter transfer pricing regulations limit transfer mis-pricing and profit relocation from France, this translates into higher tax payments but also in higher accounting profits, complicating the interpretation of the shifts in the effective tax measure. As illustrated in Appendix

Section A.3, theoretical considerations still point to a positive response, consistent with our empirical findings.

Relating the estimated investment effect (cf. Column (3) of Table 5) to our estimated effect on gross tax rates (cf. Column (3) of Table 3) yields a semi-elasticity of 2.77. This is within the upper range of the previous literature (see, e.g., de Mooij and Ederveen, 2003; Feld and Heckemeyer, 2011; Zwick and Mahon, 2017, Ohrn, 2018). Note, however, that the existing literature commonly derives fixed asset elasticities with respect to changes in statutory corporate tax rates or forward-looking effective tax rates, while we rely on a backward-looking ETR. Prior evidence suggests that 1 percentage point shift in the statutory corporate tax rate does not necessarily translate into a 1 percentage point shift in firms' backward-looking ETR. For the TCJA reform in the US, Dobridge et al. (2023) e.g. report that the effective tax rate drops by 0.36 to 0.5 for every 1 percentage point decrease in the statutory corporate tax rate. Dyreng et al. (2023) find somewhat larger decreases in ETR (on worldwide income) after the TCJA, suggesting that the ETR declines by 0.79 to 0.93 percentage points per 1 pp decrease in the statutory corporate tax rate. This may elevate the fixed asset elasticity in our setting relative to prior work – as may the muting of the ETR shift through the denominator-response, as explained above. The fixed asset response may, moreover, not only relate to the shift in firms' tax costs but also to additional compliance burdens related to TP documentation, as illustrated in Section 2 and the theoretical model in Appendix A.3. The estimated elasticity is thus an upper bound to the true underlying parameter.

Spillover Effect

In the spillover analysis, the main text shows a negative investment effect at low-tax locations (with a tax rate equal to or below 12.5%), but no significant effect at high-tax locations (with a corporate tax rate above 12.5%). In Figure C7, we assess the sensitivity of our findings to alternative assumptions on the correlation structure of the error terms, allowing for clustering at the GUO level or industry level respectively. This leaves the statistical significance of the results largely unchanged.

In additional checks, Specifications (1) to (4) of Table C14 reestimate the model in Specifications (3) and (6) of Table 6, excluding firms which were exposed to corporate tax rate changes or changes in anti-avoidance rules in 2010 or during the full sample period (2007

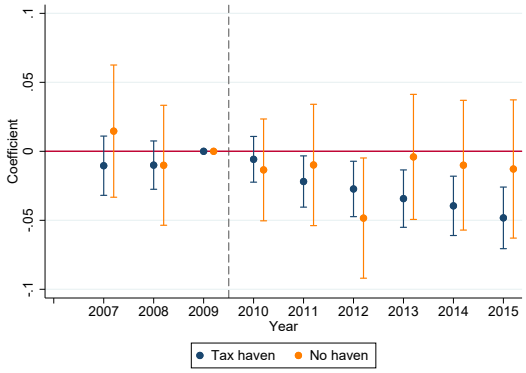
to 2015) in their home or host country. Specifications (1) and (2) restrict the sample to foreign firms with a corporate tax rate equal to or below 12.5%, while Specifications (3) and (4) limit the sample to firms with a corporate tax rate above 30%. The results again remain largely unchanged for both low-tax and high-tax affiliates.

Table C1: Profit Shifting Analysis

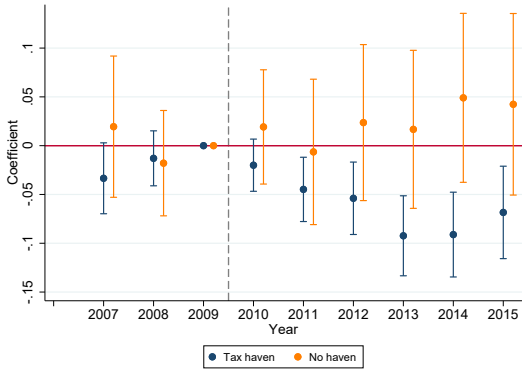
	(1) Baseline	(2) Tax haven	(3) Firm size	(4) Patents
Tax rate differential foreign affiliates	-0.687***			
	(0.0587)			
Ln(fixed assets)	0.0686***	0.0687***	0.0657***	0.0686***
	(0.00183)	(0.00183)	(0.00192)	(0.00183)
Ln(employee costs)	0.442***	0.442***	0.433***	0.442***
	(0.00397)	(0.00397)	(0.00431)	(0.00397)
Haven aff.=0 x Tax rate diff.		-0.237***		
		(0.0849)		
Haven aff.=1 x Tax rate diff.		-1.072***		
		(0.0802)		
Large=0 x Tax rate diff.			-0.442***	
			(0.0893)	
Large=1 x Tax rate diff.			-0.899***	
			(0.0820)	
Patent group=0 x Tax rate diff.				-0.449***
				(0.0738)
Patent group=1 x Tax rate diff.				-1.117***
				(0.0944)
Controls	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
N	1182695	1182695	1055882	1182695

Notes: The table presents estimates of a regression model estimated with OLS. The dependent variable is the log of unconsolidated earnings before interest and tax (EBIT), retrieved from Orbis. Control variables are included as indicated in the main text and the table. The regressor of interest is the weighted tax rate differential with foreign affiliates, which is interacted with different dummy variables in specifications (2)-(4). Column (1) presents the baseline estimate. In column (2), the tax rate differential is interacted with a tax-haven-affiliate indicator. In column (3), the tax rate differential is interacted with a firm-size indicator, which equals 1 if the firm is above median firm size (measured by average pre-period unconsolidated total assets), otherwise zero. In column (4), the tax rate differential is interacted with a patent indicator. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

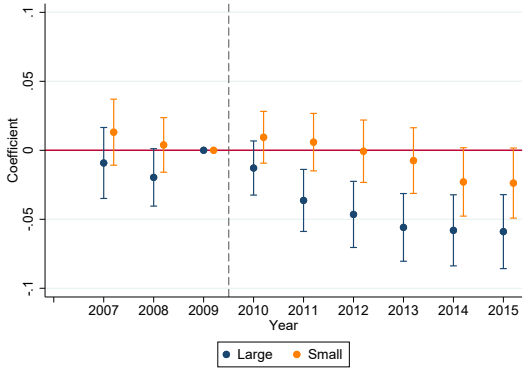
Figure C1: Reform Effect on Firms in France - Heterogeneity



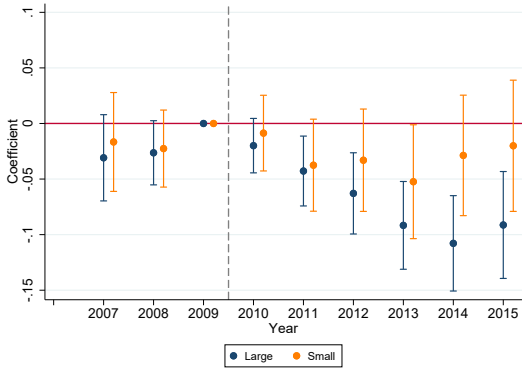
(a) Close-to-Zero-Tax Reporting



(b) Fixed Assets



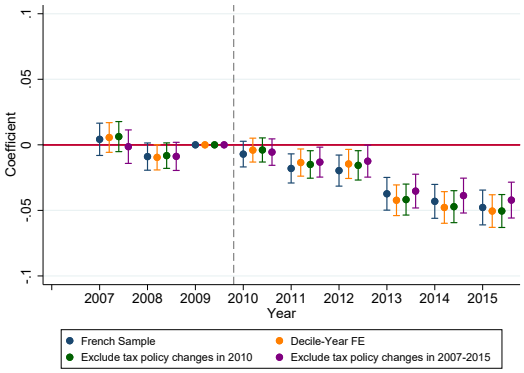
(c) Close-to-Zero-Tax Reporting



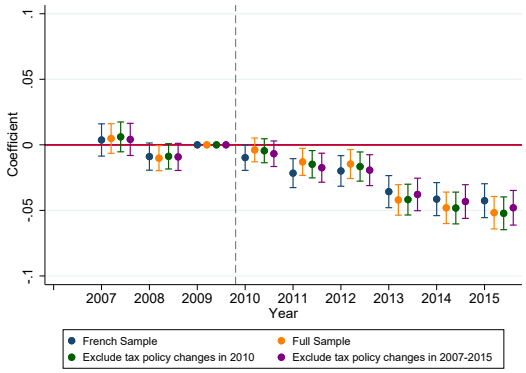
(d) Fixed Assets

Notes: The figures show dynamic DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets (using French administrative data, Panels (a) and (c)) and logarithmized fixed assets (using Orbis data, Panels (b) and (d)) in France. The graphs depict point estimates and 95% confidence intervals. Panel (a) reestimates Columns (1) and (2) of Table 4. Panel (b) reestimates Columns (5) and (6) of Table 4. In both Panels, the blue symbols present estimates for firms with a tax haven affiliate in the group and the orange symbols present estimates for firms without a tax haven affiliate in the group. Panel (c) reestimates Columns (1) and (2) of Table C2. Panel (d) reestimates Columns (5) and (6) of Table C2. In both Panels, the blue symbols present estimates for large firms (above median firm size) and the orange symbols present estimates for small firms (below median firm size). Firm size is measured by average pre-period unconsolidated total assets.

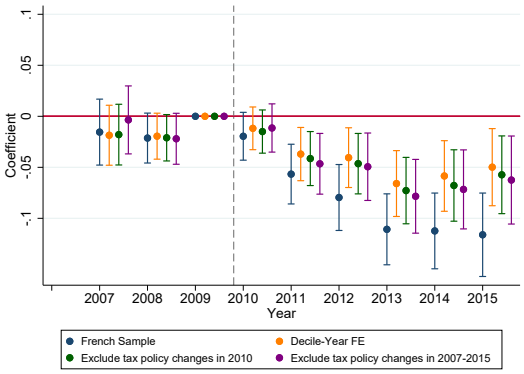
Figure C2: Reform Effect on Firms in France - Robustness Sample



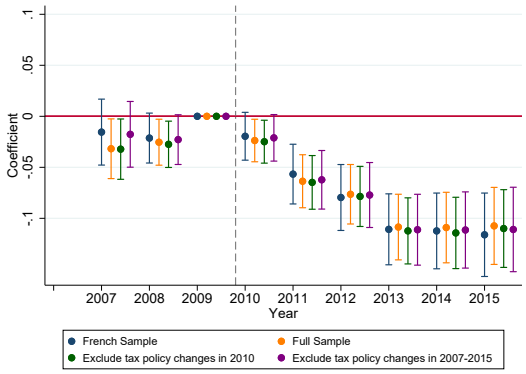
(a) Close-to-Zero-Tax Reporting (with size-year FE)



(b) Close-to-Zero-Tax Reporting (without size-year FE)



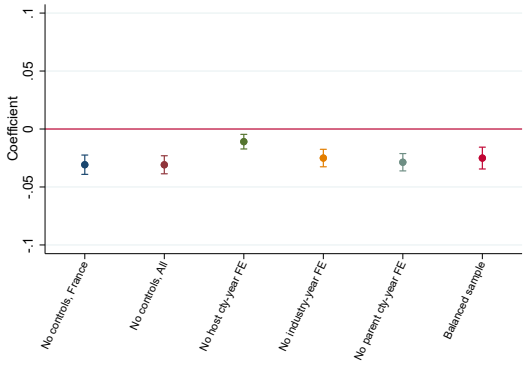
(c) Fixed Assets (with size-year FE)



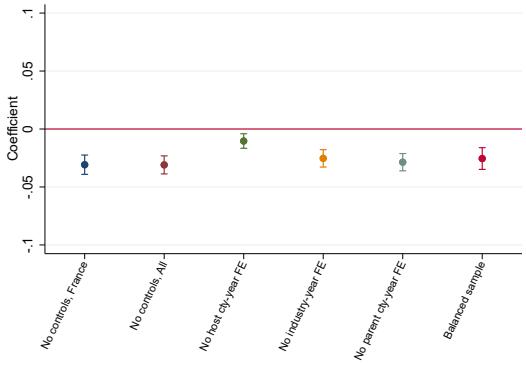
(d) Fixed Assets (without size-year FE)

Notes: The figures show dynamic DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets (Panels (a) and (b)) and logarithmized fixed assets (Panels (c) and (d)) in France (all use Orbis data). The graphs depict point estimates and 95% confidence intervals. The specifications control for firm fixed effects, parent-country-year fixed effects, and industry-year fixed effects, as well as the firm-level controls described in the main text. The orange, green, and purple symbols depict estimates from specifications, where we additionally control for host-country-year fixed effects. Panels (a) and (c) additionally control for firm size-year fixed effects. In all four panels, the blue symbols depict the baseline estimates: the set of control firms is restricted to entities in France (the corresponding static model estimates are reported in Column (2) of Table 2 and Column (1) of Table 5). In Panels (a) and (b), the orange symbols control for decile-year fixed effects instead of ventile-year fixed effects. In Panels (b) and (d), the orange symbols depict the main results without including size-year effects, referring to the static DiD results in Column (3) of Table 2 and Column (2) of Table 5. In all four panels, the green and purple symbols show robustness checks, where we expand the sample to also include control firms outside France, and the sample is restricted to countries without major corporate tax reforms or reforms in anti-profit shifting regulations in 2010 (green symbols) or in 2007-2015 (purple symbols).

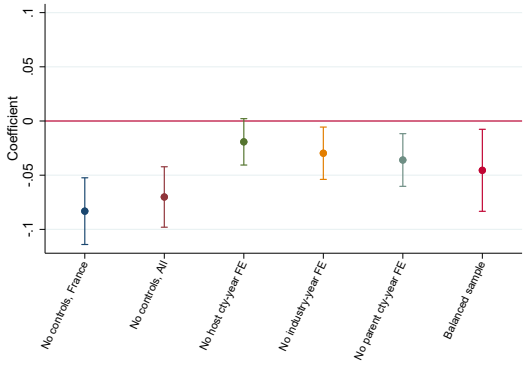
Figure C3: Reform Effect on Firms in France - Robustness Controls and Fixed Effects



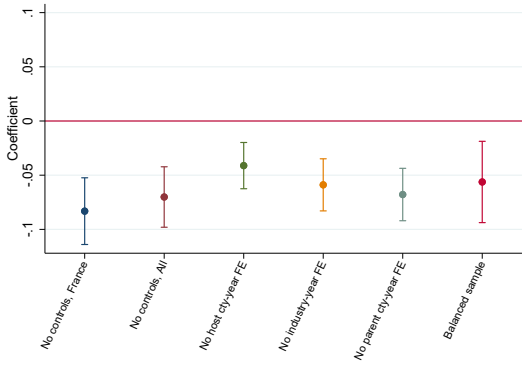
(a) Close-to-Zero-Tax Reporting (with size-year FE)



(b) Close-to-Zero-Tax Reporting (without size-year FE)



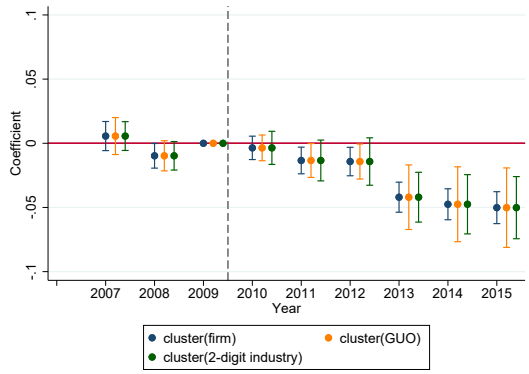
(c) Fixed Assets (with size-year FE)



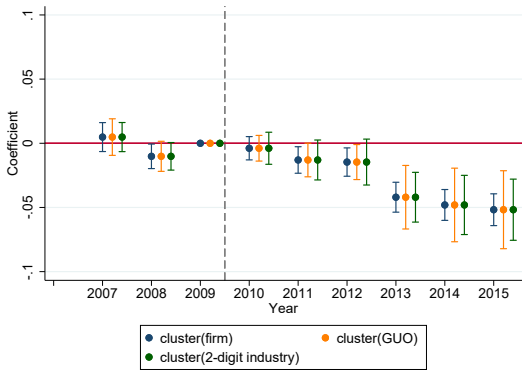
(d) Fixed Assets (without size-year FE)

Notes: The figures show static DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets (Panels (a) and (b)) and logarithmized fixed assets (Panels (c) and (d)) in France (all use Orbis data). The figure presents robustness results with respect to the inclusion of control variables, the inclusion of different sets of fixed effects, and using a balanced sample. If not otherwise indicated, all Specifications include control variables and fixed effects as indicated in the main text. Panels (a) and (c) additionally control for firm size-year fixed effects. All symbols indicate the coefficient of the *treat* × *post* regressor indicating treated firms (within the scope of the French TP documentation rules) after treatment. Point estimates and 95% confidence intervals are depicted. The blue symbols depict the results of a reestimation of Specifications (2) of Table 2 and Specifications (1) of Table 5 without the inclusion of control variables. All following symbols depict the results of a reestimation of Specification (3) of Table 2 and Specifications (2) of Table 5. The red symbols depict the results without the inclusion of control variables. The green symbols depict the results without the inclusion of host country-year fixed effects. The orange symbols depict the results without the inclusion of industry-year fixed effects. The teal symbols depict the results without the inclusion of parent country-year fixed effects. The last specification (crimson) reestimates the main results in a balanced sample.

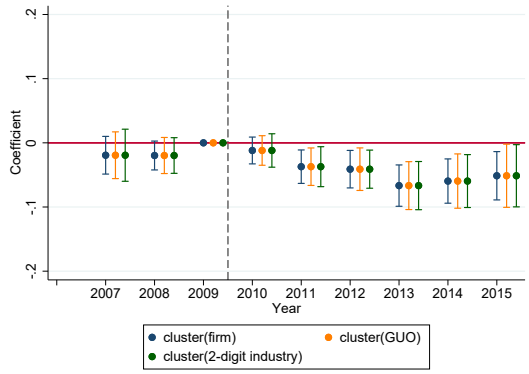
Figure C4: Reform Effect on Firms in France - Alternative Clustering



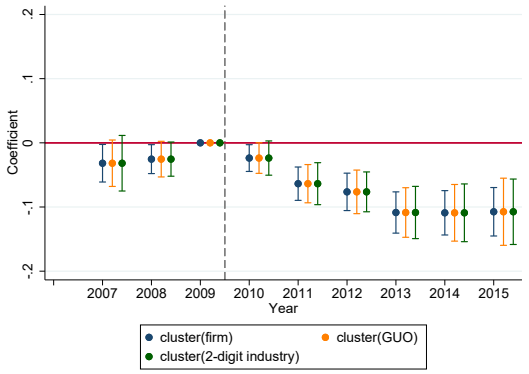
(a) Close-to-Zero-Tax Reporting (with size-year FE)



(b) Close-to-Zero-Tax Reporting (without size-year FE)



(c) Fixed Assets (with size-year FE)



(d) Fixed Assets (without size-year FE)

Notes: The figures show dynamic DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets (Panels (a) and (b)) and logarithmized fixed assets (Panels (c) and (d)) in France (all use Orbis data). The figures present a re-estimation of the main results using different clustering of fixed effects: blue symbols represent the main results (clustering at the firm level), orange symbols present results clustering the standard errrors at the GUO-level and green symbols present results clustering at the 2-digit industry-level. The graphs depict point estimates and 95% confidence intervals. All specifications control for firm fixed effects, parent-country-year fixed effects, host country-year fixed effects, and industry-year fixed effects, as well as the firm-level controls described in the main text, thereby re-estimating the results in Column (3) of Table 2 and Column (2) of Table 5. Panels (a) and (c) additionally control for firm size-year fixed effects, re-estimating the results in Column (4) of Table 2 and Column (3) of Table 5. Point estimates and 95% confidence bounds depicted.

Table C2: Reform Effect on Firms in France - Size Heterogeneity

	Zero-tax		GTR		Ln(FIAS)	
	(1) Large	(2) Small	(3) Large	(4) Small	(5) Large	(6) Small
treat x post	-0.0337***	-0.0100	0.0216***	-0.000716	-0.0485***	-0.0168
	(0.00811)	(0.00779)	(0.00436)	(0.00421)	(0.0160)	(0.0196)
Controls	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes	yes	yes
Parent cty-year FE	no	no	no	no	yes	yes
Firm size-year FE	no	no	no	no	yes	yes
N	62368	89945	51638	80162	714482	720921

Notes: The table presents estimates of a static DiD regression model. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text. Columns (1) and (2) use the zero-tax indicator as dependent variable (from administrative tax return data for tax groups and standalone firms in France). Columns (3) and (4) use the gross tax rate as dependent variable (from administrative tax return data for tax groups and standalone firms in France). Columns (5) and (6) use the natural logarithm of fixed assets as dependent variable (from unconsolidated financial reports from the Orbis database). The different specifications limit the sample as follows: Columns (1), (3), (5): large firms (if the firm is above median firm size), Columns (2), (4), (6): small firms (below median firm size). Firm size is measured by average pre-period unconsolidated total assets. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C3: Reform Effect on Close-to-Zero-Tax Payments Firms in France - Alternative Zero-Tax Cutoffs

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	France	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
Data	Admin	Orbis	Orbis	Orbis	Orbis	Orbis
Panel A: Zero-tax cutoff at -/+ 0.001 tax payments/total assets						
treat x post	-0.0305***	-0.0306***	-0.0327***	-0.0327***	-0.0336***	-0.0224***
	(0.00550)	(0.00406)	(0.00379)	(0.00379)	(0.00383)	(0.00418)
Panel B: Zero-tax cutoff at -/+ 0.003 tax payments/total assets						
treat x post	-0.0191***	-0.0225***	-0.0213***	-0.0216***	-0.0233***	-0.0192***
	(0.00557)	(0.00417)	(0.00390)	(0.00392)	(0.00396)	(0.00430)
Controls	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	no	yes	yes	yes
N	162436	298572	2184806	1848024	1334927	292668

Notes: The table presents estimates of a static DiD regression model. The dependent variable is a zero-tax indicator, which equals 1 if a firm has a ratio of tax payments to total assets between -0.001 and 0.001 (Panel A) or -0.003 and 0.003 (Panel B), otherwise zero. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. Column (1) uses administrative tax return data for tax groups and standalone firms in France. Column (2) uses unconsolidated financial reports for French firms from the Orbis database. Columns (3)-(6) also use unconsolidated financial reports from Orbis. Column (3) estimates the specification for the extended sample of firms in France and in other countries. Column (4) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (5) and (6) exclude firms where there was a tax rate change or change in anti-profit shifting rules in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C4: Reform Effect on Firms in France - Robustness Normalization

	(1)	(2)	(3)	(4)
Outcome	Zero-tax	Zero-tax	Net investment	Net investment
Data	Orbis	Orbis	Admin	Admin
Normalization assets	Pre-mean	Lagged	Pre-mean	Lagged
treat x post	-0.0254***	-0.0268***	-0.00801***	-0.0157***
	(0.00419)	(0.00389)	(0.00247)	(0.00389)
Min. group tax rate	0.0656**	-0.00156	0.00245	0.0467
	(0.0325)	(0.0271)	(0.0782)	(0.0685)
Ln(turnover)	-0.0396***	-0.0566***	0.00634***	-0.00964***
	(0.000474)	(0.000398)	(0.00227)	(0.00276)
Loss indicator	0.0698***	0.0683***		
	(0.00105)	(0.000954)		
Profitability			-0.200***	-0.196***
			(0.0171)	(0.0191)
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Host cty-year FE	yes	yes	no	no
Parent cty-year FE	yes	yes	yes	yes
Firm size-year FE	yes	yes	no	no
N	1592964	1846528	130860	137055

Notes: The table presents estimates of static DiD regressions. The regressor of main interest is $treat \times post$ indicating treated firms (within the scope of the French TP documentation rules) after treatment. The dependent variable varies across the four specifications. In column (1), the dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to pre-reform mean total assets between -0.002 and 0.002, otherwise zero (using unconsolidated financial reports from the Orbis database). In column (2), the dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to lagged total assets between -0.002 and 0.002, otherwise zero (using unconsolidated financial reports from the Orbis database). In column (3), the dependent variable is net investment, which is normalized using pre-reform mean total assets (using administrative data). In column (4), the dependent variable is net investment, which is normalized using lagged total assets (using administrative data). Control variables are included as given in the main text and indicated in the table. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C5: Reform Effect on Firms in France - Restricted Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcome	Zero-tax	Zero-tax	Zero-tax	Zero-tax	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)
Sample	+/-100	no large	no 10/90th	no 25/75th	+/-100	no large	no 10/90th	no 25/75th
treat x post	-0.0349**	-0.0268***	-0.0248***	-0.0127**	-0.101**	-0.0340**	-0.0401***	-0.0237
	(0.0152)	(0.00468)	(0.00437)	(0.00601)	(0.0403)	(0.0150)	(0.0140)	(0.0184)
Minimum group tax rate	0.152	0.0226	0.0264	0.0300	-0.875*	-0.346***	-0.376***	-0.379***
	(0.130)	(0.0286)	(0.0283)	(0.0363)	(0.456)	(0.106)	(0.104)	(0.133)
Ln(turnover)	-0.0362***	-0.0457***	-0.0424***	-0.0414***	0.437***	0.400***	0.399***	0.403***
	(0.00160)	(0.000433)	(0.000445)	(0.000567)	(0.0177)	(0.00449)	(0.00477)	(0.00606)
Loss indicator	0.0611***	0.0683***	0.0663***	0.0662***				
	(0.00386)	(0.00104)	(0.00105)	(0.00133)				
Profitability					-1.817***	-1.673***	-1.732***	-1.753***
					(0.0846)	(0.0204)	(0.0219)	(0.0281)
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm size-year FE	yes	yes	yes	yes	yes	yes	yes	yes
N	115673	1581168	1557583	978332	89704	1227577	1212441	760284

Notes: The table presents estimates of a static DiD regression model. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. The table reestimates the main specification using various sample restrictions. In Columns (1) to (4), the dependent variable is a zero-tax indicator, which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero (using unconsolidated financial reports from the Orbis database). The results replicate Column (4) of Table 2. Columns (5) to (8) present analogous results using the logarithmized fixed assets as outcome (using unconsolidated financial reports from the Orbis database). The results replicate Column (3) of Table 5. The table presents four different specifications for each outcome. In Columns (1) and (5), the regression includes firms with a bandwidth of 300-500 million EUR , i.e., +/- 100 million around the treatment threshold (based on either turnover or total assets of the largest group affiliate in the pre-period (2007-2009)). Columns (2) and (6) exclude firms where the largest group member is larger than the median of the treatment group (based on either turnover or total assets of the largest group affiliate in the pre-period (2007-2009)). In Columns (3) and (7), firms below the 10th and above the 90th percentile are excluded (based on the maximum of turnover and total assets in the pre-period (2007-2009)). Columns (4) and (8) report results when excluding the lower and upper quartiles of the size distribution (based on the maximum of turnover and total assets in the pre-period (2007-2009)). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C6: Reform Effect on Close-to-Zero-Tax Payments of Firms in France - Bandwidth

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome	Zero-tax	Zero-tax	Zero-tax	Zero-tax	Zero-tax	Zero-tax
Sample	Admin	FR	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
treat x post	-0.045*	-0.0472***	-0.0338**	-0.0349**	-0.0332**	-0.0489***
	(0.0233)	(0.0171)	(0.0152)	(0.0152)	(0.0154)	(0.0171)
Min. group tax rate	0.077	0.495	0.104	0.152	0.351**	0.642*
	(0.588)	(0.339)	(0.126)	(0.130)	(0.154)	(0.349)
Ln(turnover)	-0.0361***	-0.0353***	-0.0402***	-0.0362***	-0.0309***	-0.0291***
	(0.0043)	(0.00338)	(0.00139)	(0.00160)	(0.00192)	(0.00392)
Loss indicator	0.1198***	0.0861***	0.0552***	0.0611***	0.0586***	0.0974***
	(0.0121)	(0.00952)	(0.00355)	(0.00386)	(0.00460)	(0.00987)
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	no	yes	yes	yes
N	10672	21471	133645	115673	82541	21268

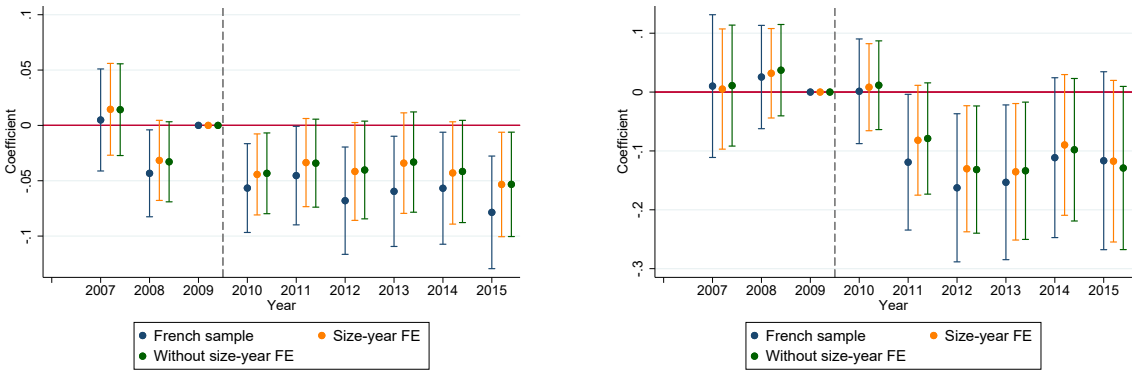
Notes: Notes: The table presents estimates of a static DiD regression model. The dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. The table reestimates the main specifications of Table 2 restricting the sample to firms with a bandwidth of 300-500 million EUR, i.e., +/- 100 million around the treatment threshold (based on the largest group affiliate). Control variables are included as given in the main text and indicated in the table. Column (1) uses administrative tax return data for tax groups and standalone firms in France. Column (2) uses unconsolidated financial reports for French firms from the Orbis database. Columns (3)-(6) also use unconsolidated financial reports. Column (3) estimates the specification for the extended sample of firms in France and in other countries. Column (4) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (5) and (6) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C7: Reform Effect on Fixed Assets of Firms in France - Bandwidth

	(1)	(2)	(3)	(4)	(5)
Outcome	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)
Sample	FR	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
treat x post	-0.119***	-0.108***	-0.101**	-0.117***	-0.111**
	(0.0449)	(0.0407)	(0.0403)	(0.0411)	(0.0449)
Min. group tax rate	-0.150	-0.687	-0.875*	-0.950*	-0.748
	(1.018)	(0.441)	(0.456)	(0.537)	(1.006)
Ln(turnover)	0.555***	0.454***	0.437***	0.446***	0.474***
	(0.0496)	(0.0168)	(0.0177)	(0.0214)	(0.0492)
Profitability	-1.802***	-1.819***	-1.817***	-1.825***	-1.642***
	(0.221)	(0.0805)	(0.0846)	(0.0994)	(0.201)
Firm FE	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes
Host cty-year FE	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes
Firm size-year FE	no	no	yes	yes	yes
N	14117	102771	89704	64625	14627

Notes: The table presents estimates of a static DiD regression model. The dependent variable is the log of firms' fixed assets (from unconsolidated financial reports from the Orbis database). The regressor of main interest is $treat \times post$ indicating treated firms (within the scope of the French TP documentation rules) after treatment. The table reestimates the main specifications of Table 5 restricting the sample to firms with a bandwidth of 300-500 million EUR, i.e., +/- 100 million around the treatment threshold (based on the largest group affiliate). Control variables are included as given in the main text and indicated in the table. Column (1) uses unconsolidated financial reports for French firms from the Orbis database. Columns (2)-(5) also use unconsolidated financial reports for firms included in Orbis. Column (2) estimates the specification for the extended sample of firms in France and in other countries. Column (3) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (4) and (5) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure C5: Reform Effect on Firms in France - Bandwidth



(a) Close-to-Zero-Tax Reporting **(b)** Fixed Assets

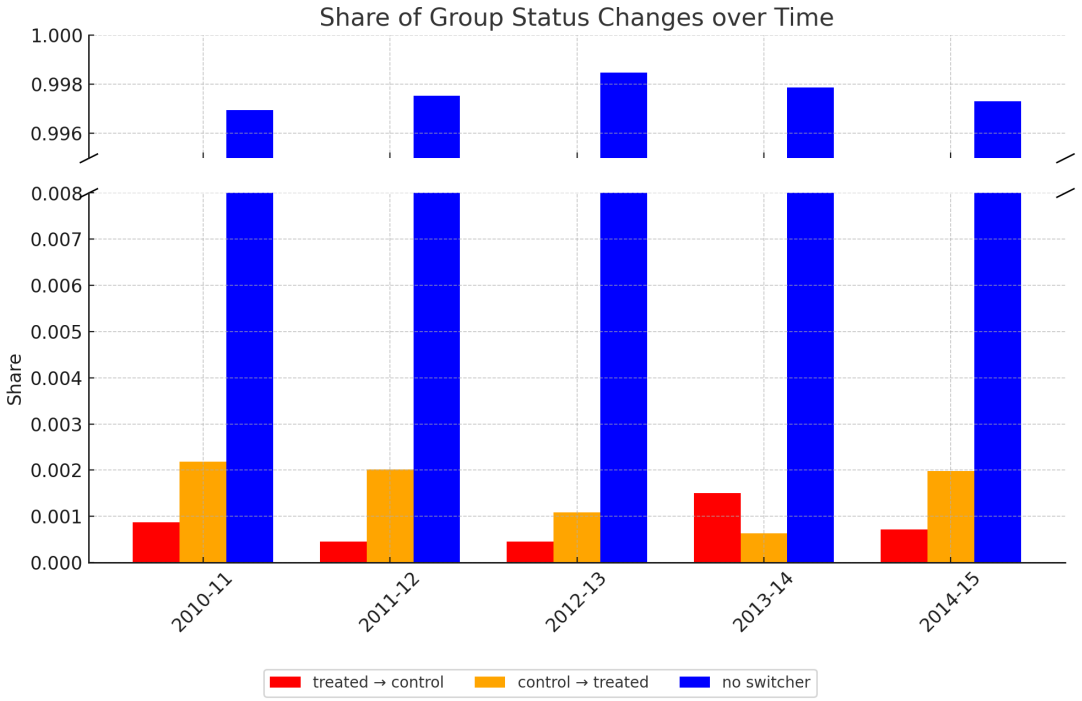
Notes: The figures show dynamic DiD estimates for the effect of TP documentation rules on close-to-zero-tax payments over assets (Panel A) and logarithmized fixed assets (Panel B) in France using Orbis data. The figures present reestimations of the main results presented in Figure 3 (close-to-zero-tax reporting) and Figure 4 (fixed assets), where the regression only includes firms within a bandwidth of 300-500 million EUR, i.e., +/- 100 million around the treatment threshold (based on the largest group affiliate). Hence, the specification controls for firm fixed effects, parent country-year fixed effects, industry-year fixed effects, as well as the firm-level controls described in the main text. The blue symbols depict the baseline estimates: the set of control firms is restricted to entities in France. The orange and green symbols show the extended sample, where the control group also includes firms outside France. This allows us to include host country-year fixed effects (green symbols). The orange symbols depict estimates from specifications where we additionally control for size ventile-year fixed effects. Point estimates and 95% confidence bounds depicted.

Table C8: Reform Effect on Firms in France - Placebo Reforms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcome	Zero-tax	Zero-tax	Ln(FIAS)	Ln(FIAS)	Zero-tax	Zero-tax	Ln(FIAS)	Ln(FIAS)
Placebo	Year 2008	Year 2009	Year 2008	Year 2009	250 mio	100 mio	250 mio	100 mio
treat x placebo post	-0.00603	0.00412	0.00315	0.00216				
	(0.00492)	(0.00469)	(0.0110)	(0.0103)				
Placebo treat x post					-0.0117	-0.00946	0.0398	-0.0116
					(0.00923)	(0.00588)	(0.0268)	(0.0173)
Min. group tax rate	-0.0879*	-0.0964*	-0.113	-0.111	0.0344	0.0360	-0.389***	-0.386***
	(0.0504)	(0.0503)	(0.107)	(0.106)	(0.0276)	(0.0276)	(0.103)	(0.103)
Ln(turnover)	-0.0447***	-0.0447***	0.344***	0.344***	-0.0449***	-0.0449***	0.405***	0.405***
	(0.000764)	(0.000764)	(0.00872)	(0.00872)	(0.000415)	(0.000416)	(0.00436)	(0.00436)
Loss indicator	-0.0107***	-0.0107***			0.0629***	0.0629***		
	(0.00186)	(0.00186)			(0.000992)	(0.000993)		
Profitability			-1.156***	-1.156***			-1.735***	-1.736***
			(0.0298)	(0.0298)			(0.0203)	(0.0204)
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm size-year FE	yes	yes	yes	yes	yes	yes	yes	yes
N	555484	555484	396996	396996	1705221	1701289	1344774	1341502

Notes: The table presents estimates of a static DiD regression model. In Columns (1), (2), (5), and (6), the dependent variable is a zero-tax indicator, which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. Columns (3), (4), (7), and (8) present analogous results using the logarithmized fixed assets as outcome. In Columns (1) (4) The regressor of main interest is *treat* × *placebo post* indicating treated firms (within the scope of the French TP documentation rules) after a placebo treatment year. We shift the treatment forward in time (in Columns (1) and (3) to the year 2008, in Columns (2) and (4) to the year 2009) and exclude the actual treatment periods 2010-2015. In Columns (5) (8) The regressor of main interest is *placebo treat* × *post* indicating treated firms (within an placebo scope of the French TP documentation rules) after treatment. Columns (5) to (8) assign a placebo treatment to firms based on the original treatment definition but with a lower size threshold and exclude originally treated firms from the sample. In Columns (5) and (7), we assign a firm to the treatment group if the firm itself or another related firm in the group exceed total assets or turnover of 250 Mio. EUR in any pre-treatment year 2007 to 2009. In Columns (6) and (8), a firm is assigned to the treatment group if the firm itself or another related firm in the group exceed total assets or turnover of 100 Mio. EUR in any pre-treatment year 2007 to 2009. Control variables are included as given in the main text and indicated in the table. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure C6: Treatment Status Over Time



Notes: The figure shows the share of observations in the full sample with changes in treatment status over time in the post-reform period (2010-2015). Blue bars indicate observations that keep their status constant across consecutive years. Red bars indicate switches from the treatment group to the control group from one year to the next. Orange bars indicate switches from the treatment group to the control group from one year to the next.

Table C9: Reform Effect on Close-to-Zero-Tax Payments of Firms in France - Excluding Treatment Switching Firms

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	France	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
Data	Admin	Orbis	Orbis	Orbis	Orbis	Orbis
treat x post	-0.0254***	-0.0310***	-0.0294***	-0.0298***	-0.0316***	-0.0249***
	(0.00559)	(0.00427)	(0.00397)	(0.00398)	(0.00403)	(0.00441)
Minimum group tax rate	-0.0952	-0.239**	0.0283	0.0190	0.0589*	-0.226**
	(0.119)	(0.0973)	(0.0262)	(0.0273)	(0.0344)	(0.0965)
Ln(turnover)	-0.0366***	-0.0408***	-0.0470***	-0.0436***	-0.0384***	-0.0362***
	(0.00108)	(0.000843)	(0.000331)	(0.000394)	(0.000459)	(0.000976)
Loss indicator	0.129***	0.0950***	0.0573***	0.0662***	0.0635***	0.105***
	(0.00306)	(0.00251)	(0.000872)	(0.000963)	(0.00114)	(0.00261)
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	no	yes	yes	yes
N	157148	280285	2166533	1831730	1318633	276361

Notes: The table presents estimates of the static DiD regressions in Table 2 for a restricted sample of observations that do not change their treatment status between pre- and post-reform periods — either from treatment to control or vice versa. The dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. Column (1) uses administrative tax return data for tax groups and standalone firms in France. Column (2) uses unconsolidated financial reports for French firms from the Orbis database. Columns (3)-(6) also use unconsolidated financial reports. Column (3) estimates the specification for the extended sample of firms in France and in other countries. Column (4) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (5) and (6) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C10: Reform Effect on Fixed Assets of Firms in France - Excluding Treatment Switching Firms

	(1)	(2)	(3)	(4)	(5)
Sample	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
Data	Orbis	Orbis	Orbis	Orbis	Orbis
treat x post	-0.0600***	-0.0551***	-0.0219*	-0.0274**	-0.0328**
	(0.0139)	(0.0128)	(0.0128)	(0.0130)	(0.0146)
Minimum group tax rate	-0.0967	-0.762***	-0.400***	-0.362***	-0.104
	(0.260)	(0.0982)	(0.101)	(0.132)	(0.259)
Ln(turnover)	0.557***	0.436***	0.411***	0.417***	0.501***
	(0.0152)	(0.00372)	(0.00431)	(0.00513)	(0.0156)
Profitability	-1.796***	-1.776***	-1.744***	-1.758***	-1.717***
	(0.0570)	(0.0185)	(0.0199)	(0.0230)	(0.0549)
Firm FE	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes
Host cty-year FE	no	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes
Firm size-year FE	no	no	yes	yes	yes
N	178953	1661355	1424525	1033071	184509

Notes: The table presents estimates of the static DiD regressions in Table 5 for a restricted sample of observations that do not change their treatment status between pre- and post-reform periods — either from treatment to control or vice versa. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. Column (1) uses unconsolidated financial reports for French firms from the Orbis database. Columns (2)-(5) also use unconsolidated financial reports for firms included in Orbis. Column (2) estimates the specification for the extended sample of firms in France and in other countries. Column (3) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (4) and (5) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C11: Reform Effect on Firms in France - Instrumental Variable Approach

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome	zero-tax	zero-tax	zero-tax	Ln(FIAS)	Ln(FIAS)	Ln(FIAS)
Sample	FR	All	Full FE	FR	All	Full FE
Panel A: First stage						
treat x post (IV)	0.890***	0.901***	0.900***	0.893***	0.904***	0.903***
	(0.00238)	(0.00205)	(0.00207)	(0.00290)	(0.00245)	(0.00247)
Min. group tax rate	0.310***	0.0344***	0.0343***	0.266***	0.0289***	0.0278***
	(0.0493)	(0.00559)	(0.00598)	(0.0572)	(0.00549)	(0.00586)
Ln(turnover)	0.00175***	0.000283***	0.000432***	0.00326***	0.000244***	0.000431***
	(0.000295)	(0.0000522)	(0.0000635)	(0.000705)	(0.0000565)	(0.0000702)
Loss indicator	-0.00135	-0.000241*	-0.000238			
	(0.000848)	(0.000133)	(0.000150)			
Profitability				-0.00221	-0.000155	-0.000626
				(0.00627)	(0.000530)	(0.000606)
N	298572	2184806	1848024	191152	1673546	1435610
F-statistic (instr.)	140187.9	193399.9	189332.0	94684.6	135887.1	133299.3
Panel B: Second stage						
Actual treat x post	-0.0292***	-0.0289***	-0.0293***	-0.0755***	-0.0672***	-0.0340**
	(0.00463)	(0.00428)	(0.00430)	(0.0151)	(0.0138)	(0.0139)
Min. group tax rate	-0.225**	0.0270	0.0195	-0.00619	-0.754***	-0.397***
	(0.0931)	(0.0261)	(0.0273)	(0.254)	(0.0978)	(0.101)
Ln(turnover)	-0.0406***	-0.0469***	-0.0435***	0.557***	0.437***	0.411***
	(0.000824)	(0.000330)	(0.000393)	(0.0147)	(0.00371)	(0.00429)
Loss indicator	0.0944***	0.0575***	0.0666***			
	(0.00243)	(0.000869)	(0.000959)			
Profitability				-1.799***	-1.777***	-1.744***
				(0.0555)	(0.0184)	(0.0198)
Firm FE	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	yes	yes	no	yes	yes
Parent cty-year FE	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	yes	no	no	yes
N	298572	2184806	1848024	191152	1673546	1435610

Notes: The table presents estimates of a static DiD instrumental variable regression model. The regressor of main interest is *Actual treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment based on post-reform characteristics, which is instrumented by treatment status indicated by pre-reform firm characteristics interacted with an indicator variable for the post-reform period. The F-statistic relates to the test whether the coefficient of the instrument *treat* × *post* equals zero in the first stage. Control variables are included as given in the main text and indicated in the table. In Columns (1) to (3), the dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero (using unconsolidated financial reports from the Orbis database). In Columns (4) to (6), The dependent variable is the log of firms' fixed assets (from unconsolidated financial reports from the Orbis database). Columns (1) and (4) use unconsolidated financial reports for French firms from the Orbis database. Columns (2) and (5) estimate the specification for the extended sample of firms in France and in other countries. Columns (3) and (6) augment the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C12: Reform Effect on Firms in France - Robustness Other Reforms

	(1) Data to 2012	(2) Data to 2013	(3) SME-year FE	(4) > 50 empl.-year FE
Panel A: Outcome: Zero-Tax Indicator (Orbis)				
treat x post	-0.0125***	-0.0181***	-0.0227***	-0.0248***
	(0.00410)	(0.00407)	(0.00416)	(0.00414)
Controls	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes
N	189037	225139	298572	298572
Panel B: Outcome: Gross Tax Rate (Admin)				
treat x post	0.0111***	0.0127***	0.0127***	0.0157***
	(0.00309)	(0.00304)	(0.00303)	(0.00302)
Controls	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes
N	86702	104718	141022	141022
Panel C: Outcome: Fixed Assets (Orbis)				
treat x post	-0.0184	-0.0303***	-0.0317**	-0.0296**
	(0.0114)	(0.0118)	(0.0125)	(0.0125)
Controls	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Host cty-year FE	yes	yes	yes	yes
Parent cty-year FE	yes	yes	yes	yes
Firm size-year FE	yes	yes	yes	yes
N	930335	1101934	1435610	1435610

Notes: The table presents estimates of a static DiD regression model. The regressor of main interest is $treat \times post$ indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text. In Panel A, the dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. In Panel B, the dependent variable is the gross tax rate. The gross tax rate is grossed up to neutralize the potentially distorting influence of specific R&D and wage tax credits (Bach et al., 2019). The tax rate measure uses the accounting profits in the denominator and is restricted to values between 0 and 1. In Panel C, the dependent variable is the log of firms' fixed assets (from unconsolidated financial reports from the Orbis database). Column (1) restricts the sample period to the years 2007-2012. Column (2) restricts the sample period to the years 2007-2013. Column (3) augments the set of regressors by interactions between a dummy variable indicating a small- or medium sized enterprise (if the firm has less than 250 employees and either a turnover less than EUR 50 million or a balance sheet sum of less than EUR 43 million in any pre-reform year 2007-2009) and full sets of year fixed effects. Alternatively, Column (4) augments the set of regressors by interactions between a dummy variable indicating a firm with more than 50 employees in any pre-reform year 2007-2009 and full sets of year fixed effects. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C13: Reform Effect on Close-to-Zero-Tax Payments of Firms in France - Profitable Firms Only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcome	Zero-tax	Zero-tax	Zero-tax	Zero-tax	Zero-tax	Zero-tax	GTR	Long-term GTR
Sample	France	France	All	Full FE	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$	France	France
Data	Admin	Orbis	Orbis	Orbis	Orbis	Orbis	Admin	Admin
treat x post	-0.0121**	-0.0213***	-0.0256***	-0.0244***	-0.0251***	-0.0158***	0.0137**	0.0111***
	(0.00552)	(0.00447)	(0.00410)	(0.00411)	(0.00416)	(0.00456)	(0.00316)	(0.00429)
Min. group tax rate	0.0471	-0.118	0.0138	0.0223	0.0399	-0.109	0.077	0.0577
	(0.116)	(0.102)	(0.0269)	(0.0279)	(0.0359)	(0.0999)	(0.0610)	(0.0644)
Ln(turnover)	-0.0241***	-0.0525***	-0.0600***	-0.0574***	-0.0540***	-0.0503***	0.0177***	0.0109***
	(0.00214)	(0.00197)	(0.000559)	(0.000668)	(0.000777)	(0.00215)	(0.00128)	(0.00114)
Loss indicator	0.150***	0.153***	0.0833***	0.0877***	0.0888***	0.150***	-0.108***	-0.0607***
	(0.00573)	(0.00363)	(0.00120)	(0.00129)	(0.00155)	(0.00362)	(0.00286)	(0.00241)
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Host cty-year FE	no	no	yes	yes	yes	yes	no	no
Parent cty-year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm size-year FE	no	no	no	yes	yes	yes	no	no
N	94662	191134	1573171	1349495	971121	194896	86255	78978

Notes: The table presents estimates of a static DiD regression model. This table reestimates Table 2 and Specifications (3) and (4) of Table 3 using only profitable firms. The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) after treatment. Control variables are included as given in the main text and indicated in the table. In Columns (1) to (6), the dependent variable is a zero-tax indicator which equals 1 if a firm has a ratio of tax payments to total assets between -0.002 and 0.002, otherwise zero. Column (1) uses administrative tax return data for tax groups and standalone firms in France. Column (2) uses unconsolidated financial reports for French firms from the Orbis database. Columns (3)-(6) also use unconsolidated financial reports. Column (3) estimates the specification for the extended sample of firms in France and in other countries. Column (4) augments the set of regressors by interactions between dummy variables indicating the ventiles of the firm-size distribution and full sets of year fixed effects. Columns (5) and (6) exclude firms where there was a tax rate change or change in anti-profit shifting rules in 2010 or between 2007 and 2015 respectively (see Section 3 for details). Column (7) uses the gross tax rate as dependent variable. The gross tax rate is grossed up to neutralize the potentially distorting influence of specific R&D and wage tax credits (Bach et al., 2019). Column (8) uses a 3-year average of the gross tax rate as dependent variable as the average is less sensitive to negative shocks to profitability (Dyreng et al., 2008). All tax rate measures use the accounting profits in the denominator and are restricted to values between 0 and 1. Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table C14: Spillover Effects on Fixed Assets of Affiliates Outside France - Robustness

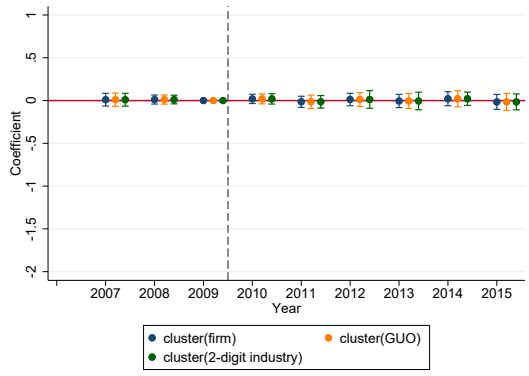
	(1)	(2)	(3)	(4)
Sample split	$\tau_i \leq 12.5\%$	$\tau_i \leq 12.5\%$	$\tau_i > 30\%$	$\tau_i > 30\%$
Sample	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$	$\neq \Delta_{2010}$	$\neq \Delta_{2007-2015}$
treat × post	-0.889***	-1.286**	0.0451	1.944
	(0.326)	(0.606)	(0.0440)	(1.709)
Controls	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes
Industry-year FE	yes	yes	yes	yes
Host-cty-year FE	yes	yes	yes	yes
Parent-cty-year FE	yes	yes	yes	yes
Firm size-year FE	yes	yes	yes	yes
N	27167	1027	193519	3537

Notes: The table depicts estimates of a static DiD model. The dependent variable is firms' logarithmized fixed assets (from unconsolidated financial reports from the Orbis database). The regressor of main interest is *treat* × *post* indicating treated firms (within the scope of the French TP documentation rules) outside of France after treatment. Control variables are included as given in the main text. Columns (1) to (2) restrict the sample to firms with a host country statutory tax rate τ_i below 12.5%. Columns (3) to (4) restrict the sample to firms with a host country statutory tax rate τ_i above 30%. Columns (1) and (3) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country in 2010. Columns (2) and (4) exclude firms where there was a tax rate change or change in anti-profit shifting rules in their respective home or host country between 2007 and 2015 (see Section 3 for details). Standard errors in parentheses and clustered at the firm level. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

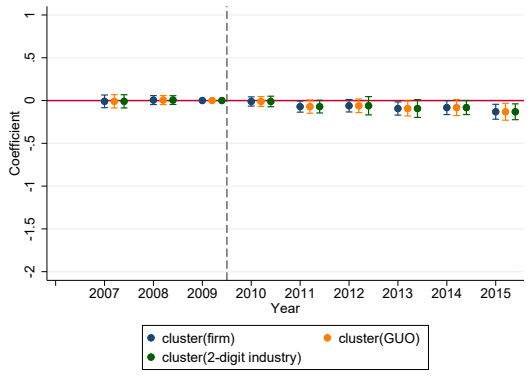
Figure C7: Spillover Effects on Fixed Assets of Firms Outside France - Alternative Clustering

(a) Low-Tax Affiliates (with size-year FE)

(b) Low-Tax Affiliates (without size-year FE)



(c) High-Tax Affiliates (with size-year FE)



(d) High-Tax Affiliates (without size-year FE)

Notes: The figures show dynamic DiD estimates for the spillover effects of TP documentation rules in France on logarithmized fixed assets of firms outside France (using Orbis data). The specifications control for firm fixed effects, industry-year fixed effects, parent-country-year fixed effects, host-country-year fixed effects, as well as the firm-level controls described in the main text. Panels (a) and (c) additionally control for firm size-year fixed effects. Point estimates and 95% confidence bounds are depicted. Panels (a) and (b) depict estimates from specifications, where the sample comprises firms with a statutory corporate tax rate lower/equal to 12.5%. Panels (c) and (d) depict estimates from specifications, where the sample comprises firms with a statutory corporate tax rate higher than 12.5%. Standard errors are clustered at levels as indicated in the figures' legends: Blue symbols depict the baseline results where standard errors are clustered at the firm-level. Orange symbols depict the results when standard errors are clustered at the GUO-level and green symbols depict the results when the standard errors are clustered at the 2-digit industry-level.

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