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The Race Between Tax Enforcement and Tax Planning: Evidence From a Natural Experiment in Chile

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ABSTRACT

Profit shifting by multinational corporations is thought to reduce tax revenue around the world. While transfer pricing regulations are meant to curtail profit shifting, there have been rising concerns that a sophisticated tax advisory industry can limit their effectiveness. This paper provides a comprehensive analysis of how firms and tax advisors respond to the introduction of standard regulations aimed at limiting profit shifting. Using administrative tax and customs data from Chile in difference-in-differences event-study designs, we find that the reform was ineffective in reducing multinationals' transfers to lower-tax countries and did not significantly raise tax payments. At the same time, interviews with tax advisors reveal a drastic increase in tax advisory services. The qualitative interviews also allow us to identify and then quantitatively confirm a common tax planning strategy in response to the reform. These results illustrate that when enforcement can be circumvented by sophisticated tax planning, it can benefit tax consultants at the expense of tax authorities and taxpayers.

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It is a long-standing concern that multinational corporations avoid paying taxes by shifting profits to low-tax countries. The global policy discussion on this issue has featured two competing perspectives. According to one view, profit shifting can be reduced by improving and harmonizing the complex rules of transfer pricing that currently govern the taxation of multinational firms. Following this view and under the leadership of the OECD, many countries have implemented regulations that require increasingly granular information on intra-firm transactions. According to a second view, a more fundamental change is needed. A common concern motivating this perspective is that the complexity of transfer pricing regulations may make them inherently vulnerable to sophisticated tax planning by multinationals and the tax advisory industry.

This paper provides a comprehensive analysis of whether reforms that strengthen transfer pricing information reporting requirements effectively reduce profit shifting. We provide a simple model characterizing how the tax advisory industry affects the effectiveness of such reforms through its dual compliance and tax planning roles. Using rich tax and customs data, we study the effects of a large reform in Chile in 2011 on all potential channels of profit shifting and tax revenue. Finally, we conduct extensive qualitative interviews to understand how the tax advisory industry shapes the response of multinationals to the reform.

The reform we study introduced the OECD transfer pricing standards in Chile. It significantly expanded information reporting requirements on international transactions by multinationals, changed legal rules to make it easier for the tax authority to enforce transfer pricing rules, and increased resources devoted to the enforcement of these rules. As a result, the reform transformed the country in one year from a laggard to a leader in the implementation of OECD transfer pricing standards.[1] This reform provides a rare natural experiment to evaluate whether the strategy to strengthen monitoring and information reporting around the world can effectively reduce profit shifting.

Contrary to the expectations of policymakers, the reform did not reduce multinationals' tax-motivated payments to foreign affiliates for any of the potential channels of profit shifting: payments for royalties, services, interests, or goods. Consistent with these results, we also find no effect on corporate tax payments. However, the reform led to a very large increase in the number of transfer pricing consultants. Overall, it therefore seems that in the race

[1] Chile's low corruption and high administrative capacity make it an ideal setting to study such reforms, as they are more likely to succeed there than in other countries. Transparency International (2012) has ranked Chile the 20^{th} least corrupt out of 180 countries.

between tax enforcement and tax planning, tax planning won.

We develop these results in three steps. First, to understand the mechanism by which the advisory industry can affect the effectiveness of transfer pricing reforms, we develop a conceptual framework in which multinationals can employ tax advisors to minimize compliance costs as well as to engage in tax planning. This framework connects our quantitative and qualitative evidence and shows that reforms that increase compliance costs may backfire and facilitate the adoption of more sophisticated tax planning. These dynamics show the importance of taking the tax advisory industry into account when designing tax reforms.

Second, we evaluate the effects of the reform using administrative data. We start by confirming whether multinationals in Chile engage in tax-motivated international payments to begin with. We estimate the semi-elasticity of payments with respect to corporate income tax rates in the destination country, comparing payments for royalties, services or interests of a given multinational to affiliates (i.e., intra-group payments) vs. to non-affiliates in the same country. If firms engage in tax-motivated profit shifting, we would expect an increase in payments to affiliates when the tax rate in the destination country falls. This intra-firm, intra-destination country analysis reveals that this is indeed the case, while we see no such effect on payments to non-affiliates.[2]

We then use a difference-in-differences event-study design to study whether the reform was effective at reducing this semi-elasticity. Consistent with the identifying assumption, semi-elasticities of payments to affiliates and to non-affiliates evolved in parallel before the reform. If the reform had the intended effect, we would expect a reduction in the semi-elasticity of intra-group payments. However, we find no such reduction. For trade in goods, we combine customs and tax data. For a subset of transactions, we can construct information on whether trade is intra-group. In this subset, we observe that Chilean multinationals also engage in tax-motivated payments for imports, and there is again no reduction in the semi-elasticity with respect to destination country tax rates after the reform.

Consistent with the absence of effects on any of the channels for profit shifting, we also find no significant increase in tax payments by multinationals following the reform. We compare tax payments by multinationals to those of internationally active domestic firms (i.e.,

[2]As in prior work, we interpret these results as evidence of profit shifting (e.g., Hines and Rice, 1994; Huizinga and Laeven, 2008; Dharmapala and Riedel, 2013; Clausing, 2016; Dowd et al., 2017; Heckemeyer and Overesch, 2017). While the results may arise from illegal manipulation of intra-group transactions, they can also be driven by legal tax planning structures.

those with exports, imports, or cross-border payments) with similar characteristics. While multinationals differ from domestic firms, we show that they are comparable once we scale outcomes by firm size and control for pre-reform characteristics interacted with year fixed effects. To test the identifying assumption (that these domestic firms and multinationals were not differentially affected by other shocks at the time of the reform), we show both parallel pre-trends in tax payments and a placebo test indicating that domestic sales of both groups evolve in parallel before and after the reform.

The point estimate of the impact on corporate income taxes is far from statistically significant and ranges between -0.18% and $+0.58\%$, depending on the included post-treatment duration. For comparison, Tørsløv et al. (2023) estimate that in 2015, Chile lost the equivalent of 12% of corporate tax revenue to profit shifting.[3] The finding that the reform did not increase tax payments is robust and holds across a number of subgroups of firms that might be expected to be more affected by the reform, such as Chilean-owned multinationals, multinationals with affiliates in tax havens, firms that had not revealed their multinational status to the government prior to the reform, or relatively smaller firms. Since we find no reduction in any of the main channels of profit shifting and no impact on tax payments, we conclude that the reform did not succeed at reducing profit shifting.

Third, we conducted in-depth interviews with transfer pricing experts both in Chilean multinationals and consulting firms, and complement them with employment history data from Revelio Labs, to study how multinationals responded to the reform.[4] Demand for transfer pricing experts exploded after the reform. The global nature of the regulation makes transfer pricing expertise portable across countries. Large consulting firms were thus able to quickly meet the increase in demand by relocating experts from abroad. Three years after the reform, the number of transfer pricing experts working at the Big Four consulting firms (i.e., Deloitte, EY, KPMG, and PwC) in the country surged. It increased 12-fold (from 8 to 95) according to the interviews with the heads of transfer pricing departments of the Big Four and 7-fold (from 9 to 67) according to the data from Revelio. This rapid boom was specific to transfer pricing consulting. The Revelio data show no similar growth for other tax consultants in the Big Four, for tax consultants outside of the Big Four, or for other

[3] On a global level, the loss of corporate tax revenue due to profit shifting is estimated to be 9% according to Tørsløv et al. (2023). The lack of effect of the reform on tax payments is therefore not due to a relatively low baseline level of profit shifting in Chile.

[4] Finkelstein et al. (2021) discuss examples of the use of qualitative interviews in recent economics papers.

comparable professionals working outside of taxation.

Interviewees shared that transfer pricing consultants offer two types of services: compliance support and tax planning. While multinationals first approached consultants for compliance support, the process of systematizing their intra-group transactions for compliance made it easier for consultants to identify opportunities to reduce taxes through tax planning, which they then sold as additional services. An important tax planning strategy mentioned in the interviews was centralizing cost centers in fewer locations. We triangulate between the qualitative and quantitative data by testing this hypothesis with the administrative data and find a significant reduction in the number of non-tax haven countries to which multinationals make intra-group payments.

The interviews also uncover an interesting pattern of "revolving doors" and outmatched resources between the tax authority and the private sector. Consulting firms see any additional enforcement by the government as a business opportunity, leaving many experts with the conclusion that tax authorities are fighting a losing battle. Overall, the qualitative results show that the impact of monitoring regimes cannot be understood without taking into account the role of the tax advisory industry, which can benefit from these regulations while undermining their effectiveness.

This paper contributes to multiple strands of the literature. First, we provide the first comprehensive evaluation of the effects of a transfer pricing reform, measuring its impact on each profit shifting channel as well as on tax payments. This builds on a large, growing literature, which documents how multinationals lower their tax payments through profit shifting (see, e.g., Jenkins and Wright, 1975; Grubert et al., 1991; Hines and Rice, 1994; Bartelsman and Beetsma, 2003; Huizinga and Laeven, 2008; Koethenbuerger et al., 2019; Tørsløv et al., 2023). The literature establishes that firms make tax-motivated payments via intangible assets such as patents and trademarks[5], debt and interest payments[6], services such as finances, administration, IT or marketing[7], and trade in goods[8]. Dharmapala (2020) provides an overview of prior work on the effectiveness of transfer pricing regulations.

Second, our study contributes to the surprisingly small literature on tax advisory services

[5]Dischinger and Riedel (2011); Karkinsky and Riedel (2012); Griffith et al. (2014); Alstadsæter et al. (2018); Delis et al. (2024)

[6]Desai et al. (2007); Mintz and Weichenrieder (2010); Buettner et al. (2012); Bilicka (2019)

[7]Hebous et al. (2011); Hebous and Johannesen (2021)

[8]Clausing (2003, 2006); Bernard et al. (2006); Cristea and Nguyen (2016); Davies et al. (2018); Liu et al. (2019); Wier (2020)

(Slemrod, 2019). Previous research highlights that tax advisors help shape compliance and avoidance behavior (e.g., Slemrod et al., 2001; Battaglini et al., 2020; Zwick, 2021; Mayo, 2022; Barrios and Gallemore, 2023). While tax advisory firms play a crucial role in helping firms both comply with information requirements and undertake tax planning, their role in determining the effectiveness of tax monitoring reforms has not been studied. Our findings show that the tax advisory industry can benefit from efforts to increase tax compliance. The in-depth interviews suggest important mechanisms through which tax consultants influence the practical effects of tax policy, some of which we are able to test and confirm with the administrative tax data.[9] In a subsequent companion paper, Pomeranz and Suárez Serrato (forthcoming) find that in other countries that implemented strong transfer pricing reforms, these were also followed by increases in transfer pricing consulting.

Third, this paper builds on the literature on information reporting as a tool to enforce tax compliance. Two key lessons emerge from that literature: the importance of paper trails for tax monitoring and the need for credible enforcement for such paper trails to be effective in reducing evasion (see, e.g., Kopczuk and Slemrod, 2006; Gordon and Li, 2009; Kleven et al., 2011a,b; Carrillo et al., 2012; Besley and Persson, 2013; Pomeranz, 2015; Kleven et al., 2016; Carrillo et al., 2017; Slemrod et al., 2017; Naritomi, 2019; Kumler et al., 2020; Jensen, 2022; Bilicka et al., 2024). Our study suggests that—in contrast to what has been found for small firms with simple accounting structures—strengthening reporting requirements and paper trails may not be sufficient to increase tax collection from large firms, even when coupled with increased monitoring and enforcement, because their complex structures may provide them with more opportunities to respond with sophisticated tax planing.

Finally, our paper adds more broadly to the literature on taxation in developing countries.[10] Significant attention has been devoted to small and medium-sized firms. Few papers have been able to analyze large corporations—due mostly to data constraints and lack of exogenous variation—even though they represent a large share of tax revenue.[11]

[9] A related literature studies the role of tax preparers in disseminating information about the tax code, encouraging program participation, and mediating the impact of tax audits (Kopczuk and Pop-Eleches, 2007; Chetty and Saez, 2013; Boning et al., 2020).

[10] See Pomeranz and Vila-Belda (2019) and Bachas et al. (2024) for reviews.

[11] Notable exceptions are Holz et al. (2023) and Carrillo et al. (2023).

1 The Taxation of Multinational Firms

1.1 International Corporate Taxation and the Chilean Context

A key feature of taxing multinational firms stems from the fact that profits are generated jointly by a group of affiliated firms that are located in different countries. (Transactions among affiliates within the group are called "intra-group".) According to standard regulations, profits of each affiliate are taxed separately by the country where they are located. This creates enforcement challenges because multinational firms may circumvent taxation by shifting profits to affiliates in lower-tax countries, thereby reducing their global tax payments. Profits can be shifted from one country to another by strategically manipulating payments for intra-group transactions for services, interests, intangibles, and goods. For instance, a subsidiary in country A may buy services at relatively high prices from an affiliate in a low-tax country B. This transaction reduces the tax bill in country A and increases it in country B, thereby lowering the overall tax payments of the multinational corporation.

To limit such profit shifting, most countries require firms to follow the "arm's length principle'' for intra-group transactions. This principle stipulates that affiliates of a multinational should transact as if they were separate entities and bill each other at prevailing market prices.[12] Zucman (2014) describes the history and implications of these rules. Today, the arm's length principle is embodied in Article 9 of the OECD Model Tax Convention (OECD, 2019a) and further detailed in the OECD's transfer pricing guidelines (OECD, 2017).[13]

In practice, the arm's length principle can be challenging to implement because certain transactions, for instance, intellectual property, are never replicated between third parties and thus lack an observable market price. Similarly, it can be hard to determine the market price of services such as management advice, human resources, or marketing provided by one affiliate to another. Enforcing the arm's length principle is further complicated by the large number of transactions within multinationals, which can allow firms to choose strategic prices even when subject to substantial monitoring. To address these challenges, the OECD has developed a complex set of rules regulating how much affiliates can charge each other (e.g., the amount attributed to each affiliate for centralized services such as human resources) and how prices should be calculated when a market price is not available (e.g., by calculating

[12] In addition, Chile—like most countries—has anti-avoidance provisions known as controlled-foreign corporation rules, whereby passive income (such as royalties or interest) earned by affiliates abroad can be subject to taxation in Chile. Multinationals may also be able to avoid these rules through tax planning.

[13] For a list of non-OECD countries that follow similar transfer pricing guidelines, see Table A.1.

the justifiable profitability of each transaction).

The corporate income tax in Chile: The Chilean corporate income tax is a standard tax on corporate profits. It is similar to the way the US corporate income tax worked before the "Tax Cuts and Jobs Act" in 2018.[14] Multinationals have incentives to shift profits out of Chile, even though it is not a high-tax country, because its corporate taxes are still higher than in many low-tax countries. Multinational firms represent a large share of corporate income tax collection. Out of approximately 300,000 incorporated firms in Chile, only around $5,500$ are multinationals. But these firms pay over 60% of all corporate income taxes (Servicio de Impuestos Internos, 2021). The statutory corporate income tax rate during our study period was 17% from 2007-2010, 20% from 2011-2013, 21% in 2014, and 22.5% in 2015. As we show below, these changes do not affect our analyses.[15]

1.2 The Transfer Pricing Reform

Starting in the late 1990s, the OECD has spearheaded efforts to strengthen reporting requirements of multinational firms and enforcement of the arm's-length principle (e.g., Murphy, 2009). The OECD encouraged member countries to introduce legislation requiring firms to submit detailed documentation to justify their intra-group payments and transfer prices.[16] The reform incorporates the key elements of these OECD guidelines.

The timeline was as follows: In 2011, the law started to be debated in congress and the tax authority created a new specialized unit to monitor transfer pricing compliance. In 2012, the new law entered into force. In 2013, firms had to file the new reporting requirements for the first time (regarding their 2012 activities).

The reform had three main components. First, the law significantly expanded reporting requirements for multinationals, following the OECD (2010) guidelines. Under the new legislation, multinationals are required to report all transactions with affiliates abroad and

[14]The Chilean corporate income tax is a worldwide tax: global profits of multinationals headquartered in Chile are taxable in Chile, with tax credits to offset taxes paid abroad. Since foreign profits are only taxable once repatriated to Chile, the tax can be postponed by retaining earnings abroad.

[15] In the intra-firm analysis, we show robustness checks taking changes in the Chilean tax rate into account, and in the inter-firm analysis, these changes apply to both treatment and control firms equally.

[16]Starting in the mid-2010s, the OECD introduced the "base erosion and profit shifting" (BEPS) initiative. BEPS extends this approach by encouraging even more comprehensive information reporting (such as disclosing "aggressive tax planning arrangement"); it also covers other areas, such as the challenges specific to the digital economy and dispute resolution settlement (OECD, 2015). This paper is not an evaluation of BEPS, but it is relevant for assessing the likely impacts of BEPS, because BEPS keeps the arm's length pricing while further strengthening reporting requirements.

the methods used to price these transactions. Second, the law shifted the burden of proof for compliance with transfer pricing regulations from the tax authority to firms: firms need to provide justification for the pricing of intra-group payments. Finally, the reform increased enforcement resources, doubling the transfer pricing experts in the tax authority and tripling of the payroll amount devoted to transfer pricing experts.[17] The number of transfer pricing audits increased eight-fold, from 7 in 2010 to an average of 54 a year in 2012–2015.[18]

Overall, the regulatory and enforcement environment regarding transfer pricing became significantly stricter as a result of the reform. Data from Mescall and Klassen (2018) illustrate the extent to which the reform changed the ease of transfer mispricing for multinationals. They analyze the transfer pricing risk for multinationals in 30 countries based on assessments by transfer pricing experts from Big Four consultancies.[19] Figure A.1 shows that while Chile ranked second to last prior to the reform (2010), it was 4$^{\text{th}}$ highest afterward (2012).

2 A Conceptual Framework of Tax Enforcement Reforms and the Tax Advisory Industry

This section presents a conceptual framework that reconciles the expected impact of tax enforcement reforms with our empirical findings of limited effectiveness. Drawing from our interviews, we identify three key forces shaping the interaction between these reforms and the tax advisory industry: increased demand for compliance expertise, complementarity between compliance and tax planning services, and the elastic supply of advisory expertise. Our model demonstrates how these forces can counteract the intended effects of transfer pricing regulations, explaining the discrepancy between policy expectations and observed outcomes. By analyzing these dynamics, we determine the conditions under which such regulations are more likely to succeed in curbing profit shifting behaviors.

[17]These developments were also perceived as significant by the tax advisory industry. As a senior Big Four consultant described: "*The most important aspect of the new regime is that the tax authority now has a specialized team that can do intelligent auditing. This is even more important than the new law.*"

[18]Not included in these numbers are the many desk-based investigations that the auditors undertook without contacting firms, as only those with red flags are escalated to full audits.

[19]The risk is calculated based on answers from senior transfer pricing experts from around the world to the question "Based on your experiences, please rate the overall transfer pricing risk from 1 (least risky) to 5 (very risky). Transfer pricing risk includes the risk of a transfer pricing position being discovered and denied and the risk of penalties incurred." The paper then predicts the response to this score across countries and time based on observable regulation and enforcement variables.

2.1 Model Setup

Firms may respond to increased monitoring by adjusting their real or reporting behavior and by seeking tax advice from consultants. We model these margins of adjustment by extending the classic models of profit shifting of Hines and Rice (1994) and Grubert and Slemrod (1998), following the setup in Suárez Serrato (2019). We assume that firms have affiliates in J countries. Production in country j is given by $f_j(\cdot)$, which is increasing in capital, $f_j'(K_j) > 0$, and exhibits decreasing returns to investment, $f_j''(K_j) < 0$. The firm pays a nondeductible cost of capital ρ. Absent profit shifting, global after-tax profits are given by $\sum_j [(1-t_j)f_j(K_j) - \rho K_j]$.[20]

We consider two dimensions of tax monitoring regimes: compliance requirements F_1, and enforcement F_2. The firm's compliance cost is $\theta_1 F_1$. To model the role of enforcement, we assume that firms can engage in profit shifting by misreporting profitability as r_j, while true profitability is $\bar{f}_j = f_j(K_j)/K_j$. Firms face fines when they are caught misreporting. The expected cost of misreporting is given by $\frac{F_2}{\theta_2}\frac{K_j(r_j-\bar{f}_j)^2}{2}$, where F_2 is the enforcement parameter controlled by the tax authority and θ_2 is the ability of the firm's accountants to structure intra-group transactions to avoid detection.

2.2 Profit Shifting and Production

We start by characterizing the profit shifting and production decisions of multinationals. We then consider how tax monitoring reforms affect the choice of accountants. Fixing (θ_1, θ_2) and the capital allocation $\{K_j\}$, firms set reported profits to solve

$$\max_{\{r_j\}} \sum_j K_j \left[(1-t_j)r_j - \rho - \frac{F_2}{\theta_2}\frac{(r_j-\bar{f}_j)^2}{2}\right] - \theta_1 F_1, \qquad \text{subject to: } \sum_j \bar{f}_j K_j = \sum_j r_j K_j,$$

where we constrain firms to report global profit truthfully.[21] Reported profits are then given by $r_j = \bar{f}_j + \frac{\theta_2}{F_2}(\tilde{t} - t_j)$, where $\tilde{t} = \frac{\sum_j t_j K_j}{\sum_j K_j}$ is the capital-weighted average tax rate.[22] To reduce global tax liabilities, multinationals over-report profits in low-tax countries (i.e., $t_j < \tilde{t}$). Profit shifting is greater when the ability to avoid detection through tax planning, θ_2, is high and when enforcement, F_2, is low.

[20] As we discuss above, Chile has a worldwide system with deferral. For simplicity, our model abstracts away from the decision to repatriate foreign profits, assuming that the firm chooses to retain foreign profits indefinitely.

[21] Firms would simply choose to not report any global profits absent such a constraint.

[22] This expression re-creates the known result (see, e.g., Devereux and Griffith, 1998) that profit shifting decisions (i.e., the difference between real and reported profits) depend on statutory tax rates, which we use in our empirical analysis.

Given this profit shifting strategy, firms solve the following capital allocation problem

$$\Pi(\theta_1, \theta_2, F_1, F_2) \equiv \max_{\{K_j\}} \underbrace{\sum_j \left[(1-t_j)f_j(K_j) - \rho K_j\right]}_{\text{Real Profits} \equiv \pi(\theta_2, F_2)} - \theta_1 F_1 + \frac{\theta_2}{F_2} \underbrace{\sum_j K_j \left[(1-t_j)(\tilde{t}-t_j) - \frac{(\tilde{t}-t_j)^2}{2}\right]}_{\text{Profit Shifting} \equiv \psi(\theta_2, F_2)},$$

which follows from substituting the optimal profit shifting strategy into the profit function. This equation decomposes the value function, $\Pi(\theta_1, \theta_2, F_1, F_2)$, into real profits, $\pi(\theta_2, F_2)$, compliance costs, $\theta_1 F_1$, and the gains from profit shifting, $\frac{\theta_2}{F_2}\psi(\theta_2, F_2)$.

2.3 Tax Monitoring and Tax Planning

To analyze the tax planning response, we now consider how tax advisors may impact the effects of monitoring reforms. Firms can have in-house accountants, denoted by I, or consult with a specialized firm, denoted by C. Specialized consulting firms can provide compliance support at a lower cost than in-house experts, i.e., $\theta_1^C < \theta_1^I$, and have more expertise in tax planning, i.e., $\theta_2^C > \theta_2^I$. Firms have idiosyncratic costs and benefits $\theta_{0,i}^C \sim G(\cdot)$ from contracting external services. For simplicity, we assume $\theta_2^I \approx 0$, implying that firms with in-house accountants do not engage in profit shifting.[23]

An individual firm seeks the services of consulting firms whenever the additional profit exceeds the cost of contracting with outside consultants:

$$\Delta\Pi \equiv \underbrace{\left[\pi(\theta_2^C, F_2) - \theta_1^C F_1 + \frac{\theta_2^C}{F_2}\psi(\theta_2^C, F_2)\right]}_{\Pi^C} - \underbrace{\left[\pi(0, F_2) - \theta_1^I F_1\right]}_{\Pi^I} > \theta_{0,i}^C.$$

The fraction of firms that rely on consulting firms is given by $N^C = G(\Delta\Pi)$.

Since consultants have lower compliance costs, increasing information reporting requirements F_1 increases the share of firms using consultants $\frac{\partial N^C}{\partial F_1} = G'(\Delta\Pi)(\theta_1^I - \theta_1^C) > 0$. In contrast, increasing enforcement penalties F_2 lowers the tax benefits from profit shifting, which reduces the share of firms that use consultants $\frac{\partial N^C}{\partial F_2} = -G'(\Delta\Pi)\frac{\theta_2^C}{F_2^2}\psi(\theta_2^C, F_2) < 0$.

Define average profits across firms as $\Pi = \mathbb{E}\left[\max\{\Pi^C - \theta_{0,i}^C, \Pi^I\}\right]$ and note that

$$\frac{\partial \Pi}{\partial F_1} = -(\theta_1^C N^C + \theta_1^I(1-N^C)) \equiv -\bar{\theta}_1 \quad \text{and} \quad \frac{\partial \Pi}{\partial F_2} = -\frac{\theta_2^C}{F_2^2}\psi(\theta_2^C, F_2)N^C.$$

[23] This can be understood as a normalization that establishes a baseline for comparison. While in-house accountants may engage in some degree of tax planning, setting $\theta_2^I \approx 0$ allows us to cleanly identify the incremental effect of external tax consultants' expertise on firms' tax planning capabilities. This modeling choice reflects our empirical findings that firms significantly increase their tax planning sophistication when engaging external consultants.

These equations show how increasing compliance requirements and penalties affect average profits. Increasing compliance requirements lowers profits by the average compliance cost across firms and increasing penalties reduces profits of firms that use consulting accountants by limiting benefits from profit shifting.

2.4 Tax Monitoring and the Demand for Tax Planning

We assume $F_1 = \gamma F_2$, where γ represents the relationship between compliance requirements and penalties. The government's problem is:

$$\max_{F_2} \ \Pi \ \text{ subject to } \ t_1(N^C\tilde{\pi}_1^C + (1-N^C)\tilde{\pi}_1^I) - a(F_1, F_2) > R,$$

where taxes paid on reported profits are $t_1(N^C\tilde{\pi}_1^C + (1-N^C)\tilde{\pi}_1^I)$ and $a(F_1, F_2)$ represents administrative costs. The welfare effect of a tax monitoring reform that increases F_2 is then:

$$\underbrace{-\gamma\bar{\theta}_1 - \frac{\theta_2^C}{F_2^2}\psi(\theta_2^C, F_2)N^C}_{\text{(1) Effect on Profits<0}} \underbrace{-\lambda\left[\gamma\frac{\partial a}{\partial F_1} + \frac{\partial a}{\partial F_2}\right]}_{\text{(2) Administrative Costs > 0}} + \underbrace{\lambda t_1 N^C \frac{\partial \tilde{\pi}_1}{\partial F_2}}_{\text{(3) Effect on Reported Profits > 0}} \underbrace{-\lambda\left[\gamma\underbrace{\frac{\partial N^C}{\partial F_1}}_{>0} + \underbrace{\frac{\partial N^C}{\partial F_2}}_{<0}\right]}_{\text{(4) Effect on Accounting Choice}} \underbrace{t_1\Delta\tilde{\pi}_1}_{\text{(5) Diff in Reported Profits > 0}}, \tag{1}$$

where λ is the Lagrange multiplier of the budget constraint and $\Delta\tilde{\pi}_1 = \tilde{\pi}_1^I - \tilde{\pi}_1^C > 0$ is the difference in reported profits between firms that use in-house accountants and those that use consultants.

The reform affects profits, administrative costs, reported profits, and firms' choice of accountants. It lowers profits by increasing compliance costs for all firms and reducing profit shifting for firms that engage in such practices. The reform also increases administrative costs for the government. Additional penalties can reduce profit shifting and boost tax collection. The policy's effect on firms' accountant choices can increase or decrease consulting service use. Lower γ means smaller negative impacts on profits and administrative costs, potentially reducing multinationals' reliance on consultants and their profit-shifting technologies, thus increasing tax revenue. Reforms with stronger enforcement and lower compliance costs generally raise welfare and revenue more effectively.

In our empirical setting, the reform increased consultant use, suggesting high compliance costs with weak enforcement. This highlights the risk of regulations inadvertently encouraging tax planning, as firms may establish relationships with consultants who, while aiding compliance, may also reduce tax revenue through sophisticated planning strategies.

2.5 Tax Monitoring and the Supply of Tax Planning

Our analysis of tax planning services extends to the supply side, revealing the elastic nature of these services due to the multinational structure of major tax advisory firms. The reform's alignment with international standards allowed consultancies to leverage their global expertise. Their multinational structure facilitated rapid deployment of experienced professionals and efficient scaling of services across countries. This global knowledge transfer is reflected in our model through the relative differences in accounting technologies (i.e., $\theta_1^C < \theta_1^I$ and $\theta_2^C > \theta_2^I$). This scalability allowed widespread adoption of tax planning strategies without significant price increases.

3 Data

3.1 Administrative and Other Quantitative Data

We use administrative micro-level data from the tax authority and customs. Tax data cover corporate income tax filings of the universe of internationally active firms, including sales, payroll, taxes, as well as firm characteristics. Mandatory tax annexes provide information on payments to foreign firms, detailing amounts, recipient countries, relationship to the foreign firm, and type of payment: royalties, services, interests, and "other."[24]

Customs data contain transaction-level information on imports and exports, including product, price, quantity, and country of acquisition or destination. However, it does not include information on whether trade is intra-group. We therefore need to triangulate with tax annexes to identify trade that is likely to be with affiliates (and trade that is likely not with affiliates). From 2012 onward, firms report in mandatory tax annexes the total amounts of imports and exports with foreign affiliates by country. We combine these tax annexes with customs data to identify likely intra-group trade (described in more detail in Section 5.2).

We complement the administrative data with information from Orbis and Dun & Bradstreet to identify firms with undisclosed multinational status, and with international information on statutory corporate tax rates for countries to which Chilean multinationals make payments. The data on tax rates stems from the Centre for Business Taxation Tax Database (Habu, 2017), complemented with information from OECD (2019b) and KPMG (2019).[25]

[24] The tax data do not include information on payments received from foreign firms.

[25] For countries that do not appear in Habu (2017), we use OECD (2019b) data (30 countries), and for the 18 countries that appear in neither of these two data sources, we use KPMG (2019). For 70% of the observations that appear in multiple data sources, the tax rates are identical. We also provide robustness checks with an alternative way of combining these data sources, or with TaxFoundation (2024) data instead.

Finally, we use employment history data from Revelio Labs, a global dataset that collects publicly available information from online worker profiles, including those on platforms such as LinkedIn (RevelioLabs, 2025). This data includes details on employers, occupation, job titles, and job descriptions over time. See Appendix C for more detail on all data sources.[26]

3.2 Sample and Descriptive Statistics

The study includes all medium and large internationally active firms.[27] We define internationally active firms as those with imports, exports, or payments to foreign firms for royalties, services, interests, and others. We classify a firm as multinational throughout the study period if they report payments to affiliates at any point in 2007 and 2015, or if they are listed as a multinational in the Orbis or Dun & Bradstreet registries.[28] We focus on economically active firms with positive payroll and input costs throughout the study period, which leaves a sample of $11,333$ domestic and $2,755$ multinational firms.

Table 1 presents summary statistics for 2010 (the year before the reform). The variables from corporate income tax filings in Panel A show that multinationals are larger, with mean annual domestic sales of $35 million compared to $5.5 million for domestic firms. Similar size disparities exist in payroll, assets, profits, imports, exports, and taxes. Domestic firms pay an average of $\$64,000$ in corporate income taxes, compared to $\$ 420,000$ for multinationals. Our analysis normalizes outcomes relative to firm size to account for these differences.

Panel B of Table 1 shows payments to firms abroad for royalties, services, and interests among the Chilean firms that made any such payments in 2010. While only 283 out of $11,333$ domestic firms report such payments, over 40% of multinationals do. Multinationals average more than $1.4 million in payments to foreign firms, equating 26% of their taxable profits (EBIT). Among firms with international payments in 2010, multinationals make payments to non-affiliates in 3.1 countries compared to 2.8 countries for domestic firms. In addition, multinationals make payments to affiliates in 5.1 countries, on average.

[26] Note that we cannot link individual firms to consultancies in the administrative data, since in contrast to the US, tax filings in Chile do not include information on whether an external tax professional was involved in the preparation of the filing. In addition, all tax data are at the firm level, and therefore do not separately identify specific departments, such as a transfer pricing department within a consulting firm.

[27] Small firms (those with annual sales below approximately 1 million USD) are exempt from the reform.

[28] This definition is time-invariant, since the data do not allow us to observe whether firms change their multinational status.

3.3 Qualitative Interviews

We complement the quantitative analysis with two rounds of semi-structured qualitative interviews with Chilean transfer pricing experts. The first round in 2014 involved in-person interviews with senior consultants from Big Four firms. The second round in 2021–2022 consisted of video interviews with a wider range of specialists: transfer pricing experts in each of the Big Four and in smaller consulting firms, senior in-house tax professionals from multinational firms, as well as transfer pricing auditors from the tax authority. In total, we conducted 20 confidential interviews (3 in 2014 and 17 in 2021-2022), each lasting about an hour, to explore the tax advisory industry's role, impacts of the reform, and client interactions. Our approach employs open-ended questions to elicit detailed, potentially unexpected responses (Boyd and DeLuca, 2017). This method, combined with quantitative analysis, offers deeper insights into the context and potential mechanisms, which is especially valuable for counter-intuitive results or policy implementation details (Finkelstein et al., 2021). Similar qualitative methods have been effectively used in recent economics research (Starr, 2014; Taubman et al., 2014; Alsan et al., 2019, 2024; Bergman et al., 2024).

The interviews follow a flexible roadmap of open-ended questions, allowing for organic conversation development and discovery of unexpected insights. This approach, detailed in Appendix D, prioritizes depth and duration over quantity of respondents. We conducted multiple interviews with several participants, enabling clarification, exploration of new themes, and building trust (Grinyer and Thomas, 2012). This process allowed us to adapt our roadmap based on emerging themes and cross-validate experiences across respondents.[29] We use an iterative process between quantitative and qualitative analysis, testing hypotheses generated in qualitative interviews in the quantitative data.

4 Do Multinationals Make Tax-Motivated Payments out of Chile?

Before investigating the impact of the reform we examine whether Chilean multinationals engage in tax-motivated transactions with foreign affiliates. If there were no tax-motivated payments to begin with, this would explain the lack of impact of the reform. We therefore examine whether multinationals' payments respond to differences in tax rates in the countries of their affiliates, by estimating the semi-elasticity of intra-group payments with respect to

[29]Two topics that only emerged after our initial interviews were, for example, the practice of up-selling from tax compliance to tax planning and the centralization of cost centers as a common tax planning strategy.

destination country tax rates. Systematically larger payments to affiliates (relative to non-affiliates) in countries with lower tax rates suggests a tax-reduction motive.

We analyze payments by Chilean multinationals for royalties, services and interests, using intra-firm, intra-destination country variation. This analysis compares payments to affiliates (which reduce tax liabilities) to payments to non-affiliates (which do not) by the same firm in the same destination country. We use the following difference-in-differences specification:

$$\ln(Y_{ijgt}+1) = \alpha + \beta_1 \text{TaxRate}_{jt} + \beta_2 \text{TaxRate}_{jt} \times \text{Intra-group}_g + \beta_3 \ln(\text{GDPpc})_{jt} + u_{it} + \gamma_{ig} + \mu_j + e_{ijgt} \quad (2)$$

Y_{ijgt} is the amount paid by firm i to firms in destination country j in year t for total payments, royalties, services, interests, and "other/unclassified", respectively. *Intra-group*$_g$ is a dummy indicating whether payments are intra-group (i.e., made to affiliates), subscript g indicates intra-group transactions, *Tax Rate*$_{jt}$ denotes the statutory corporate tax rate.[30] β_1 captures the semi-elasticity of intra-group payments with respect to destination country tax rates. β_2 is the difference in this semi-elasticity between intra-group and non-intra-group payments. e_{igjt} is the error term. If payments are tax motivated, we would expect a negative semi-elasticity for affiliate payments but not for non-affiliate payments (β_1).[31]

We control for destination country GDP per capita ($\ln(\text{GDPpc})_{jt}$) to distinguish tax rate changes from economic developments. Firm $\times$ year fixed effects (u_{it}), destination country fixed effects (μ_j), and firm $\times$ intra-group status fixed effects (γ_{ig}) account for firm-level shocks, country-specific factors, and time-invariant differences in affiliate vs. non-affiliate payments, respectively. Throughout this paper, we cluster standard errors at the firm level and winsorize continuous variables in levels at the 99$^{\text{th}}$ percentile to mitigate outlier effects.[32] The sample for this analysis includes all multinationals reporting any payments to foreign affiliates in 2007-2015. We use a balanced panel at the firm $\times$ year $\times$ intra-group status $\times$ country-level to ensure that results are not driven by changes in the network of affiliates.

[30] Over this period, there were corporate tax changes in 60 out of the 91 countries where firms in our sample reported having an affiliate. To show how these changes generate variation across multinationals, we residualize *Tax Rate*$_{jt}$ from firm $\times$ year fixed effects and plot the magnitude of the changes in these residuals in Figure A.2. This figure shows considerable variation in tax incentives across affiliates. A one standard deviation change in tax rates corresponds to a 1.98 percentage point change in the corporate rate and moving an affiliate from the 10$^{\text{th}}$ to the 90$^{\text{th}}$ percentile represents a tax increase of 4.38 percentage points.

[31] 51% of multinationals in this sample make international payments to both affiliates and non-affiliates.

[32] We do not believe these outliers are driven by errors, rather, some firms have very large transactions. Winsorizing ensures that our results are not sensitive to these extreme values.

Equation 2 aligns with extensive international tax research on the impact of tax differentials on cross-country reported profits (see Heckemeyer and Overesch, 2017, for a survey).

Table 2 shows that intra-group payments for royalties, services, and interests indeed respond to destination country tax rates, while payments to non-affiliates do not. Coefficients for non-affiliates (second row) are small and statistically insignificant, indicating that results are not driven by confounding factors. In contrast, intra-group payments show a significant negative semi-elasticity. A 1% lower destination country corporate tax rate is associated with a 5.1 to 5.5 log point increase in total payments (1% significance). Analysis by type of payment shows that a large part of the effect is driven by royalties and services. This is consistent with the notion that payments for which market prices are more difficult to determine are more susceptible to manipulation. These results are robust to a number of sensitivity checks described in Appendix E.[33]

Overall, Table 2 shows that intra-group payments of multinationals respond to tax differentials across countries. The Chilean reform was motivated by the belief that a substantial part of these payments represents profit shifting and that tax monitoring would curtail this behavior and increase tax revenues.

5 Impact of the reform

5.1 Impact of the Reform on Intra-Group Payments

We now analyze whether the reform achieved the policy goal of reducing the propensity of multinationals to shift profits to lower-tax countries through intra-group payments. We use the following time-varying version of Equation 2:

$$\begin{aligned}\ln(Y_{ijgt}+1) = {} & \beta_1 \text{Tax Rate}_{jt} + \beta_2 \text{Tax Rate}_{jt} \times \text{Intra-group}_g + \beta_3 \text{Tax Rate}_{jt} \times \text{Intra-group}_g \times \text{Post}_t \\ & + \beta_4 \text{Post}_t + \beta_5 \text{Tax Rate}_{jt} \times \text{Post}_t + \beta_6 \text{Intra-group}_g \times \text{Post}_t \\ & + \beta_7 \ln(\text{GDPpc})_{jt} + u_{it} + \alpha_{ig} + \mu_j + e_{ijgt} \end{aligned} \tag{3}$$

[33] First, Table 2 Panels B and C show that results are similar for different lengths of the post-treatment period. Estimates are also not sensitive to differences between destination countries' and Chile's tax rates (Table B.1) or using alternative tax rate data sources (Tables B.2 and B.3). Results are also robust to including different fixed effects: firm × year × intra-group status (Table B.4); destination country × year (Table B.5); firm × destination country (Table B.6); and firm × destination country × intra-group status (Table B.7), which are identified by differences in destination country tax rates. In recent work, Chen and Roth (2023) discuss potential issues with interpreting treatment effects as semi-elasticities when analyzing log-transformed outcomes with zeros. We follow their recommendations and show additional checks in Tables B.8,B.9, B.10, B.11, B.12, B.13, B.14, and B.15. We find a systematic negative semi-elasticity of international intra-group payments with respect to destination country tax rates. Finally, we show robustness by analyzing a subsample of firms engaged in international trade (Table B.16), relevant to Section 5.

$Post_t$ indicates years 2011 and later. β_2 represents the pre-reform difference in semi-elasticity between affiliate and non-affiliate payments. If the policy change was effective in reducing profit shifting, the (negative) semi-elasticity should become smaller in absolute terms; that is, the coefficient β_3 would be positive.[34] The identifying assumption is that absent the reform, a given firm's sensitivity to destination country tax rates would have evolved in parallel for payments to affiliates and non-affiliates.

Figure 1 shows the results. First, in line with the identifying assumption, there is a parallel trend prior to the reform. As in all event study figures, we fix 2009 as the baseline year, leaving 2010 as a placebo year. Second, we see no reduction in the sensitivity of intra-group payments to tax rates after the reform (which would be reflected in a positive slope).[35] This is the case for all payment types (royalties, services, interests, and "other").

Table 3 displays these findings in regression form. The second row shows the semi-elasticity of intra-group payments in the pre-treatment period and the first row shows changes after the reform. Again, we see no reduction in the semi-elasticity (which would imply a positive coefficient) for any type of payment and the different lengths of post-treatment years included. If anything, the sensitivity to foreign tax rates is somewhat larger after the reform (not statistically significant for most specifications). Estimates reject any substantial reduction in tax sensitivity post-reform. Panel A, Column (1) shows a baseline semi-elasticity of -0.049 and a change of -0.013. The 95% confidence interval of -0.034 to 0.007 indicates an upper bound of the change in elasticity from -0.049 to -0.042 .[36]

5.2 Impact of the Reform on Trade in Goods

Multinationals can shift profits to lower-tax countries by increasing amounts or prices of imports from or decreasing exports to affiliates in such countries. We analyze the responsiveness of trade in goods with respect to foreign tax rates for trade that is likely intra-group vs trade that is likely not intra-group. While this analysis is similar to the one in Section 5.1, for trade in goods it is more challenging to identify, which transactions are intra-group. To do so, we combine information from customs (which does not include the affiliation status of the trading partner) with information from tax annexes on trade in goods (which does

[34] In Equation 3, the semi-elasticities β_2 and β_3 are identified by both cross-sectional differences in tax rates across countries and changes in tax rates in each of the pre/post periods.

[35] Figures B.1 and B.2 support the robustness of the results to changes in the order of tax rate sources and to a substitution in the data source for tax rates respectively, as previously described in Section 4.

[36] Tables B.17–B.32 support these findings across the same robustness checks as for Table 2. We find no reduction in the semi-elasticity for intra-group trade after the reform.

not include information on trade with non-affiliates).

Starting in 2012, multinationals are required to file a special tax annex with amounts of intra-group imports and exports by country. We compare this to the total amount of imports and exports by country in customs data. We designate trade as "likely intra-group" in firm-country cases where these amounts are close to each other. Similarly, when the amounts of intra-group imports from (or exports to) a given country in the tax annexes of a firm are close to zero, we designate this firm's trade with that country as "likely not intra-group".[37] See Appendix E for more details. This allows us to analyze the sensitivity of payments for likely intra-group trade with respect to tax rates in trading partners' countries.

One benefit of the customs data—compared to the tax data on payments for royalties, services and interests—is that it includes both imports and exports, and also unit prices and quantities in addition to amounts of payment.[38] Our analysis compares total annual payments, annual quantities and average unit prices of country-firm pairs which are likely intra-group trade to those of country-firm pairs which are likely not intra-group trade.

$$\begin{aligned}\ln(Y_{ijqt}) = \alpha &+ \beta_1 \text{Tax Rate}_{jt} + \beta_2 \text{Tax Rate}_{jt} \times \text{Intra-group}_{ij} + \beta_3 \text{Tax Rate}_{jt} \times \text{Intra-group}_{ij} \times \text{Post}_t \\ &+ \beta_4 \text{Post}_t + \beta_5 \text{Tax Rate}_{jt} \times \text{Post}_t + \beta_6 \text{Intra-group}_{ij} \times \text{Post}_t \\ &+ \beta_7 \ln(\text{GDPpc})_{jt} + u_{iq} + e_{ijqt} \end{aligned} \tag{4}$$

Here, Intra-group_{ij} is a dummy equal to 1 when the firm-country pair is likely intra-group trade and equal to 0 if it is likely not intra-group. u_{iq} are firm $\times$ quarter fixed effects. This analysis thus leverages intra-firm but inter-country variation in tax rates. The identifying assumption is that, absent the reform, a given multinational's sensitivity to trading country tax rates would have evolved in parallel for firm-country pairs that are likely intra-group trade and pairs that are likely not intra-group.

Table 4 shows the results. They are consistent with the findings for royalties, services and interests discussed above. First, we see a negative semi-elasticity of outbound intra-group payments (i.e., imports) to affiliates with respect to destination country tax rates. We also

[37] For robustness, we show results for different bandwidths for defining likely intra-group trade, based on the ratio of imports (exports) in the tax annex to imports (exports) for a given firm-country pair in the customs data: 80%–120%, 90%–110%, 95%–105%. Similarly for trade that is likely not intra-group: 0%–20%, 0%–10%, 0%–5%. Intra-group trade reported in tax annexes can be larger than trade in the customs data due to measurement error, for example, from differences in timing between payments and shipment.

[38] We analyze average unit prices from products at the 8-digit product level traded across firm-trading partner country pairs in a given quarter. Product codes are generated by combining 6-digit Harmonized System (HS) codes with 2-digit codes for measurement units. Product codes, unit prices, and total amounts are directly recorded by Chilean customs.

see the converse for inbound payments (i.e., exports), though the latter is not statistically significant. Second, this responsiveness to tax rates in affiliated firms' countries does not decline after the reform. Finally, we look at prices and quantities separately. The event study in Figure 2 displays these results graphically. It shows parallel pre-treatment trends and no reduction in the sensitivity of likely intra-group payments to tax rates after the reform for all six outcome variables.[39]

5.3 Impact of the Reform on Tax Payments

Having found no impact on intra-group payments for royalties, services, interests, or goods, we now examine the reform's overall effect on corporate income tax payments. For this analysis, we can no longer use an intra-firm design as above (as there is only one outcome per firm and year, i.e., tax paid.). Instead, we compare tax payments by multinationals to those of internationally active domestic firms with similar characteristics. Because multinationals are larger and tend to operate in different industries, we follow Yagan (2015) by scaling the outcome by firm size and controlling for pre-treatment characteristics × year.[40] Pre-treatment characteristics include industry, sales, sales/payroll, and sales/assets (both linearly and in quadratic terms). The latter two variables capture firm technology.[41] We then estimate the following difference-in-differences regression and its event study equivalent:

$$\frac{Y_{it}}{\text{Payroll}_{it}} = \alpha_0 + \beta_1 \text{Multinational}_i + \beta_2 \text{Post}_t + \beta_3 \text{Multinational}_i \times \text{Post}_t + \beta_4 X_{it} + e_{it} \qquad (5)$$

Y_{it} is the outcome for firm i in year t, $Multinational_i$ and $Post_t$ are dummies for multinational status and post-treatment period, X_{it} are pre-treatment characteristics interacted with year fixed effects. The identifying assumption is that absent the reform, conditional on the control variables, firm outcomes would have evolved in parallel. Since this analysis relies on inter-firm comparisons, we conduct additional tests of the plausibility of this assumption.

First, we provide a "placebo" test with domestic sales (scaled by payroll) as the outcome. Local sales are unlikely to be affected by the reform but may reflect potential differential impacts of other shocks (e.g., recovery from the global financial crisis, the Chilean earthquake of 2010, or Chile's accession to the OECD). Figure 3 (a) show this placebo test. We see a

[39] Figures B.5 and B.6 and Tables B.35 and B.36 show different bandwidths for the definition of trade that is likely (and likely not) intra-group. Figures B.7 to B.12 analyze different product groups.

[40] As shown in Table 1, while multinationals pay over 6.5 times more taxes than internationally active domestic firms, their tax/payroll ratios are very similar.

[41] Since 2010 is the placebo year, we only include data from 2007-2009 to construct pre-treatment variables.

parallel evolution of the placebo outcome throughout the pre- and post-treatment period.[42]

Figure 3 (b) displays the evolution of corporate income tax payments. There are, again, no differential pre-trends.[43] Maybe unsurprisingly, given that we find no reduction in profit shifting for any of the channels analyzed above, there is no significant increase in tax payments by multinationals after the reform. Contrary to government expectations, the reform seems to have been ineffective at raising additional tax revenue from multinationals.

The difference-in-difference estimates of the impact on corporate income tax payments range from -0.00027 to 0.00085 (Table A.2) depending the duration of included post-treatment years. None of them are close to statistical significance. Compared to the average corporate income tax payments in 2009, these estimates correspond to a percentage change of -0.18% to $+0.58\%$.[44] For comparison, Tørsløv et al. (2023) estimate that in 2015, Chile lost the equivalent of 20% of multinationals' corporate tax revenue to profit shifting.[45]

The overall null effect on tax payments may mask heterogeneity across types of firms. We examine whether there are significant effects for types of multinationals for which the reform might be particularly effective, based on firm size, pre-treatment tax payment behavior, presence of affiliates in tax havens, ownership structure, the timing of multinational status disclosure, export-orientation and sector. The null effect persists across all subgroups (though of course less precisely estimated), indicating that the absence of an overall effect is not driven by hidden observable heterogeneity (Figure A.4).[46]

In sum, our comprehensive analysis of tax payments and all potential profit-shifting channels, using administrative tax and customs data, consistently indicates that the reform did not reduce overall profit shifting. To gain a deeper understanding of these results, we conducted qualitative interviews with transfer pricing experts.

[42] Following Yagan (2015), outcomes in event study figures are expressed in standard deviations. Table A.3 displays the placebo test in regression form.

[43] We do not know why tax payments seem to be somewhat higher in 2008 for multinationals. One potential explanation could be related to the global financial crisis, e.g., due to a reduction in tax-reducing investments.

[44] These results on sales and corporate income tax are robust to restricting the sample to firms with the same range of pre-treatment average sales (Figure B.13 and Table B.37), assets (Figure B.14 and Table B.38) and to scaling the outcome variable by lagged payroll (Figure B.15 and Table B.39). Including audit-related payments does not substantially alter our conclusions, as shown in Figure A.3 and Table A.4, Column (2).

[45] By comparison, the global loss of corporate tax revenue is 9% (Tørsløv et al., 2023).

[46] For a comprehensive discussion of the subgroup analysis, see Appendix E.

6 Role of the Tax Advisory Industry

Tax advisors help multinational firms comply with complex national and international regulations, ease the administrative burden of complying with tax laws, and help firms avoid paying more than what is due. The transfer pricing regulation aimed to shut down key tax-avoidance loopholes and opportunities, but in doing so, added legal complexity and administrative requirements.

To better understand the role of tax advisors, we carried out two rounds of in-depth qualitative interviews, with experts in different areas of the transfer pricing space as explained in Section 3 and Appendix D. The qualitative interviews yield six key insights:

1. The reform was a large boon to the tax advisory industry, increasing the number of experts working in transfer-pricing consulting 12-fold within three years.
2. The strong surge in demand was initially led by the complexity of the new reporting requirements, which drove many multinationals to seek compliance support from specialized consulting services.
3. There are strong complementarities between compliance support and tax planning services. Tax consultants had strong incentives to up-sell clients on additional tax planning services. Moreover, once the fixed costs of organizing the books for compliance had been paid, the marginal cost of such planning was lower.
4. The supply response was very elastic because of the global nature of this industry. The Big Four were able to respond quickly to this demand shock by reallocate international experts to Chile who could then train the next generation of local advisors.
5. A common piece of tax planning advice was to centralize cost centers in fewer locations, which is optimal both from a tax efficiency and business perspective. We corroborate these patterns using the quantitative data.
6. Tax administrators are outmatched by consulting firms both in the number of transfer pricing staff and their salaries, and there is a pattern of revolving doors for transfer pricing experts between the two sectors. Consulting firms see additional enforcement actions by the government as a business opportunity, suggesting that tax authorities face an uphill battle in the race between tax enforcement and tax planning.

In what follows, we document these insights using quotes from our interviews that are

representative of recurring themes, following the approach of DeLuca et al. (2019).[47] More quotes on each of these topics can be found in Appendix D. Where possible, we then circle back to the quantitative data to corroborate insights from the interviews.

1. Growth in tax advisory: Consultants at the Big Four shared that the transfer pricing reform presented a tremendous growth opportunity for them. We asked them about their staffing levels before and after the reform. Figure 4 illustrates this dramatic expansion. Panel (a) shows the number of transfer pricing consultants in each of the Big Four: each firm grew from just two specialists to an average of 24, resulting in a 12-fold increase from 8 to 95 transfer pricing consultants across the four companies. We corroborate this finding with the employment data from Revelio in Panel (b). Despite potential measurement error in both data sources, they mirror each other closely, even at the firm level. The Revelio data show a 7-fold increase from 9 to 67 transfer pricing consultants.[48]

Using the Revelio data allows us to go beyond the information from the interviews, to analyze the evolution of the number transfer pricing consultants for all years in our study period and compare it to that of other professionals. Figure 5 displays these results. First, it shows the increase of transfer pricing consultants (within and outside of the Big Four) started in 2011, accelerating through 2013 and continued until the end of the study period. Second, this boom was specific to transfer pricing consulting. There is no similar growth either for other tax consultants in the Big Four, tax consultants outside of the Big Four, or other comparable professionals working outside of taxation.[49]

Our interviews revealed three key factors driving the large expansion in transfer pricing consulting: A surge in demand for compliance support, the complementary nature of compliance services and tax planning, and a highly elastic supply of specialized consultants facilitated by the international nature of this market. We now discuss these in turn.

2. Demand for compliance support: Most firms initially sought out consulting firms for compliance support. Many companies struggled to meet the new complex re-

[47] These quotes are translated from Spanish and follow the colloquial style of the oral responses.

[48] One consultant explained these dynamics in the interviews as follows: *"There was very little demand for such services prior to the reform. Before the reform, the companies did little or nothing about transfer pricing, neither with external support nor internally. After the reform, the compliance cost for firms increased. It's not that clients often moved from smaller consulting firms to the Big Four. Most clients were newly taking outside council for this."* Figure A.5 corroborates this statement quantitatively with Revelio data. Such an increase in external tax advisory complements and does not substitute for previous in-house tax accountants.

[49] Other comparable professions include accountants, financial managers and analysts, investment specialists, controllers, and similar professionals working in areas outside of taxation.

porting requirements without specialized assistance. The reform necessitated a significant reorganization of internal bookkeeping and intra-group transaction recording, which placed a substantial burden on companies. Consultants were able to provide information on how to calculate prices in accordance with regulations and industry benchmarks, and how to legally attribute shared costs of services (such as HR, management, branding, etc.) to different affiliates. One company representative stated: *"You spend the same on the preparation of documentation for transfer pricing as on the entire corporate income tax declaration."* Another expert explained that *"The big majority of multinationals contracted the consultants for the new transfer-pricing tax annex. Some did it in-house in the beginning, but it was done poorly, and they received complaint notices from the tax authority. Following this, these firms also started relying on consultants."*

Multinationals preferred external consultants over in-house expertise for two main reasons: First, Big Four consultants offered the most current information on evolving best practices and regulations, as well as access to proprietary databases of comparable price benchmarks.[50] This gave clients more confidence that filings would be "audit-proof".[51] Second, hiring senior experts full-time was too expensive due to their scarcity and high costs.

3. Complementarity of compliance support and tax planning services: Transfer pricing advisory has two main components: compliance support to help firms meet new regulatory requirements and tax planning, which involves complex analyses to design transfer pricing strategies with tax savings potential. Consultants frequently leveraged initial compliance engagements to promote tax planning services, which are more lucrative. In this context, one former Big Four consultant described that *"In the first years, companies were only focused on compliance. We told them every year about tax planning services. For example, 'You are losing a lot of money in this transaction.' And sooner or later, they started to make changes to their transfer prices. Consulting firms see tax planning as a growth opportunity, so they focus on selling tax planning."*[52]

The reform's requirements inadvertently lowered the marginal cost of tax planning by

[50] A senior tax expert at an MNC explained: *"We outsourced this service to a consulting firm. This is cheaper, and the consulting firm can share their best practices from other countries with us."*

[51] One senior consultant stated: *"If firms get surprised by the tax authority, it is sometimes hard to justify pricing ex-post. But if we can plan ex-ante what the justifications are, it's not a problem."*

[52] Another consultant said: *"Because the firms were so ignorant and unorganized before, they did not even realize that they left money on the table. The better one knows the company, the more one learns about more efficient ways to deal with taxes."*

forcing firms to pay the fixed cost of organizing their documentation and learning about transfer pricing rules. Combined with consultants' up-selling efforts, this led many firms to transition from seeking compliance support to more aggressive tax planning strategies.

4. Supply response: The industry's rapid expansion was possible due to the elastic supply of international transfer pricing experts. Consultancies in Chile hired senior experts from other Big Four subsidiaries to meet the surge in demand. As one consultant explained, *"At the beginning, all tax planning experts in the Big Four were foreigners. We brought in the seniors from abroad, Argentina, Venezuela, and Colombia, and then recruited assistants who were Chilean. Today [2021] about 40% of senior transfer pricing experts are Chileans."*

Because these foreign experts already had deep experience with similar transfer pricing regulations in other countries, they brought a wealth of knowledge applicable to the reform, such as how to ensure that complex intra-group transactions complied with OECD guidelines. Without the global nature of this expertise, the fast supply response would not have been possible. As a Big Four consultant noted, *"Top experts have 15+ years of experience. There are only a handful in the country. It takes 4 to 5 years to even become productive."*

5. Centralization of cost centers: A key tax planning strategy recommended by consultants was the consolidation of cost centers in fewer, strategically chosen countries. This approach, used particularly for services like human resources and marketing, can reduce tax liabilities by concentrating costs in lower-tax locations, where they provide the greatest tax advantage. One consultant described that *"many companies started to centralize activities, for example, instead of having a distributor present in all countries, they ordered from one optimally chosen location."*

We can detect this strategy in the tax data. Figure 6 shows a steep decline in the number of countries to which multinationals make intra-group payments after the reform. The number of countries to which firms make intra-group payments decreased by 36% (Table 5 Panel C). This decline stems from non-tax havens, with no change for tax havens. Consistent with what interviewees shared, the consolidation of cost centers is strongest for services.

6. Fighting a losing battle: Many interviewees also reported that the tax authority was outmatched by consultants in both staff and salaries. As one consultant put it: *"There are many many more people in the consulting firms, and they are better trained than the team in the tax authority."* One consultant from a Big Four explained the situation as follows:

"The tax authority has a less qualified team. Recently their top expert has also left for a Big Four. It's a big challenge for the public sector to have high-level professionals. Both because the salaries are much lower and the most entrepreneurial types of people get bored."[53]

This imbalance is accompanied by a "revolving door" dynamic, with frequent moves of transfer pricing specialists between consulting firms and tax authorities. As a prime example, an interviewee shared that *"The guy who wrote the regulation for Chilean transfer-pricing reform was subsequently hired for a very high salary by a Big Four."*[54] Another noted that *"The tax authority has a lot of experts who came from consulting firms. Because internally, they didn't have the expertise."* Several experts commended the tax authority for hiring leading experts from Big Four consultancies abroad. *"Chile is an exemplary country with regard to how they implemented this change. They brought experts from the private sector who could do aggressive audits and speak the same language as the tax preparers of the firms."*[55]

We can document this dynamic using the Revelio data. Figure 7 shows how tax auditors and consultants move between the tax authority, the Big Four and other private firms. Out of the auditors who exit the tax authority, the majority move to the Big Four, while most tax consultants who leave the Big Four move to the tax authority. We also observe several individuals who move twice even within the short duration of our study period, going from Big Four to tax authority and back, or vice versa. The transfer pricing industry is particularly vulnerable to this dynamic due to its small number of experts with specialized knowledge.

These patterns are not unique to Chile. A report from the British Parliament (Public Accounts Committee, 2013) describes both the mismatch in resources and revolving doors:

> *"HM Revenue & Customs (HMRC) appears to be fighting a battle it cannot win in tackling tax avoidance. Companies can devote considerable resources to ensure that they minimize their tax liability. There is a large market for advising companies on how to take advantage of international tax law, and on the tax implications of different global structures. [...] HMRC has far fewer resources. In the area of transfer pricing alone there are four times as many staff working for the four firms than for HMRC. [...] We have seen what look like cases of poacher, turned gamekeeper, turned poacher again, whereby individuals who advise the government go back to their firms and advise their clients on how they can use those laws to reduce the amount of tax they pay."*

[53] Another consultant added: *"In Chile, the tax authority has a decent salary, but working at a Big Four, you can earn brutally high amounts."*

[54] Internal knowledge from the tax authority is highly valuable to consultancies. One interview stated: *"Being in the tax authority helps the career. So people go to the tax authority and then leave for the Big Four. This creates a big retention problem for the tax authority."*

[55] As an expert shared: *"The Chilean tax authority brought in a Chilean and a Colombian specialist, both from a Big Four. They both returned to the Big Four after 4-5 years."*

A key question is whether transfer pricing regulation could be more effective if tax authorities were empowered with higher budgets. This seems unclear. Some consultants argued that this would be the case. *"There would be a high tax enforcement return from doing more audits. There is a ton of money to recover if they had the capacity. They are not aware of the amount of money that is there."* On the other hand, increased enforcement would likely be met with a response from the private sector and might further fuel the race between tax authorities and private sector planning. As one consultant put it: *"The Big Four of course benefit when the tax authority audits. The more audits, the better it is for the Big Four."*

7 Conclusion

Our paper studies the effectiveness of a prominent tax monitoring reform using rich administrative data on tax collections, intra-group payments, and international trade. The reform—based on standard OECD guidelines—combines increased information reporting requirements, resources devoted to enforcement, and a change in the burden of proof for justifying the legitimacy of intra-group payments.

Multinationals in Chile make payments to their affiliates abroad that suggest profit shifting for tax minimization purposes. Contrary to the government's expectations, the reform was not effective in reducing this practice: We observe no reduction in the sensitivity of intra-group payments for royalties, services, and interests with respect to differences in the destination country tax rates, and no effect on likely intra-group trade of goods. Consistent with these results, we find no significant increase in tax revenue.

In-depth interviews with transfer pricing experts combined with quantitative employment history data show that while the reform did not increase tax payments, it did have a large effect on the tax advisory industry. The reform led to an immediate surge in transfer pricing consultants, with continued increase throughout our study period. The international standardization of transfer pricing regulations allowed Big Four firms to meet the demand by bringing experts from abroad. When firms approach consultancies for compliance support, consultants often up-sell them on tax planning services. A tax planning strategy that was mentioned frequently in the interviews was the concentration of cost centers. Returning to the administrative data, we indeed find such an effect: a sizable reduction in the number of countries to which multinationals make intra-group payments, particularly for services. Methodologically, our paper illustrates how combining quantitative data with systematic

qualitative interviews can be fruitful in understanding the impacts of policy changes.

Combined, our results cast doubt on the belief that regulations that require increasingly granular information on intra-firm transactions can effectively limit profit shifting. While our quantitative results show that this round of regulations was not effective at reducing profit shifting, our qualitative evidence suggests that such reforms are generally vulnerable to sophisticated tax planning by multinationals and the tax advisory industry.

The reform thus appears to have benefited the tax advisory industry at the expense of multinationals (which pay more for tax-related services) and the government (which spends more on monitoring, without a concomitant increase in tax revenues). The key role that the advisory industry plays for understanding the effects of tax-monitoring regimes on revenue and welfare has several possible policy implications. First, policymakers need to take into account the risk of an increase in sophisticated planning when setting reporting requirements. Second, they could consider strengthening the monitoring and regulation of the providers of tax planning services. These providers could, for instance, be asked to inform the tax authority of new tax-saving strategies they commercialize, or penalties could be increased for providers that sell schemes that turn out to be illegal because they have no economic substance. Studying the optimal policy response and the mediating role of the advisory industry in how policies turn into practice is a fruitful avenue for future research.

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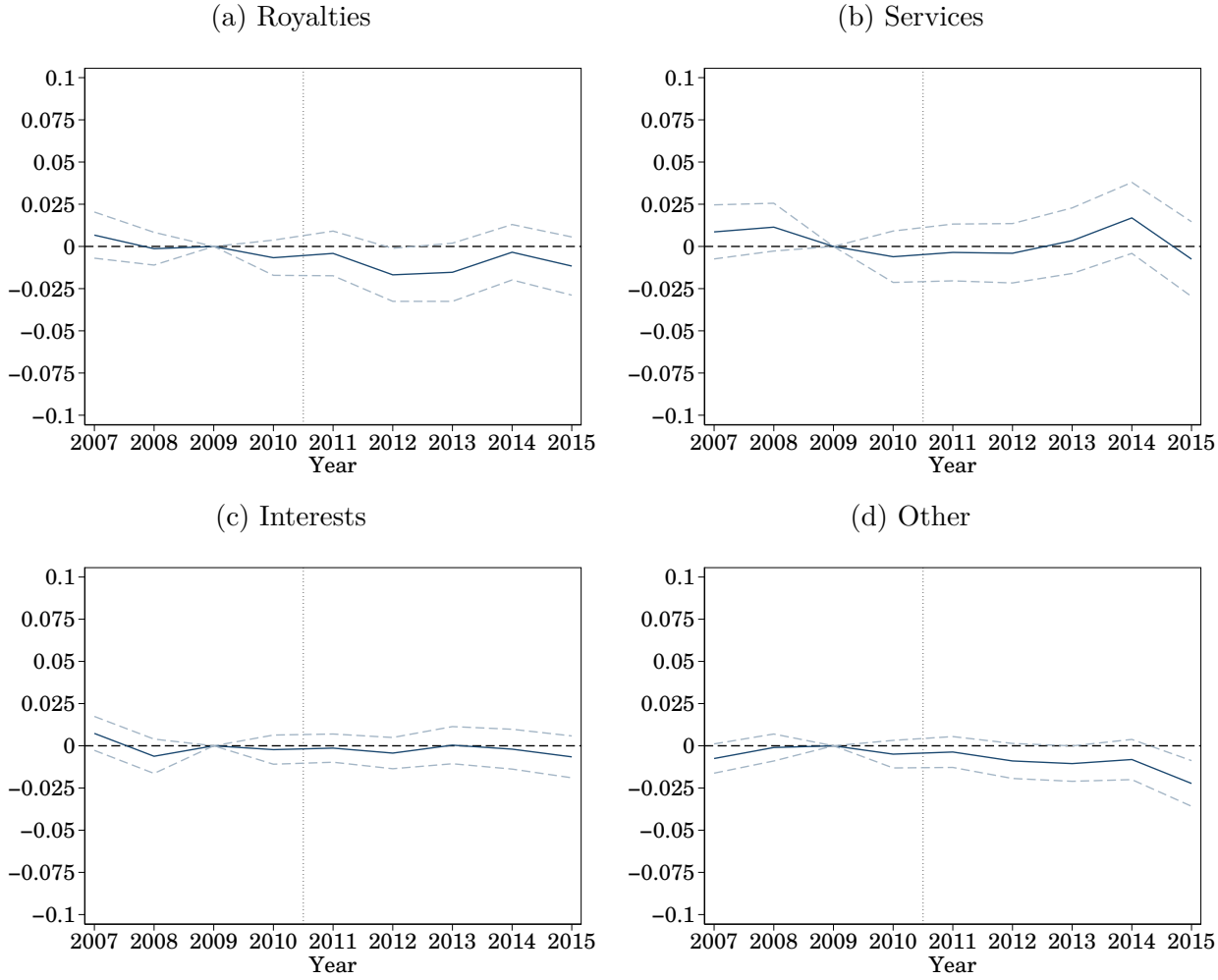
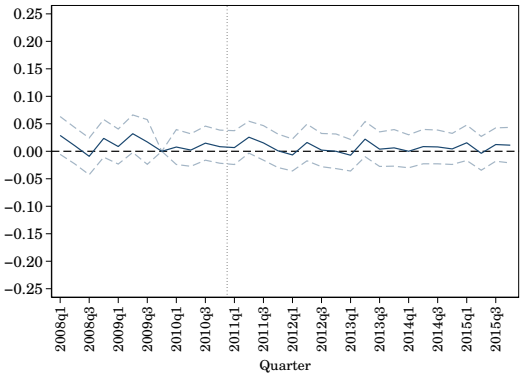
Figure 1:
Impact of the Reform on the Sensitivity of International Payments
to Differences in the Destination Country Tax Rates



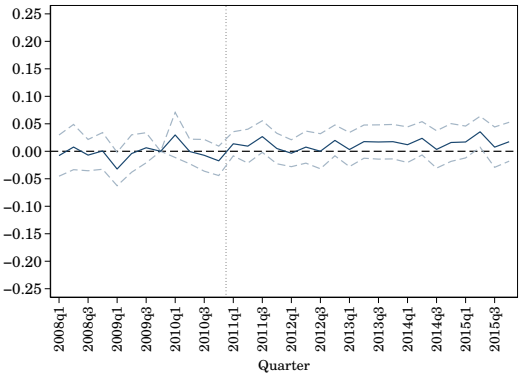
Notes: These figures show the evolution of the semi-elasticity of international payments with respect to differences in destination country tax rates for payments to affiliates compared to payments to non-affiliates, following the event study specification of Equation 3. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown in Table 2. Since we do not see an increase in the semi-elasticity, these figures provide evidence that there is no significant decline in tax-motivated international payments. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. It includes firm $\times$ year, firm $\times$ intra-group status, and destination country fixed effects, as well as controls for destination country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 3 shows the same analysis in regression form.

Figure 2:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates

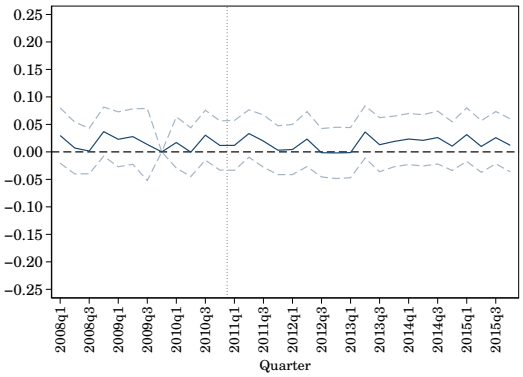
(a) Import Payments



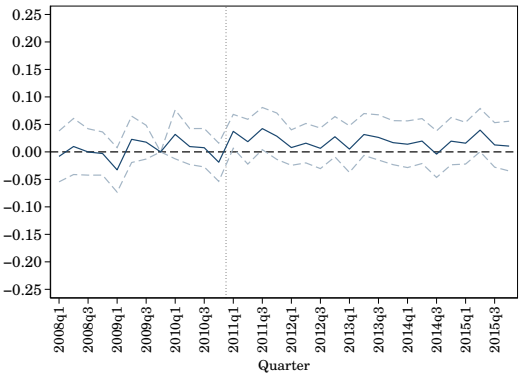
(b) Export Payments



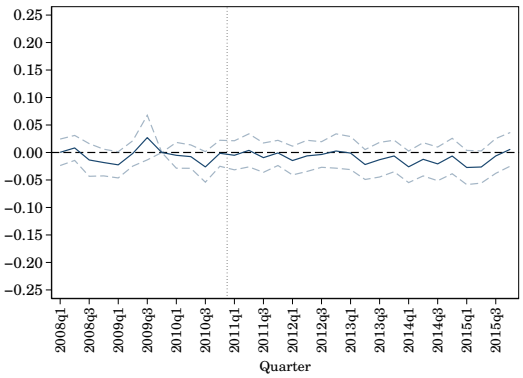
(c) Import Quantities



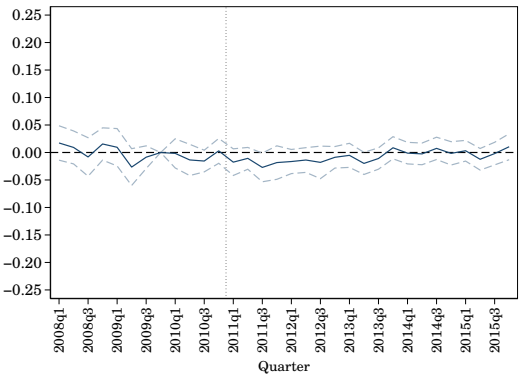
(d) Export Quantities



(e) Import Unit Prices



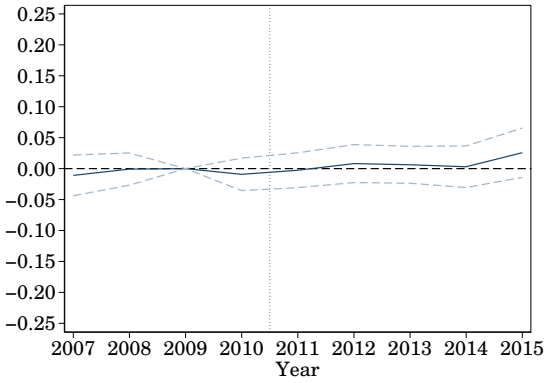
(f) Export Unit Prices



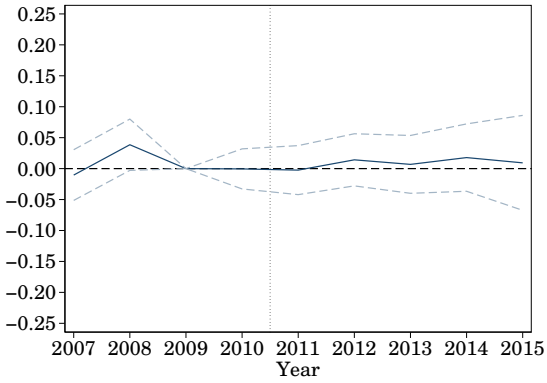
Notes: These figures show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 80% and 120% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 20% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 4 shows the same analysis in regression form. Figures B.5 and B.6 show robustness using different bandwidths for the definition of likely intra-group trade for imports and exports, respectively.

Figure 3:
Impact of the Reform on Domestic Sales and Corporate Income Tax
(Multinational vs. Domestic Firms)

(a) Placebo Test: Impact of the Reform on Domestic Sales



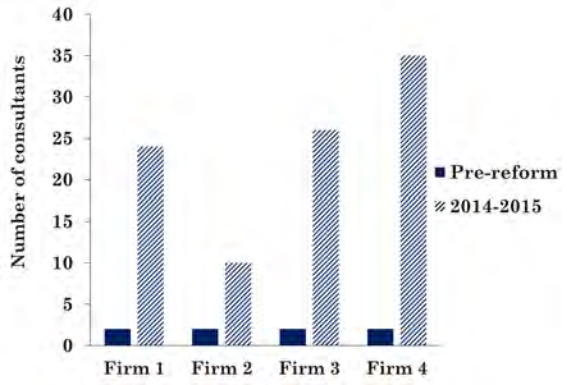
(b) Impact of the Reform on Corporate Income Tax



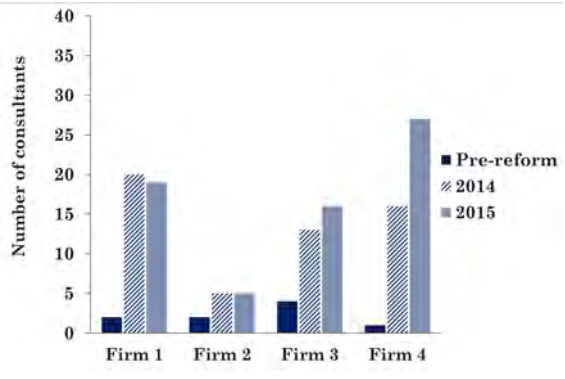
Notes: These figures show impact estimates of the reform on domestic sales/payroll (placebo test) and corporate income tax/payroll, expressed in standard deviations, respectively, following the event study specification of Equation 5, which compares multinationals to internationally active domestic firms. The dotted vertical line indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. Both outcomes are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Tables A.3 and A.2 show the same analysis in regression form.

Figure 4:
Number of Transfer Pricing Consultants in Big Four Consulting Firms in Chile

(a) Interviews

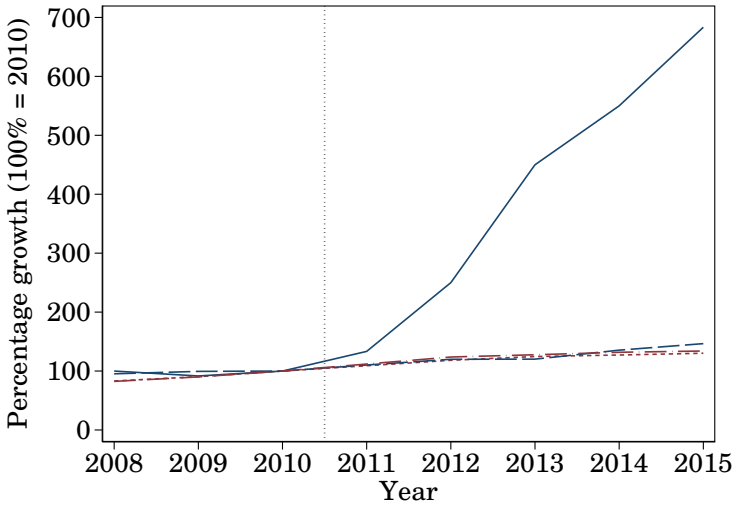


(b) Revelio



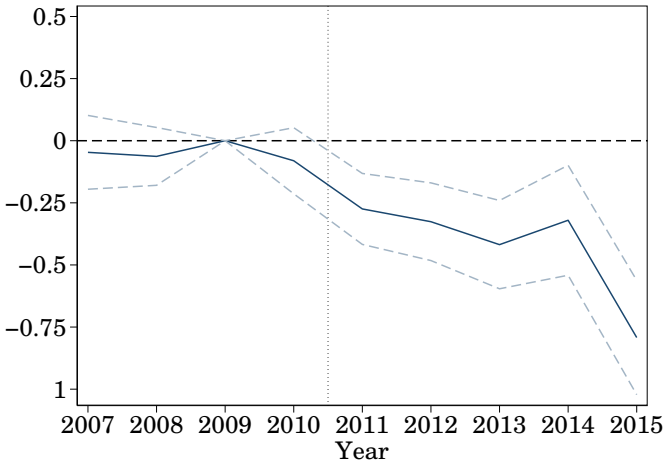
Notes: These figures show the number of transfer pricing consultants working in each of the Big Four firms in Chile before and after the reform. Panel (a) shows the numbers reported in the qualitative interviews for 2010 (pre-reform) and either 2014 or 2015 (post-reform). The values in Panel (b) are based on employment history data from Revelio Labs, showing the average number of consultants for 2008-2010 (pre-reform), and 2014-2015 separately. Transfer pricing consultants are identified in the data using self-reported job titles and descriptions in English and Spanish of positions related to transfer pricing (see Appendix C).

Figure 5:
Impact of the Reform on the Transfer Pricing Industry



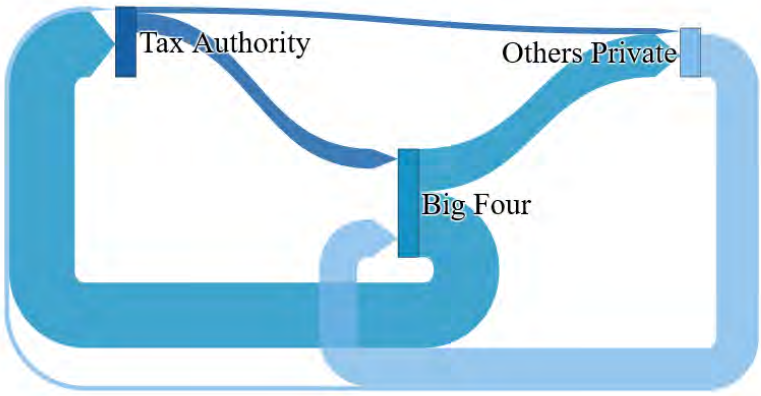
Notes: This figure shows the evolution of the number of transfer pricing consultants (solid blue line) vs. that of other professionals: tax consultants in the Big Four (dashed blue line), tax consultants outside of the Big Four (dashed-dot red line), and comparable professionals working outside of taxation (short-dashed red line). Other comparable professions include accountants, financial managers and analysts, investment specialists, controllers, and similar professionals working in areas outside of taxation. Data from Revelio (see Appendix C), normalized to 2010 = 100%. The dotted vertical line indicates the start of the reform.

Figure 6:
Impact of the Reform on the Consolidation of Cost Centers



Notes: This figure shows impact estimates of the reform based on tax data, using an event-study specification that compares the number of countries in which firms make payments to affiliates to the number of countries in which they make payments to non-affiliates. Analysis at the level of firm-year-intra-group status, i.e., countries to which firm i makes payments to affiliates vs. non-affiliates g in year t. The estimation only includes multinationals and controls for firm, year, and firm × year fixed effects. The dotted vertical lines indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 5 shows the same analysis in regression form.

Figure 7:
Professional Movements of Tax Auditors and Tax Consultants



Notes: This figure shows employment transitions of tax professionals (auditors and consultants) between the tax authority, Big Four consulting firms and non-Big Four firms, based on Revelio data (see Appendix C). The width of each arrow is proportional to the number of moving employees. The sample consists of all 201 workers who worked as a tax auditor or tax consultant during the study period and made a professional transition between these three employer groups (2008—2015). They made a total of 224 transitions during this time.

Table 1:
Firm-Level Summary Statistics, 2010

Panel A. Overall Descriptives
(Full Study Sample)

	(1) Domestic firms	(2) Multinational firms
Domestic sales	5,509	35,443
	(15,537)	(63,234)
	[1,824]	[8,883]
Payroll	881	4,577
	(2,355)	(7,521)
	[306]	[1,495]
Assets	10,834	121,904
	(48,272)	(262,342)
	[2,115]	[17,940]
EBIT	610	5,657
	(2,746)	(13,201)
	[169]	[770]
Exports	309	3,797
	(3,029)	(16,896)
	[0]	[0]
Imports	558	5,270
	(2,842)	(12,759)
	[2]	[225]
Taxes	64	420
	(219)	(1,028)
	[18]	[40]
Taxes/Payroll	0.162	0.163
	(0.330)	(0.395)
	[0.064]	[0.036]
Number of firms	11,333	2,755

Panel B. International Payments
(Sample with International Payments > 0)

	(1) Domestic firms	(2) Multinational firms
Total payments	199	1,446
	(554)	(5,977)
	[49]	[110]
Payments for royalties	95	435
	(278)	(1,673)
	[0]	[0]
Payments for interests	30	512
	(356)	(4,669)
	[0]	[0]
Payments for services	57	330
	(191)	(1,065)
	[1]	[6]
Other payments	16	169
	(200)	(2,038)
	[0]	[0]
Number of countries with payments to non-affiliates	2.8 (2.9) [2.0]	3.1 (5.0) [2.0]
Number of countries with payments to affiliates		5.1 (7.4) [3.0]
Number of firms	283	1,136

Notes: This table shows means, standard deviations (in parentheses), and medians [in brackets]. Statistics in both panels are for 2010, the last year before the start of the reform. Panel A shows data from corporate income tax filings and customs (imports and exports) and Panel B data from mandatory tax annexes. All financial variables are in 1,000 of USD and winsorized at the 99^{th} percentile of non-zero values. Total international payments are computed as the sum of its winsorized components. The study sample includes firms that were at least medium size and internationally active as defined in Section 3.2. The number of firms in Panel B is smaller since it only includes firms with international payments in 2010.

Table 2:
Sensitivity of International Payments to Differences in the Destination Country Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.055***	-0.028***	-0.029***	-0.009**	-0.005
	(0.012)	(0.008)	(0.009)	(0.004)	(0.003)
Tax rate	0.011	-0.006	0.016	0.004	-0.005
	(0.014)	(0.009)	(0.013)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.009**	-0.005
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.015	-0.014	0.034***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.010**	-0.005*
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.022	-0.008	0.037***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table shows the semi-elasticity of international payments with respect to differences in destination country tax rates, following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country relative to non-affiliates, on average. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. Results are not sensitive to differences between the Tax Rate$_{jt}$ in destination countries and Chile's tax rate (Table B.1). Estimates are robust to using alternative sources for tax rate data (Tables B.2 and B.3). They are also robust to including firm × intra-group status × year fixed effects (Table B.4), country × year fixed effects (Table B.5), firm × destination country fixed effects (Table B.6), and firm × destination country × intra-group status fixed effects (Table B.7). Additional robustness is shown by rescaling outcome values in 1,000 USD (Table B.8), calibrating the extensive margin at the 5$^{\text{th}}$ and 10$^{\text{th}}$ percentiles (Tables B.9 and B.10), estimating the regression through Poisson Pseudo-Maximum-Likelihood (Table B.11), normalizing the outcomes in levels by total sales (Table B.12), conducting extensive margin analyses (Tables B.13 and B.14), conducting an IHS transformation of the outcomes (Table B.15), and restricting the estimation sample to multinationals that engage in trade in goods (Table B.16).

Table 3:
Impact of the Reform on the Sensitivity of International Payments
to Differences in Destination Country Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.049***	-0.022***	-0.028***	-0.009*	-0.003
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.047***	-0.022***	-0.027***	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.009	-0.003	-0.002	-0.007**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.045***	-0.021***	-0.025**	-0.009*	-0.001
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table shows impact estimates of the reform on the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure 1. Results are not sensitive to differences between the Tax Rate$_{jt}$ in destination countries and Chile's tax rate (Table B.17). Estimates are robust to using alternative sources for tax rate data (Tables B.18 and B.19). They are also robust to including firm × intra-group status × year fixed effects (Table B.20), country × year fixed effects (Table B.21), firm × destination country fixed effects (Table B.22), and firm × destination country × intra-group status fixed effects (Table B.23). Additional robustness is shown by rescaling outcome values in 1,000 USD (Table B.24), calibrating the extensive margin at the 5$^{\text{th}}$ and 10$^{\text{th}}$ percentiles (Tables B.25 and B.26), estimating the regression through Poisson Pseudo-Maximum-Likelihood (Table B.27), normalizing the outcomes in levels by total sales (Table B.28), conducting extensive margin analyses (Tables B.29 and B.30), conducting an IHS transformation of the outcomes (Table B.31), and restricting the estimation sample to multinationals that engage in trade in goods (Table B.32).

Table 4:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates

	Imports			Exports		
	(1) Payments	(2) Quantities	(3) Unit Prices	(4) Payments	(5) Quantities	(6) Unit prices
Panel A: Up to 2013						
Tax rate × intra-group × post	-0.0050	-0.0043	0.0011	0.0139	0.0187*	-0.0105
	(0.0072)	(0.0096)	(0.0074)	(0.0085)	(0.0107)	(0.0088)
Tax rate × intra-group	-0.0320**	-0.0176	-0.0320***	0.0231	0.0253	0.0167
	(0.0144)	(0.0193)	(0.0108)	(0.0173)	(0.0192)	(0.0110)
Observations	176,128	176,128	176,128	92,292	92,292	92,292
Number of firms	2,280	2,280	2,280	1,595	1,595	1,595
Panel B: Up to 2014						
Tax rate × intra-group × post	-0.0055	-0.0025	-0.0015	0.0145*	0.0160	-0.0070
	(0.0074)	(0.0098)	(0.0079)	(0.0088)	(0.0109)	(0.0084)
Tax rate × intra-group	-0.0319**	-0.0175	-0.0320***	0.0233	0.0256	0.0167
	(0.0144)	(0.0193)	(0.0108)	(0.0172)	(0.0191)	(0.0110)
Observations	210,233	210,233	210,233	109,618	109,618	109,618
Number of firms	2,335	2,335	2,335	1,680	1,680	1,680
Panel C: Up to 2015						
Tax rate × intra-group × post	-0.0049	-0.0014	-0.0024	0.0158*	0.0156	-0.0051
	(0.0075)	(0.0101)	(0.0084)	(0.0090)	(0.0112)	(0.0081)
Tax rate × intra-group	-0.0318**	-0.0174	-0.0320***	0.0235	0.0258	0.0167
	(0.0144)	(0.0193)	(0.0108)	(0.0171)	(0.0191)	(0.0110)
Observations	243,660	243,660	243,660	126,313	126,313	126,313
Number of firms	2,364	2,364	2,364	1,755	1,755	1,755
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes	Yes
Firm × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows impact estimates of the reform on the semi-elasticity of trade in goods with respect to differences in destination country tax rates comparing trade that is likely to be intra-group vs. trade that is likely not intra-group, following Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 80% and 120% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 20% of total trade (see Appendix E for details) *Taxrate* is the statutory corporate tax rate of country j in year t. *Intra-group* is a dummy that equals 1 if a firm-country pair is likely to engage in intra-group trade and 0 if a firm-country pair's trade is likely to not be intra-group. Outcomes in $\log(Y)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. Tables B.35 and B.36 show robustness checks by using narrower bandwidths for the definition of likely and not likely intra-group trade.

Table 5:
Impact of the Reform on the Consolidation of Cost Centers

	(1) All	(2) Tax havens	(3) Non-tax havens	(4) Royalties	(5) Services	(6) Interests	(7) Other
Panel A: Up to 2013							
Intra-group × post	-0.292***	-0.001	-0.291***	-0.029	-0.179***	0.008	-0.051***
	(0.074)	(0.008)	(0.071)	(0.036)	(0.052)	(0.014)	(0.019)
Intra-group	-0.687***	-0.022**	-0.665***	-0.182***	-0.637***	-0.023	-0.006
	(0.121)	(0.009)	(0.116)	(0.044)	(0.108)	(0.024)	(0.013)
Observations	11,984	11,984	11,984	11,984	11,984	11,984	11,984
Panel B: Up to 2014							
Intra-group × post	-0.287***	-0.002	-0.285***	-0.017	-0.165***	0.016	-0.060***
	(0.072)	(0.008)	(0.069)	(0.035)	(0.052)	(0.014)	(0.018)
Intra-group	-0.687***	-0.022**	-0.665***	-0.182***	-0.637***	-0.023	-0.006
	(0.121)	(0.009)	(0.116)	(0.044)	(0.108)	(0.024)	(0.013)
Observations	13,696	13,696	13,696	13,696	13,696	13,696	13,696
Panel C: Up to 2015							
Intra-group × post	-0.379***	-0.006	-0.372***	-0.026	-0.223***	0.021	-0.074***
	(0.076)	(0.009)	(0.073)	(0.035)	(0.053)	(0.014)	(0.019)
Intra-group	-0.687***	-0.022**	-0.665***	-0.182***	-0.637***	-0.023	-0.006
	(0.121)	(0.009)	(0.116)	(0.044)	(0.108)	(0.024)	(0.013)
Observations	15,408	15,408	15,408	15,408	15,408	15,408	15,408
Firm × year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	856	856	856	856	856	856	856
Pre-treatment average countries with affiliates	1.050	0.022	1.028	0.332	0.473	0.093	0.095
Pre-treatment average countries with non-affiliates	1.689	0.051	1.638	0.436	1.110	0.126	0.097

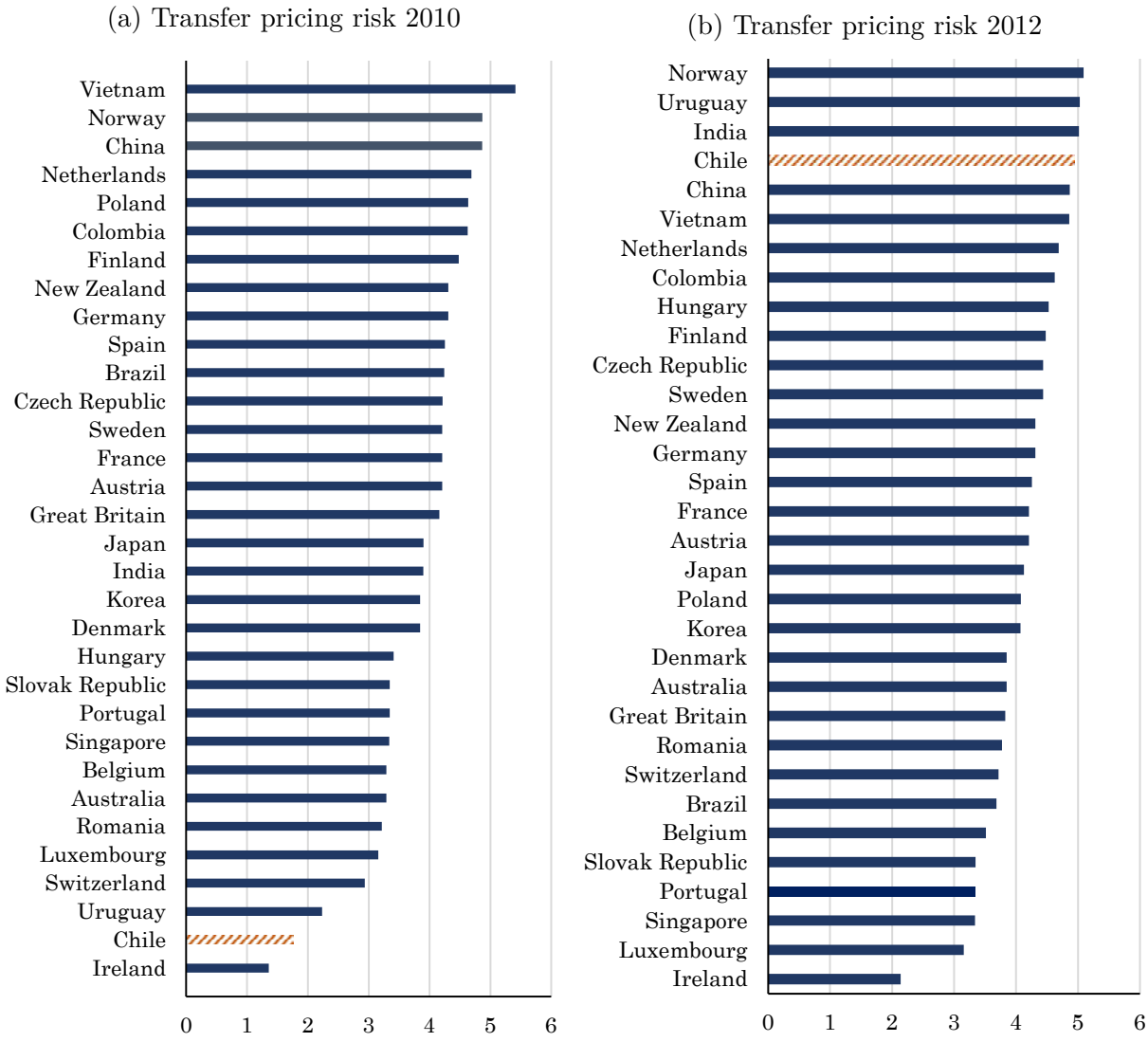
Notes: This table shows impact estimates of the reform using a difference-in-difference specification that compares the number of countries in which firms make payments to affiliates to the number of countries in which they make payments to non-affiliates. This analysis is at the level of firm-year-intra-group status, i.e., countries to which firm i makes payments to affiliates vs. non-affiliates g in year t. The estimation only includes multinational firms and controls for firm, year, and firm × year fixed effects. Column (1) shows the number of countries to which firms make any payment. Columns (2) and (3) show the number of tax haven and non-tax haven countries to which firms make any payments. Columns (4), (5), (6), and (7) refer to the number of countries to which firms make payments for royalties, services, interests, and other payments, respectively. *Post* is a dummy equal to 1 from 2011 onward. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. We show multiple time windows to allow for the possibility that the estimate may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. Results from Column (1) correspond to those in Figure 6.

Appendices (For Online Publication Only)

A Additional Figures & Tables

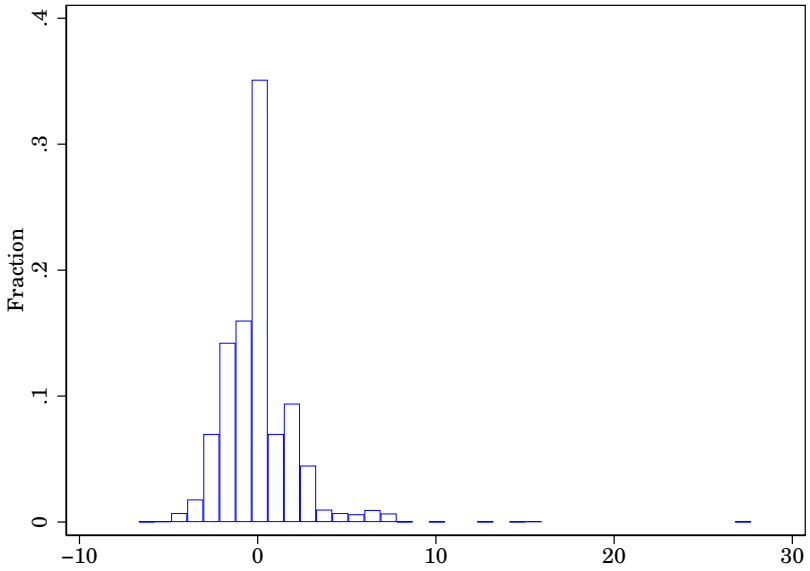
Figures

Figure A.1:
Strictness of Transfer Pricing Enforcement Before and After the Reform



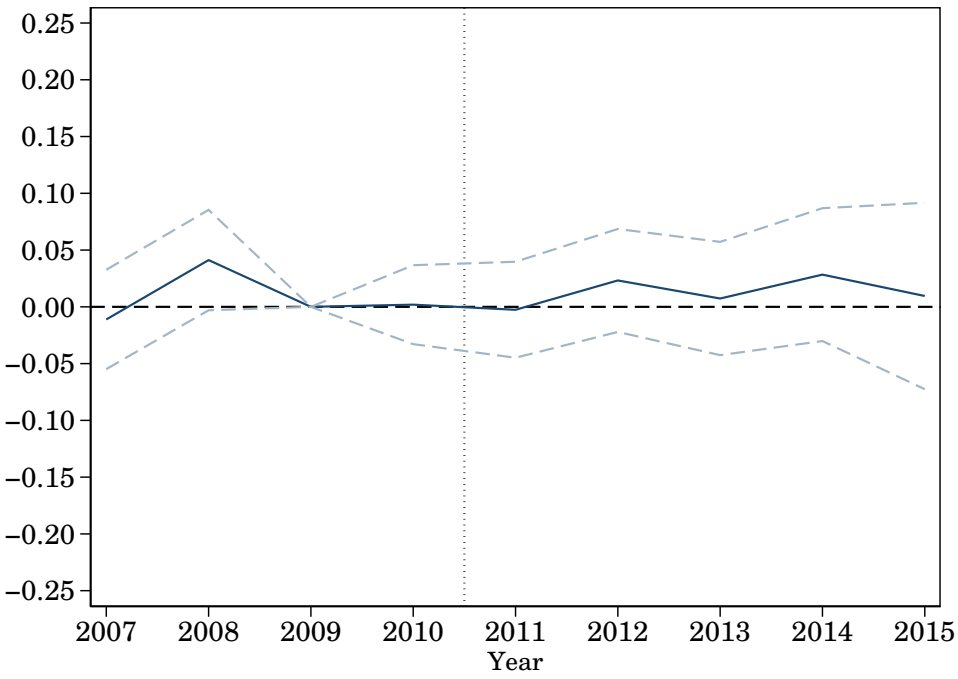
Notes: These figures show the country-level assessment of transfer pricing risk according to data from Mescall and Klassen (2018). The authors define this as the risk of a decrease in future cash flows that result from tax authorities' actions related to a corporation's transfer pricing activities. Chile had the second lowest risk in 2010 and the fourth highest in 2012, after the implementation of the reform.

Figure A.2:
Histogram of the Difference of Tax Rate Residuals at the Firm-Country Level (2007–2015)



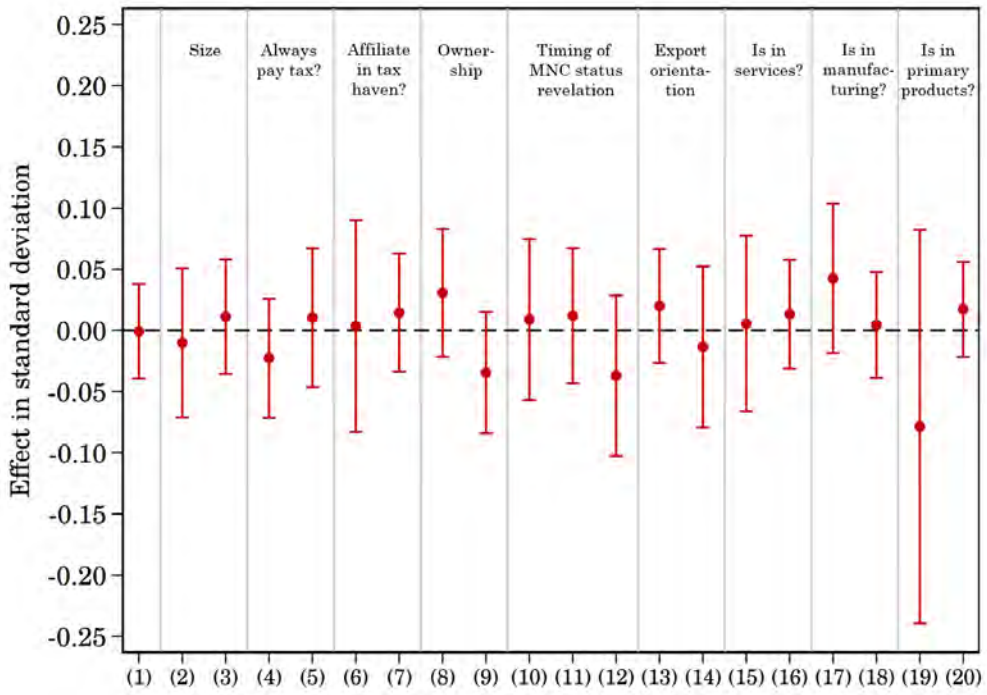
Notes: This figure illustrates the over-time variation in statutory corporate tax rates leveraged in Equation 2. The histogram plots the magnitude of the differences in these residuals from 2007 to 2015, showing considerable variation in tax incentives across multinationals. Observations are at the level of firm-year-intra-group status-country, i.e., payments by firm i in year t to an affiliate or a non-affiliate in country j. Destination country tax rates are regressed on firm $\times$ year fixed effects to obtain residualized tax rates.

Figure A.3:
Impact of the Reform on Corporate Income Tax, Including Audits



Notes: This figure shows impact estimates of the reform on corporate income tax/payroll including tax payments resulting from audits, expressed in standard deviations, following the event study specification of Equation 5, which compares multinationals to internationally active domestic firms. The dotted vertical line indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table A.4 shows the same analysis in regression form.

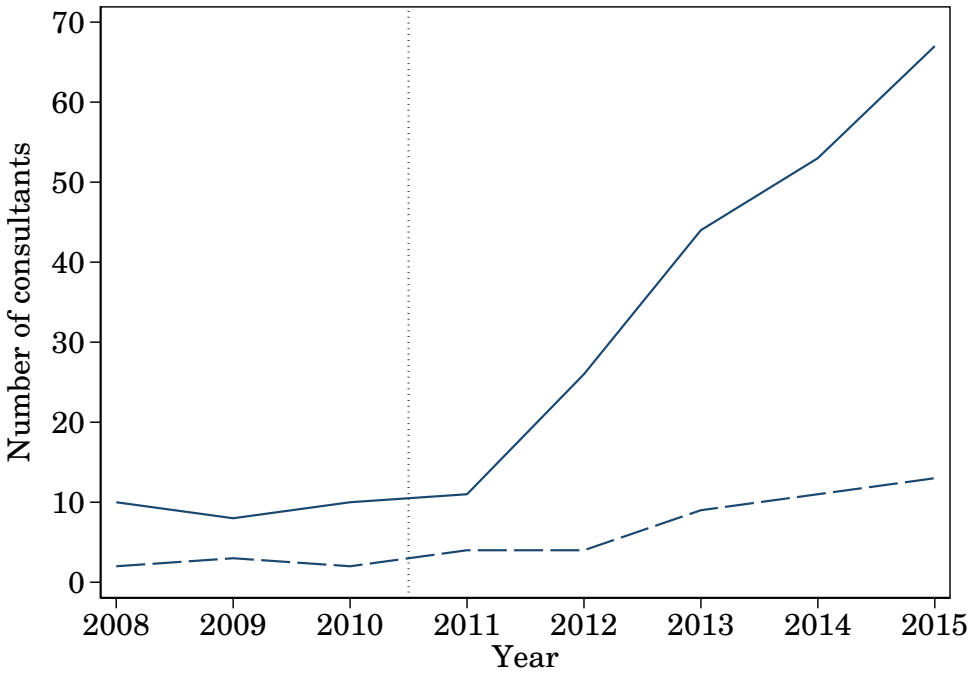
Figure A.4:
Impact of the Reform on Corporate Income Tax: Subgroup Analysis



(1) All
(2) Large
(3) Medium
(4) Regularly paid taxes > 0 in the pre-treatment period
(5) Paid no tax multiple years in the pre-treatment period
(6) Made payments to tax havens
(7) Made no payments to tax havens
(8) Foreign-owned
(9) Chilean-owned
(10) Multinational status revealed pre-treatment
(11) Multinational status revealed post-treatment
(12) Multinational status from external sources
(13) Above the median exports/sales ratio
(14) Below the median exports/sales ratio
(15) Services
(16) Non-services
(17) Manufacturing
(18) Non-manufacturing
(19) Primary products
(20) Non-primary products

Notes: This figure shows point estimates of the impact of the reform on corporate income tax/payroll, expressed in standard deviation, following Equation 5, which compares multinationals to internationally active domestic firms. Column (1) shows the estimate for the full sample (as in Table A.2). Estimates by firm size (2) and (3) compare large (medium) multinationals to large (medium) domestic firms. Estimates (4) and (5) compare multinationals that regularly paid corporate income taxes/paid no such taxes more than once to the corresponding subgroups of domestic firms. Estimates (6)-(12) compare the corresponding subgroups of multinationals to the full sample of domestic firms: (6) multinationals with payments to tax havens, (7) those without payments to tax havens, (8) foreign-owned multinationals, (9) Chilean-owned multinationals, (10)-(12) firms that revealed their multinational status to the tax authority pre-treatment, post-treatment, or never, respectively. The latter are identified as multinationals based on data from Dun & Bradstreet and Orbis. Estimates (13) and (14) compare multinationals with different levels of export-orientation (above vs. below median exports/sales ratio). Estimates by industry (15)-(20) compare multinationals in the sectors of services, manufacturing, and primary vs. the rest, respectively. This figure shows estimates up to 2013. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Figures B.16 and B.17 show the same up to 2014 and 2015, respectively.

Figure A.5:
Number of Transfer Pricing Consultants
in Big Four vs. Smaller Consulting Firms in Chile



Notes: This figure compares the number of transfer pricing consultants working in the Big Four (solid line) vs. smaller consulting firms (dashed line) in Chile throughout the study period. The dotted vertical line indicates the start of the reform.

Tables

Table A.1:
Non-OECD Countries Which Follow OECD Transfer Pricing Guidelines

1	Azerbaijan	32	Malawi
2	Bangladesh	33	Malaysia
3	Belarus	34	Malta
4	Bolivia	35	Morocco
5	Bosnia and Herzegovina	36	Namibia
6	Bulgaria	37	Nigeria
7	Cambodia	38	Pakistan
8	Cape Verde	39	Papua New Guinea
9	China	40	Peru
10	Colombia	41	Philippines
11	Congo Brazzaville	42	Qatar
12	Costa Rica	43	Republic of Serbia
13	Cote d'Ivoire	44	Romania
14	Croatia	45	Russia
15	Dominican Republic	46	Saudi Arabia
16	Ecuador	47	Senegal
17	El Salvador	48	Singapore
18	Fiji	49	South Africa
19	Gabon	50	South Sudan
20	Georgia	51	Srilanka
21	Ghana	52	Taiwan
22	Gilbraltar	53	Tanzania
23	Guatemala	54	Thailand
24	Hong Kong	55	Tunisia
25	India	56	Uganda
26	Indonesia	57	Ukraine
27	Kazakhstan	58	Venezuela
28	Kenya	59	Vietnam
29	Kosovo	60	Zambia
30	Lebanon	61	Zimbabwe
31	Madagascar		

Notes: This table lists all non-OECD countries whose tax legislation follows OECD Transfer Pricing Guidelines (partly of fully). All OECD countries have adopted such guidelines. Source: Ernst & Young (2019).

Table A.2:
Impact of the Reform on Corporate Income Tax

	(1) Tax paid up to 2013	(2) Tax paid up to 2014	(3) Tax paid up to 2015
Post × multinational	-0.00027	0.00084	0.00085
	(0.00704)	(0.00738)	(0.00820)
Effect in % change	-0.18 %	0.58 %	0.58 %
Pre-treatment avg sales/payroll × year	Yes	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes	Yes
(Pre-treatment avg sales squared) × year	Yes	Yes	Yes
Industry × year	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	98,539	112,616	126,693
Mean outcome of multinational firms in 2009	0.146	0.146	0.146
Number of multinational firms	2,752	2,752	2,752
Number of control firms	11,325	11,325	11,325

Notes: This table shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. *Post* is a dummy equal to 1 from 2011 onward. *Multinational* is a dummy equal to 1 for multinational firms. All continuous variables in levels winsorized at the 99th percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Panel (b) of Figure 3. For robustness, Tables B.37 and B.38 show results restricting the sample for common support in pre-treatment average sales and assets, respectively, and Table B.39 scales the outcome by lagged payroll. Table A.4 shows the same results, but including tax payments resulting from transfer pricing audits.

Table A.3:
Placebo Outcome: Impact of the Reform on Domestic Sales

	(1) Up to 2013	(2) Up to 2014	(3) Up to 2015
Post × multinational	0.208	0.203	0.303
	(0.292)	(0.289)	(0.301)
Effect in % change	1.70 %	1.66 %	2.47 %
Pre-treatment avg sales/payroll × year	Yes	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes	Yes
(Pre-treatment avg sales squared) × year	Yes	Yes	Yes
Industry × year	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	98,539	112,616	126,693
Mean outcome of multinational firms in 2009	12.248	12.248	12.248
Number of multinational firms	2,752	2,752	2,752
Number of control firms	11,325	11,325	11,325

Notes: This table shows the placebo test for impact estimates of the reform on domestic sales/payroll, expressed in standard deviations, following the event study specification of Equation 5, which compares multinationals to internationally-active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. These results correspond to those in Panel (a) of Figure 3.

Table A.4:
Impact of the Reform on Corporate Income Tax, Including Audits

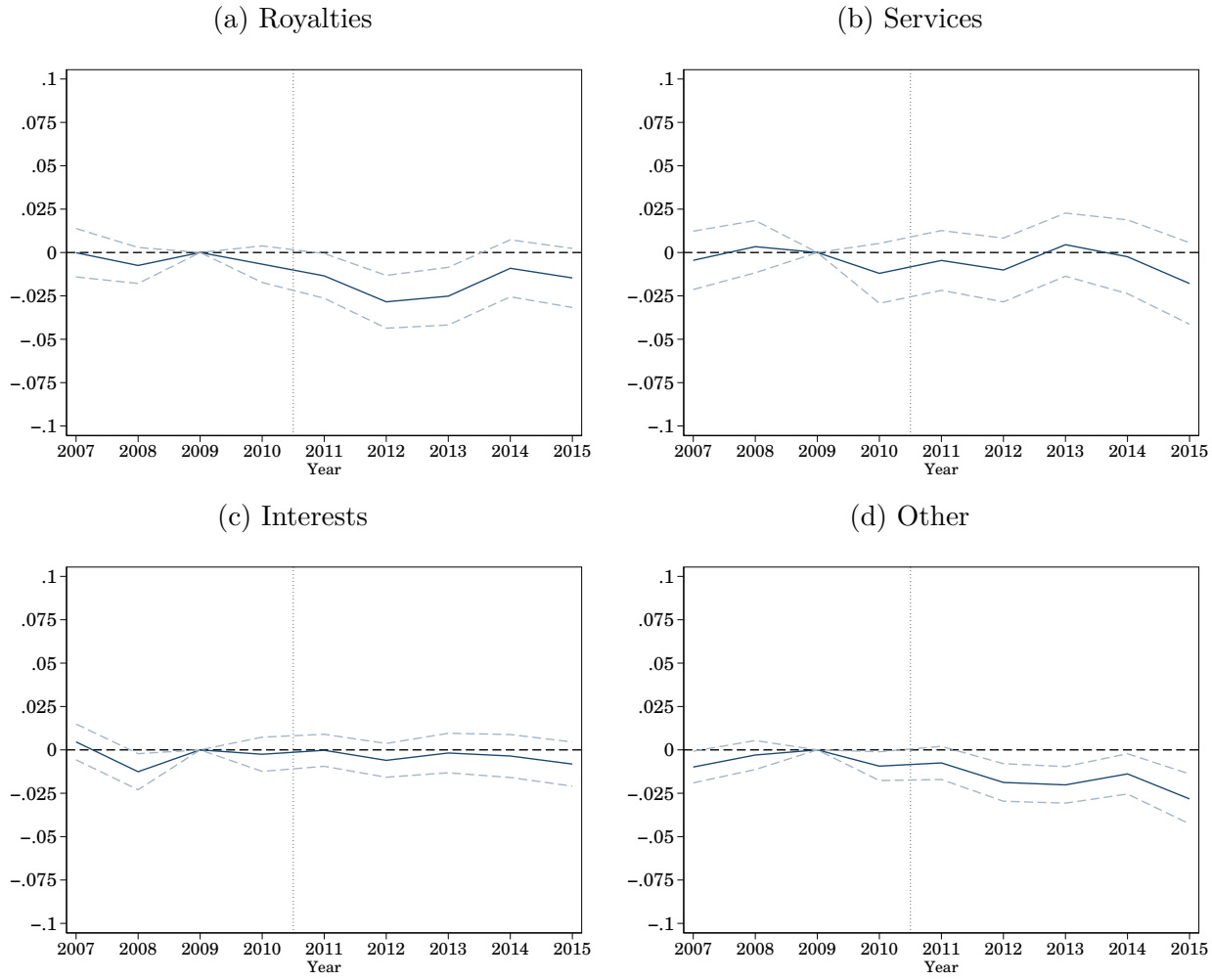
	(1) Tax paid	(2) Tax paid including audits
Panel A: Up to 2013		
Post × multinational	-0.00027	0.00048
	(0.00704)	(0.00705)
Effect in % change	-0.18 %	0.33 %
Observations	98,539	98,539
Panel B: Up to 2014		
Post × multinational	0.00084	0.00219
	(0.00738)	(0.00740)
Effect in % change	0.58 %	1.50 %
Observations	112,616	112,616
Panel C: Up to 2015		
Post × multinational	0.00085	0.00186
	(0.00820)	(0.00822)
Effect in % change	0.58 %	1.27 %
Observations	126,693	126,693
Pre-treatment avg sales/payroll × year	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes
(Pre-treatment avg sales) squared × year	Yes	Yes
Industry × year	Yes	Yes
Firm FE	Yes	Yes
Mean outcome of multinational firms in 2009	0.146	0.146
Number of multinational firms	2,752	2,752
Number of control firms	11,325	11,325

Notes: This table shows the same analysis as in Table A.2, but including tax payments resulting from audits. These audits led to 17.2 million USD in payments in 2010 and 68.1 million USD in 2011-2015. These payments stem from 224 audits to 211 firms, representing 7.66% of all multinationals in our sample. 33 of these firms paid additional taxes as a result of these audits. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99th percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure A.3.

B Robustness Checks

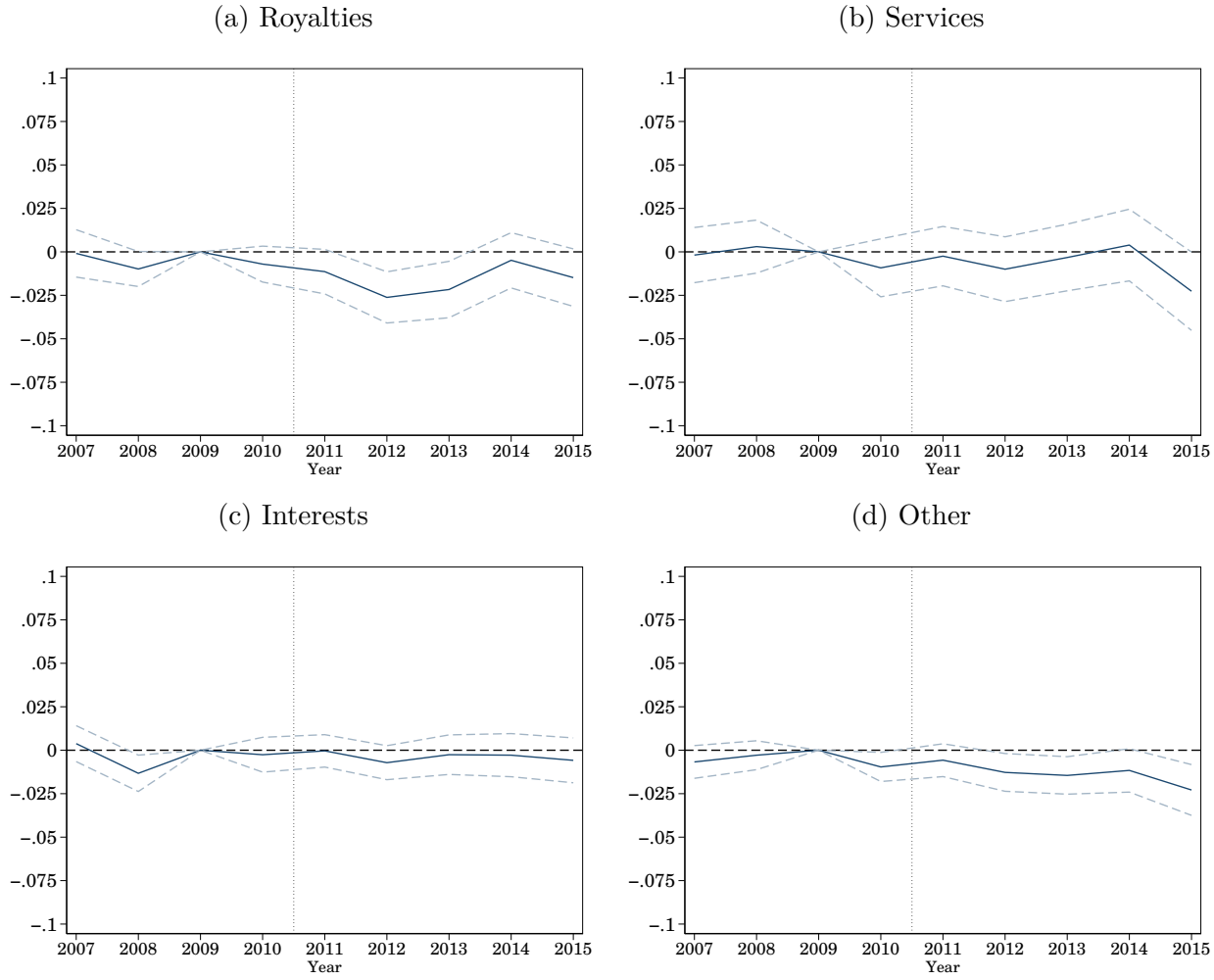
Figures

Figure B.1:
Impact of the Reform on the Sensitivity of International Payments
to Differences in Destination Country Tax Rates
Robustness Check I: Alternative Order of Tax Rate Data Sources



Notes: These figures examine the robustness of the results presented in Figure 1 by reversing the pecking order of data sources for destination country tax rates. The order is reversed from Habu (2017), OECD (2019b) and then KPMG (2019) to KPMG (2019), OECD (2019b), and then Habu (2017). They show the evolution of the semi-elasticity of international payments with respect to differences in destination country tax rates for payments to affiliates compared to payments to non-affiliates, following the event study specification of Equation 3. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. It includes firm $\times$ year, firm $\times$ intra-group status, and destination country fixed effects, as well as controls for destination country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

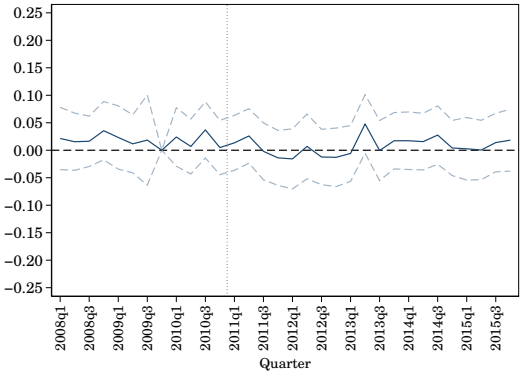
Figure B.2:
Impact of the Reform on the Sensitivity of International Payments
to Differences in Destination Country Tax Rates
Robustness Check II: Alternative Data Source for Tax Rates



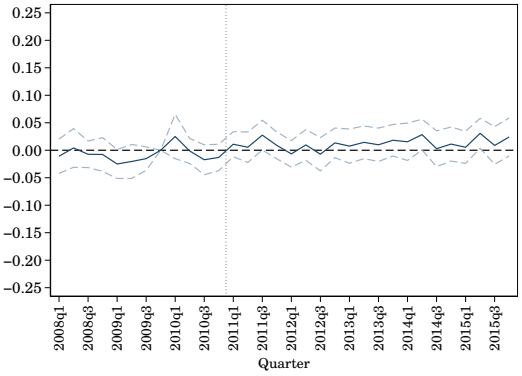
Notes: These figures examine the robustness of the results presented in Figure 1 by replacing the tax rate data sources with an alternative source from TaxFoundation (2024). They show the evolution of the semi-elasticity of international payments with respect to differences in destination country tax rates for payments to affiliates compared to payments to non-affiliates, following the event study specification of Equation 3. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. It includes firm $\times$ year, firm $\times$ intra-group status, and destination country fixed effects, as well as controls for destination country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.3:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check I: Alternative Order of Tax Rate Data Sources

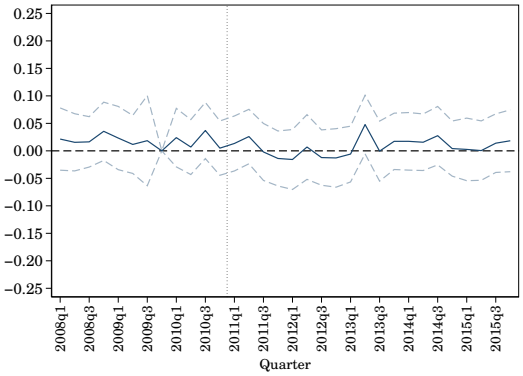
(a) Import Payments



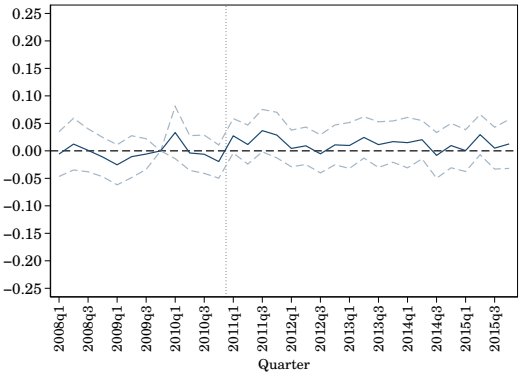
(b) Export Payments



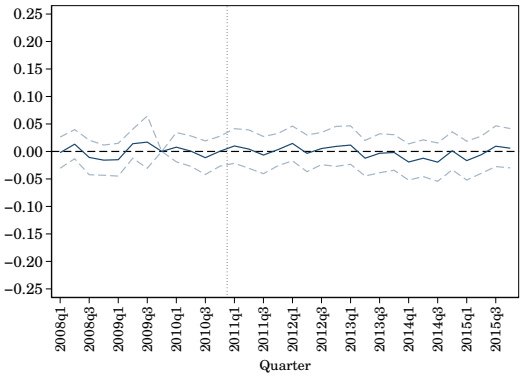
(c) Import Quantities



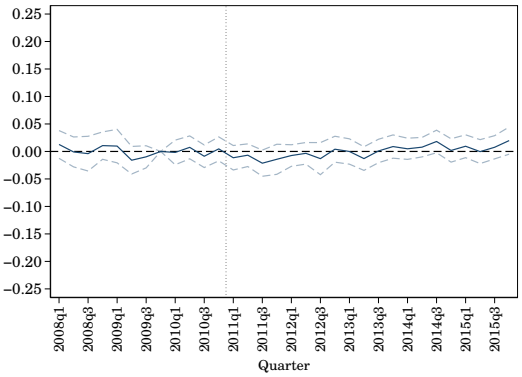
(d) Export Quantities



(e) Import Unit Prices



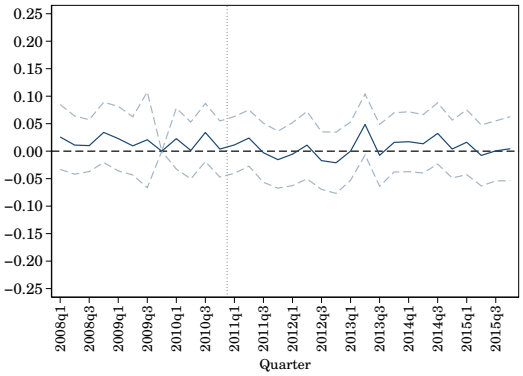
(f) Export Unit Prices



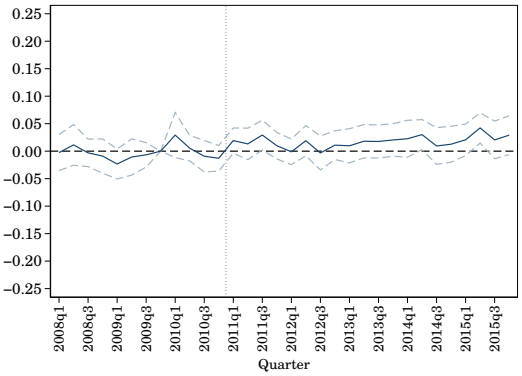
Notes: These figures examine the robustness of the results presented in Figure 2 by reversing the pecking order of data sources for destination country tax rates. The order is reversed from Habu (2017), OECD (2019b) and then KPMG (2019) to KPMG (2019), OECD (2019b), and then Habu (2017). These show impact estimates of the reform on the semi-elasticity of trade in goods with respect to differences in trading partner country tax rates, following Equation 4. Likely intra-group trade (imports or exports) are defined as those firm-country combinations for which the amount of intra-group trade in the tax data is between 80% and 120% of imports or exports in the customs data, respectively. Similarly, likely not intra-group trade (imports or exports) are defined as firm-country combinations where the share of intra-group trade is between 0% and 20% (see Section E for details). The dotted vertical line indicates the start of the reform. 2009 q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 4 show the same analysis in regression form.

Figure B.4:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check II: Alternative Data Source for Tax Rates

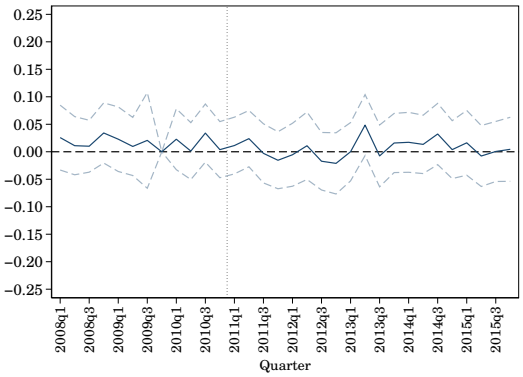
(a) Import Payments



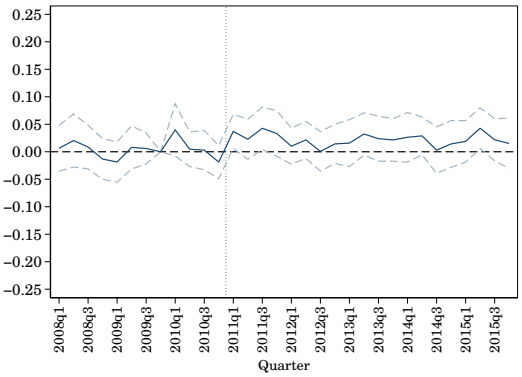
(b) Export Payments



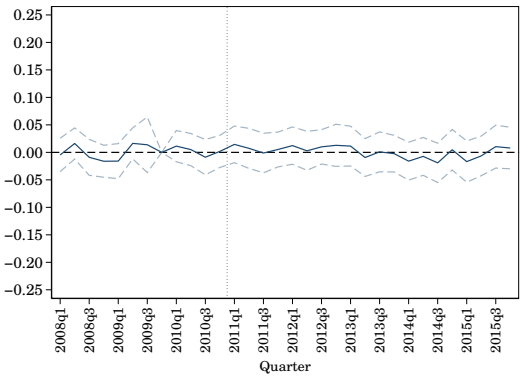
(c) Import Quantities



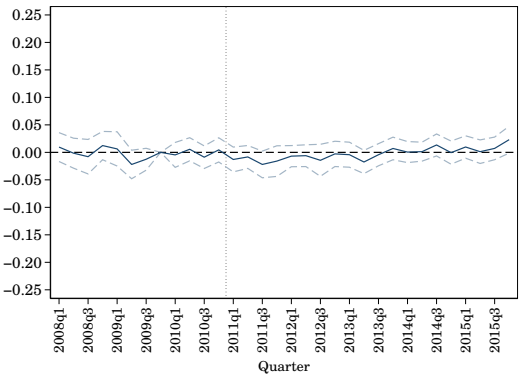
(d) Export Quantities



(e) Import Unit Prices



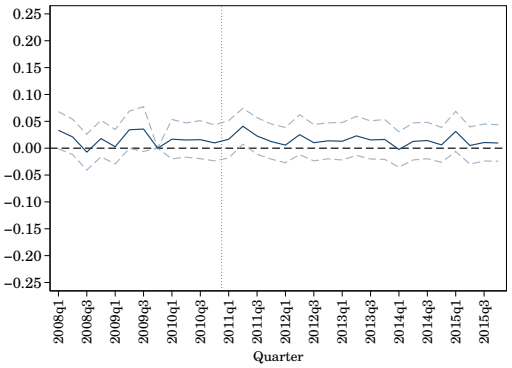
(f) Export Unit Prices



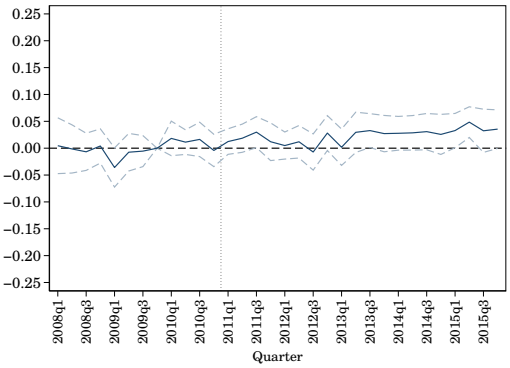
Notes: These figures examine the robustness of the results presented in Figure 2 by replacing the tax rate data sources with an alternative source from TaxFoundation (2024). They show impact estimates of the reform on the semi-elasticity of trade in goods with respect to differences in trading partner country tax rates, following Equation 4. Likely intra-group trade (imports or exports) are defined as those firm-country combinations for which the amount of intra-group trade in the tax data is between 80% and 120% of imports or exports in the customs data, respectively. Similarly, likely not intra-group trade (imports or exports) are defined as firm-country combinations where the share of intra-group trade is between 0% and 20% (see Section E for details). The dotted vertical line indicates the start of the reform. 2009 q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.5:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check III: Country-Firm Pairs with Different Intra-Group Shares

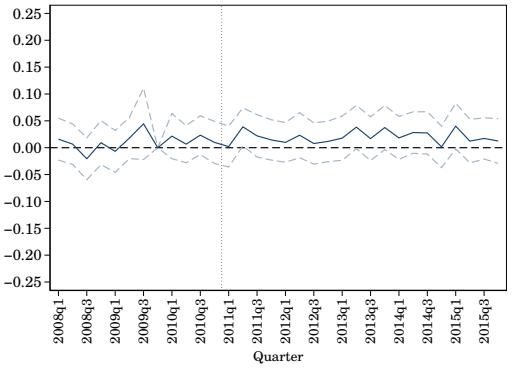
(a) Import Payments



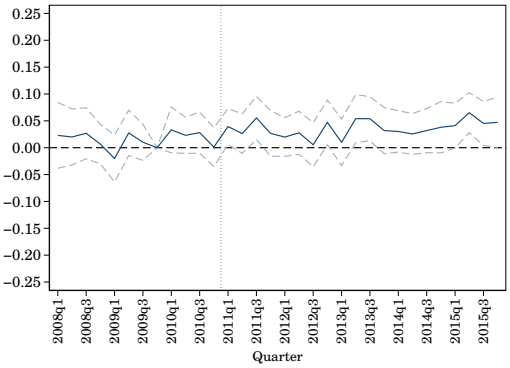
(b) Export Payments



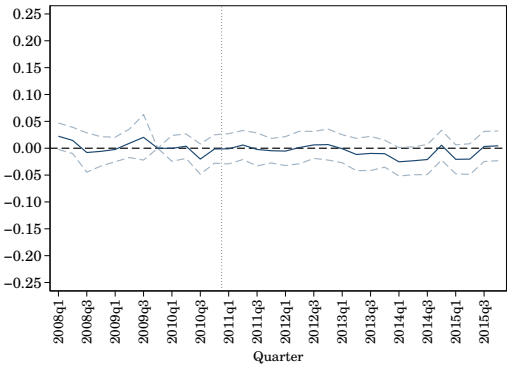
(c) Import Quantities



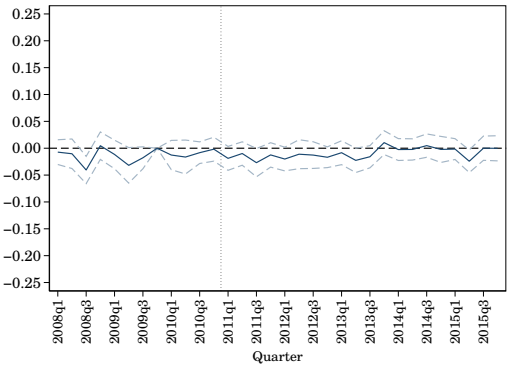
(d) Export Quantities



(e) Import Unit Prices



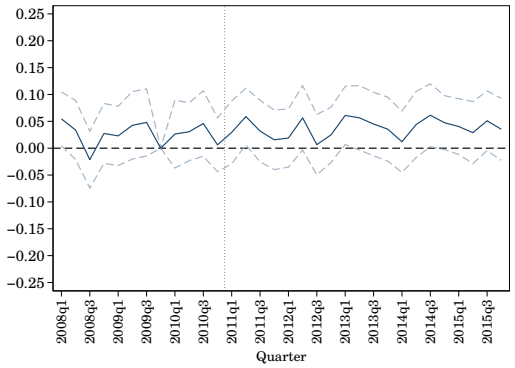
(f) Export Unit Prices



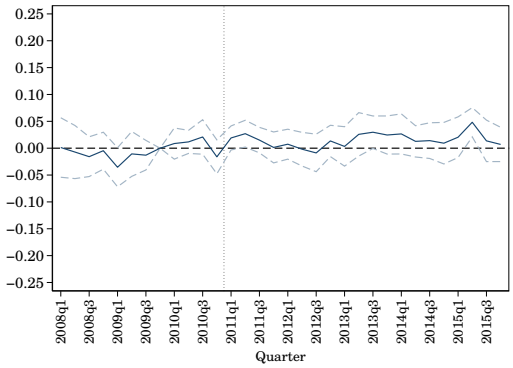
Notes: These figures examine the robustness of the results presented in Figure 1 by considering different bandwidths for the definition of likely intra-group trade. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 90% and 110% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 10% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in log(Y). Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table B.35 shows the same analysis in regression form.

Figure B.6:
Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check IV: Country-Firm Pairs with Different Intra-Group Shares

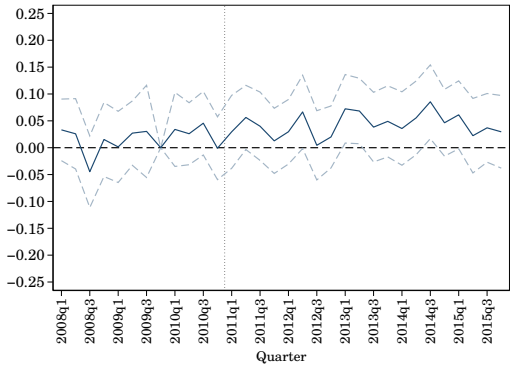
(a) Import Payments



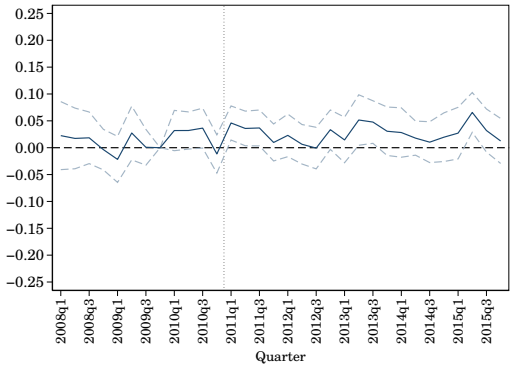
(b) Export Payments



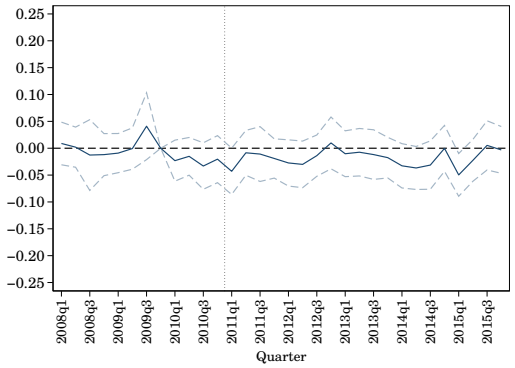
(c) Import Quantities



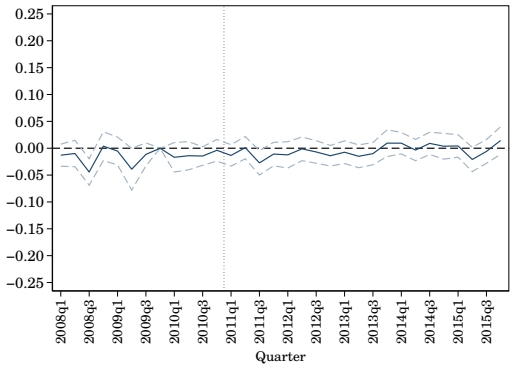
(d) Export Quantities



(e) Import Unit Prices

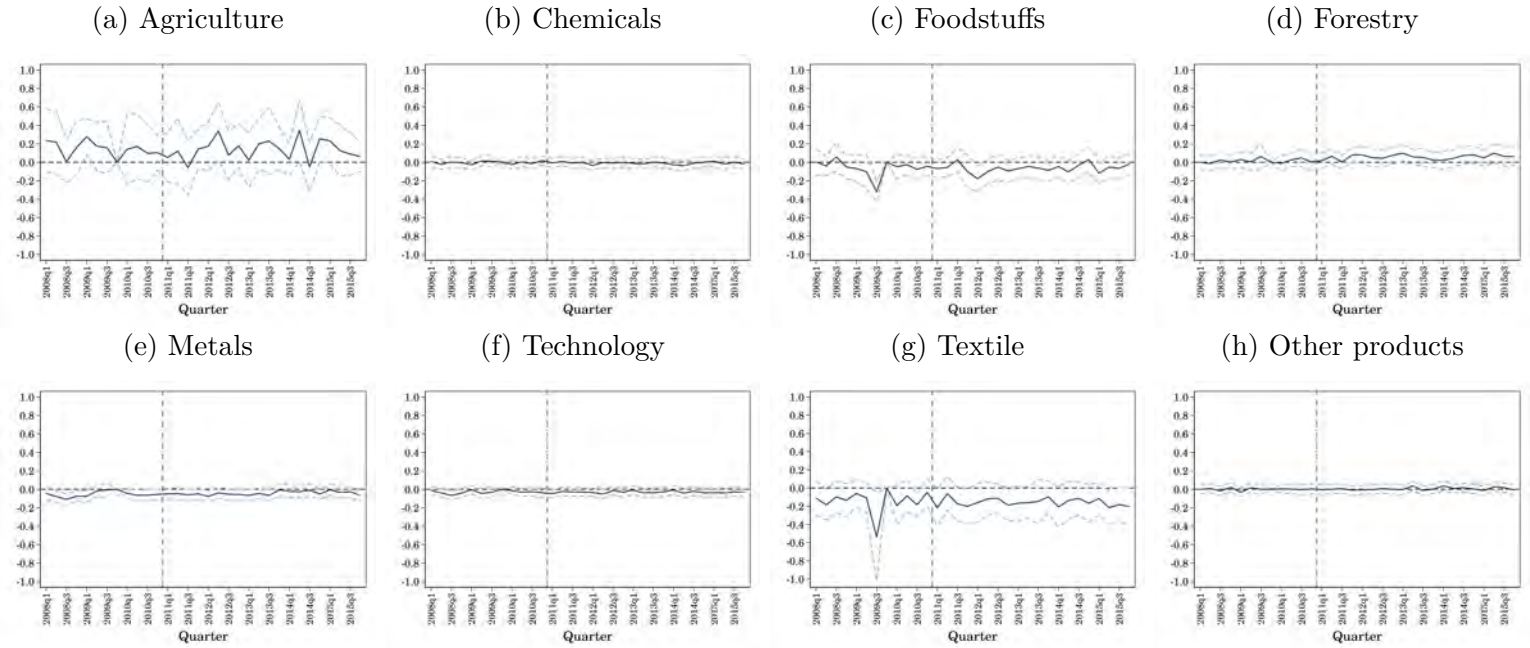


(f) Export Unit Prices



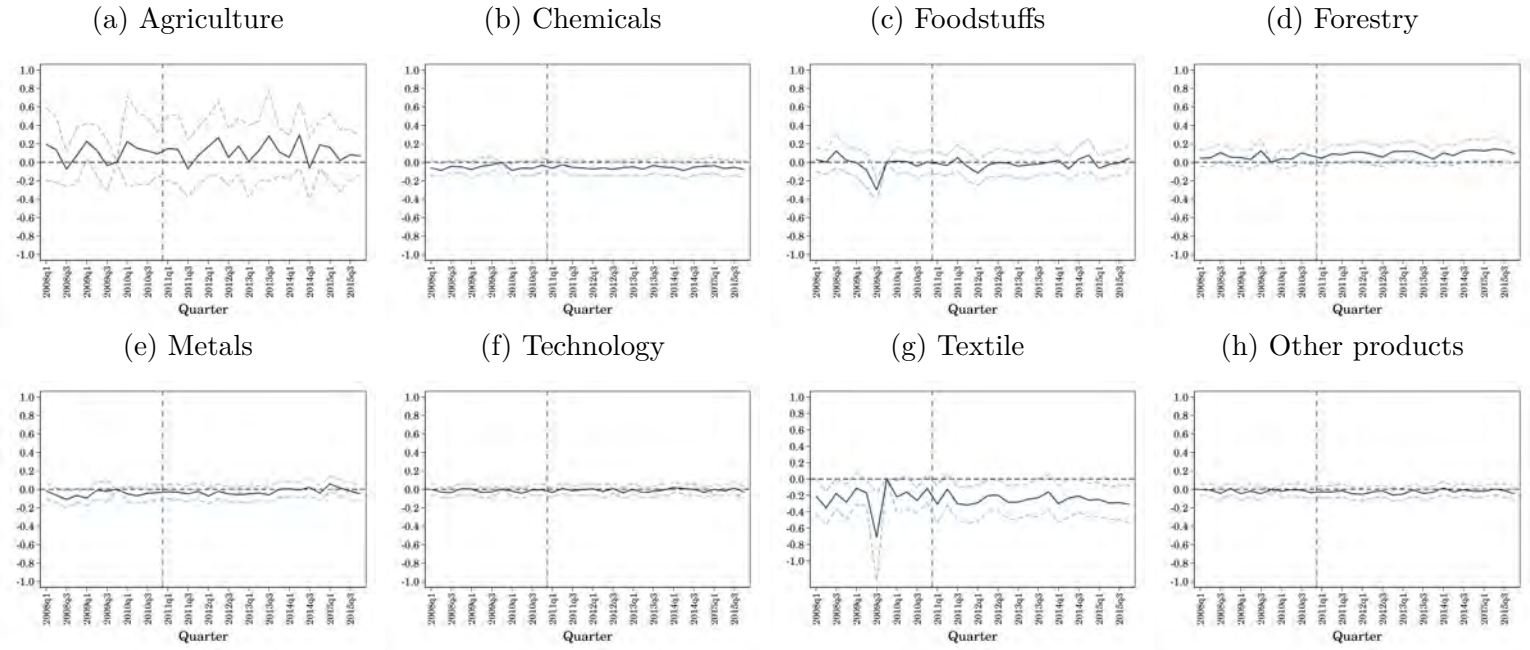
Notes: These figures examine the robustness of the results presented in Figure 1 by considering different bandwidths for the definition of likely intra-group trade. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table B.36 shows the same analysis in regression form.

Figure B.7:
Impact of the Reform on the Sensitivity of Import Payments
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



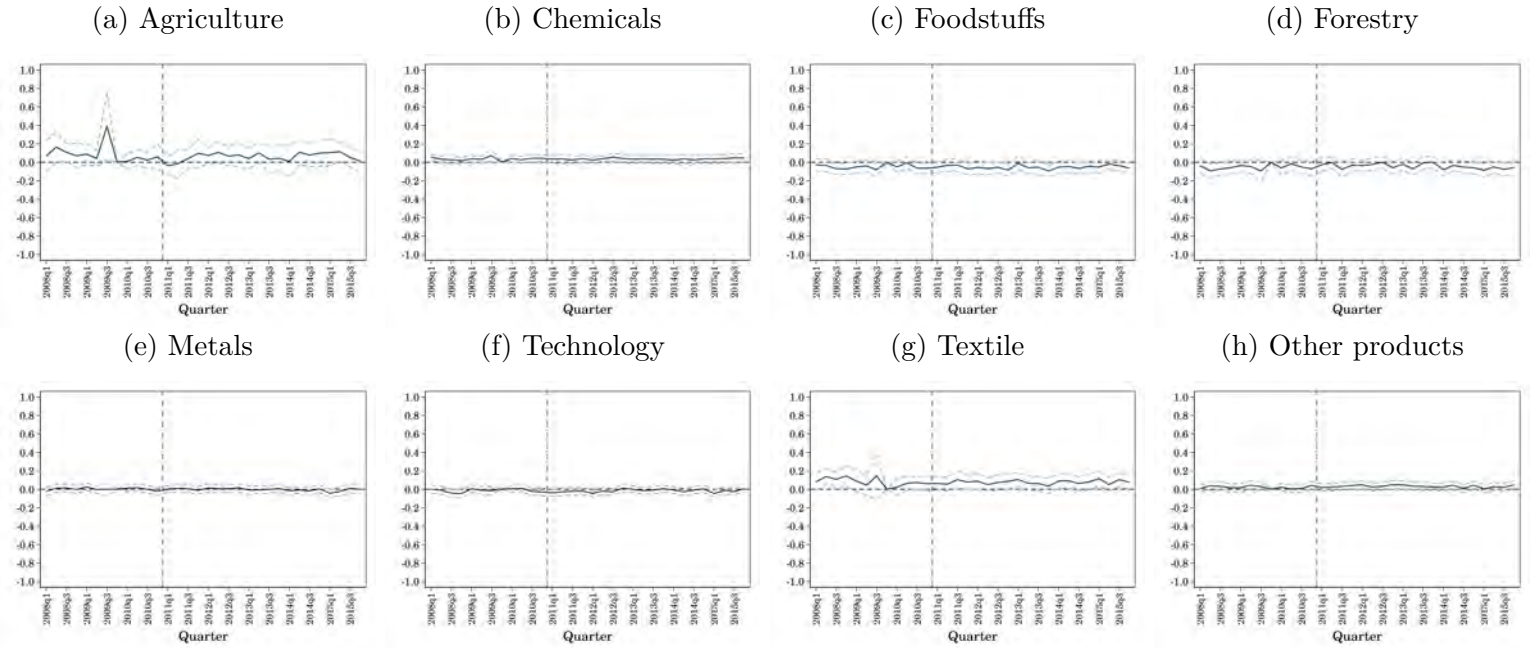
Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.8:
Impact of the Reform on the Sensitivity of Import Quantities
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



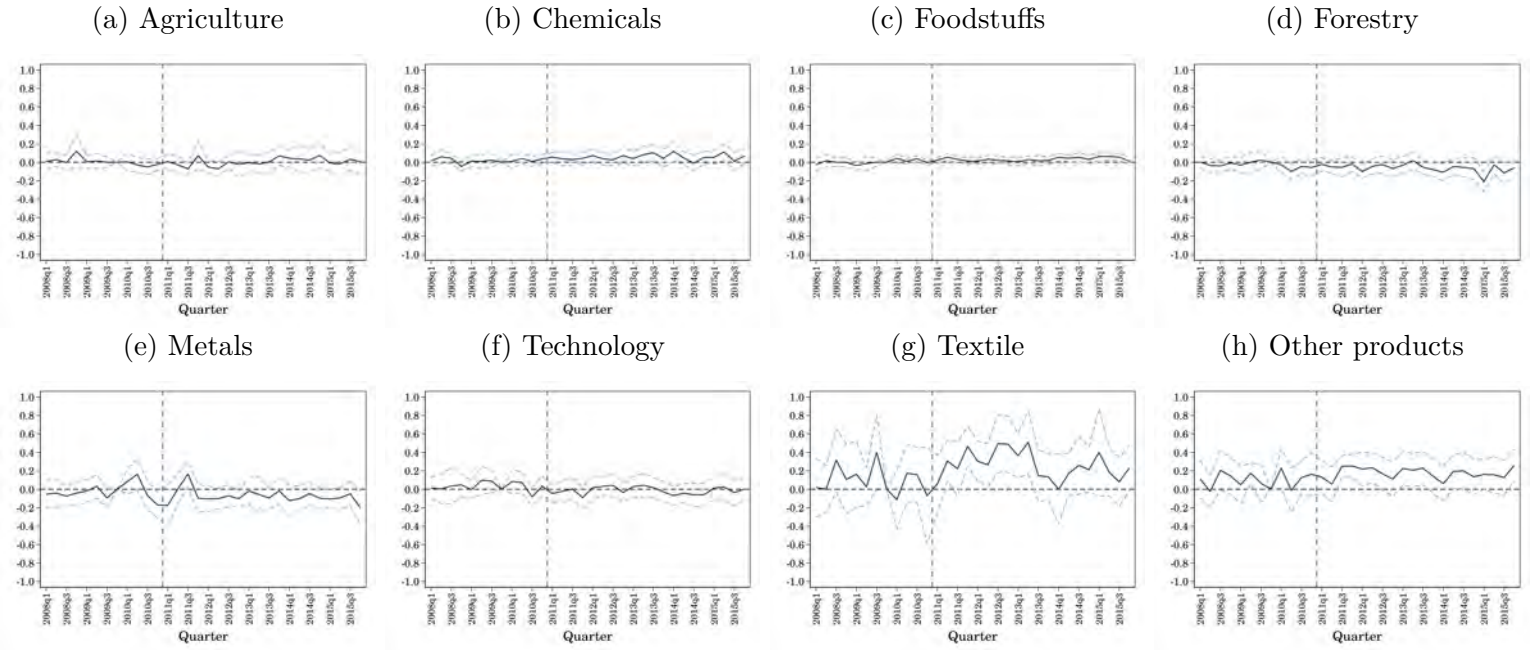
Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.9:
Impact of the Reform on the Sensitivity of Import Unit Prices
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



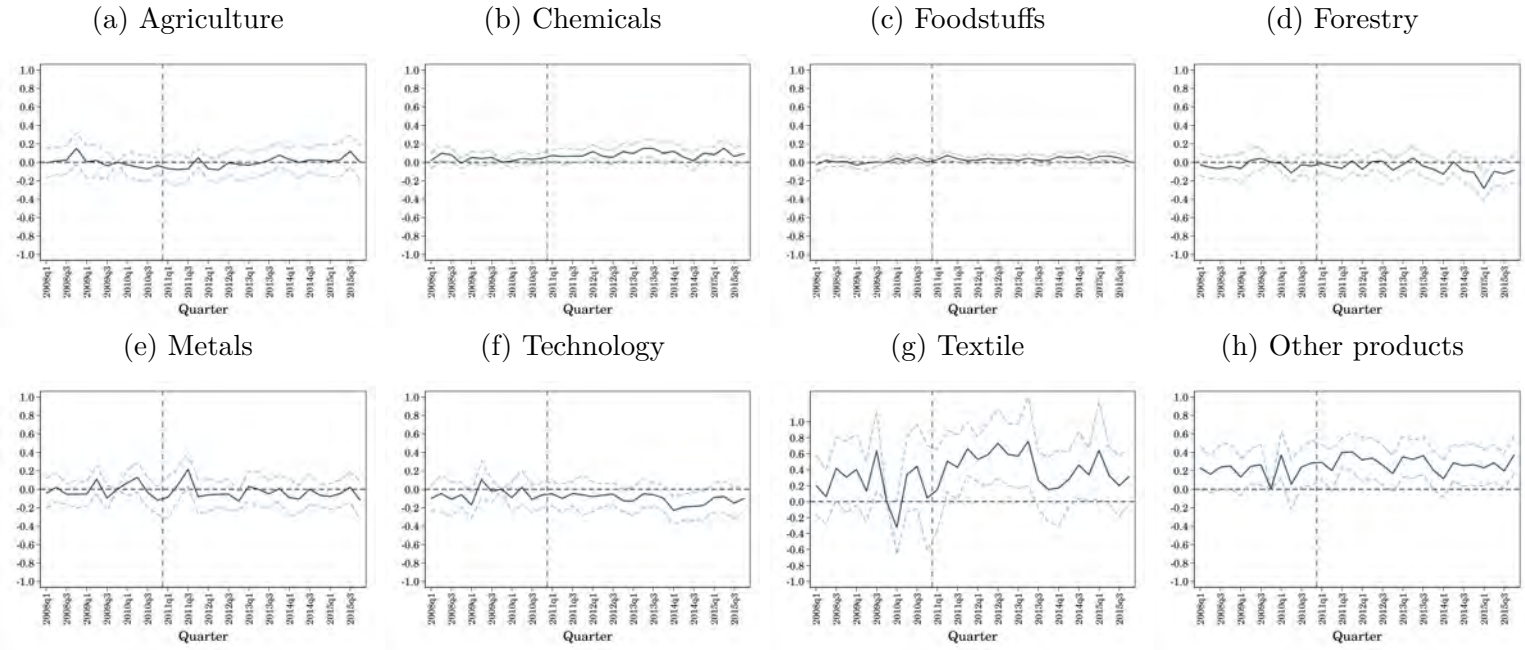
Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.10:
Impact of the Reform on the Sensitivity of Export Payments
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



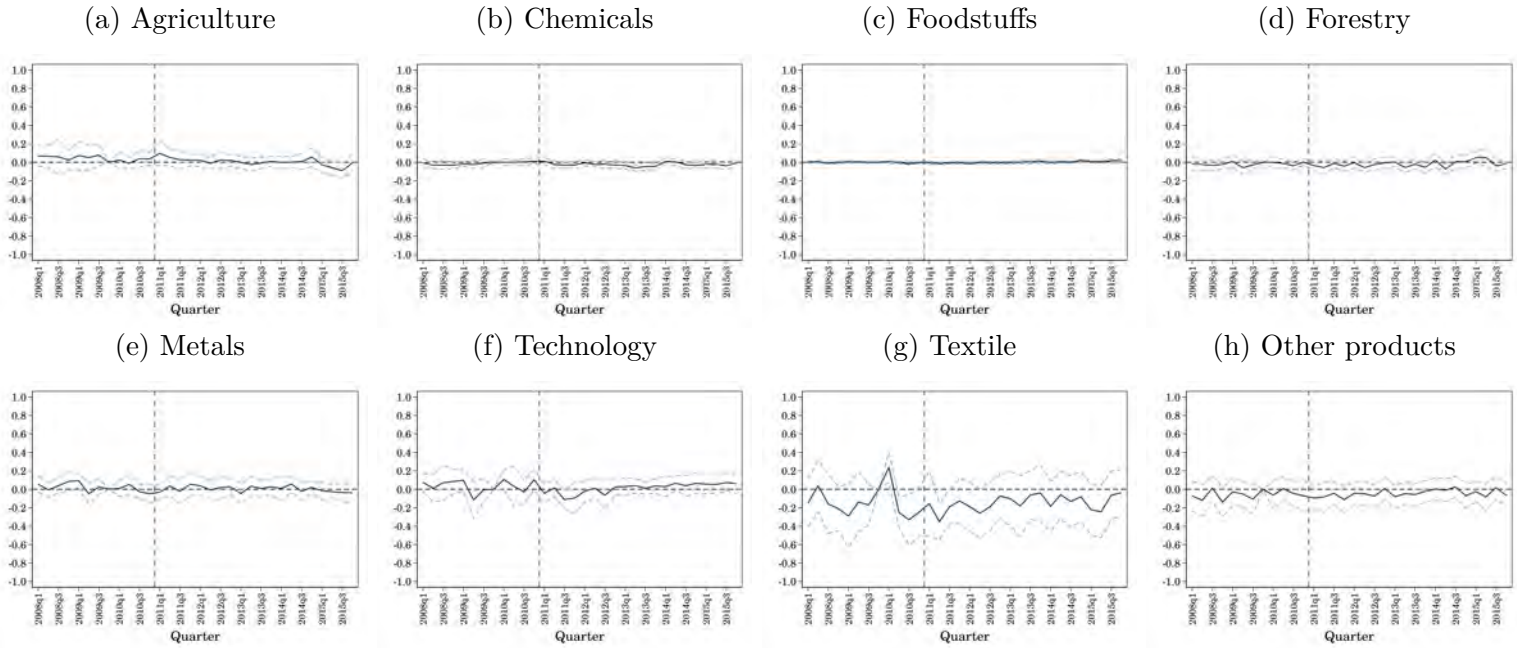
Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.11:
Impact of the Reform on the Sensitivity of Export Quantities
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

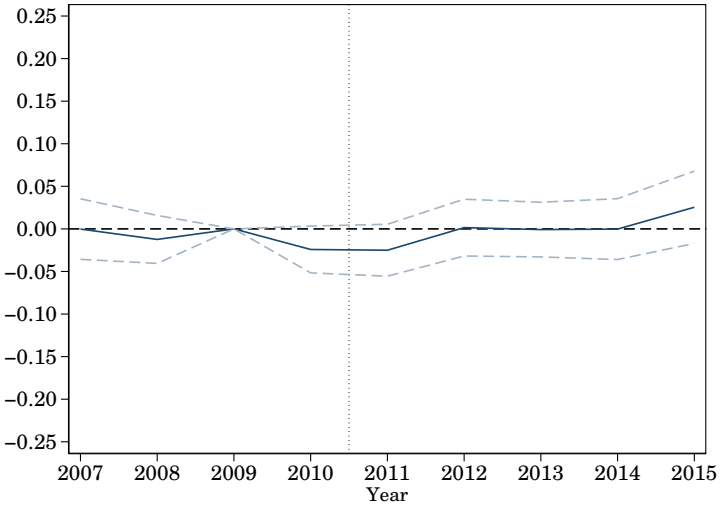
Figure B.12:
Impact of the Reform on the Sensitivity of Export Unit Prices
to Differences in Destination Country Tax Rates
Robustness Check V: Subsamples of Product Types



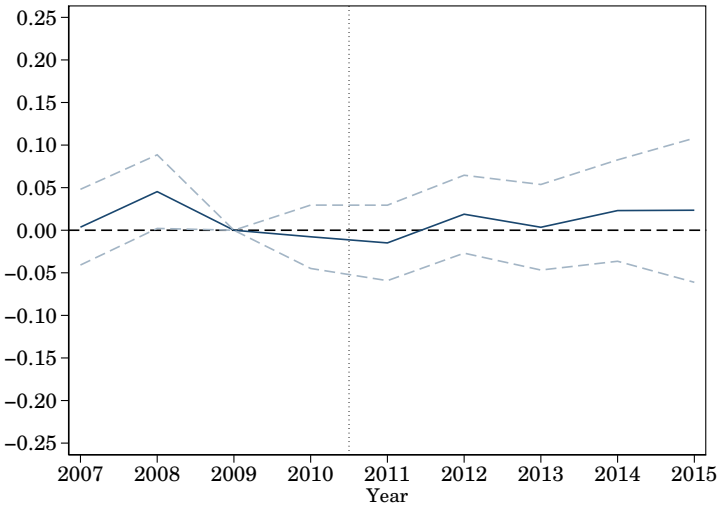
Notes: These figures examine the robustness of the results presented in Figure 1 by analyzing subsamples of product types based on the Harmonized System (HS) classification. These show the evolution of the semi-elasticity of international trade in goods with respect to differences in trading partner country tax rates for likely intra-group trade compared to likely not intra-group trade, following the event study specification of Equation 4. Likely intra-group trade (imports or exports) is defined as such in firm-country pairs where the amount of intra-group trade in the tax data is between 95% and 105% of total trade reported in the customs data. Similarly, likely not intra-group trade (imports or exports) is defined as such in firm-country pairs where the share of intra-group trade is between 0% and 5% of total trade (see Appendix E for details). This analysis is at the level of firm-country-year, i.e., payments by firm i in year t to country j. It includes firm $\times$ quarter fixed effect and controls for trading partner country log(GDPpc). The dotted vertical line indicates the start of the reform. 2009q4 is normalized to zero and 2010 serves as a placebo year. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.13:
Impact of the Reform on Corporate Income Tax
and Placebo Test on Domestic Sales
Robustness Check I: Common Support in Pre-Treatment Average Sales

(a) Impact on Domestic Sales



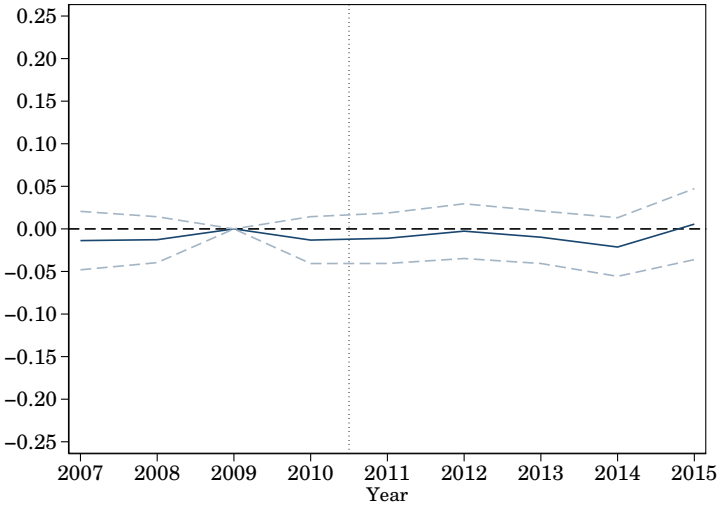
(b) Impact on Tax Payments



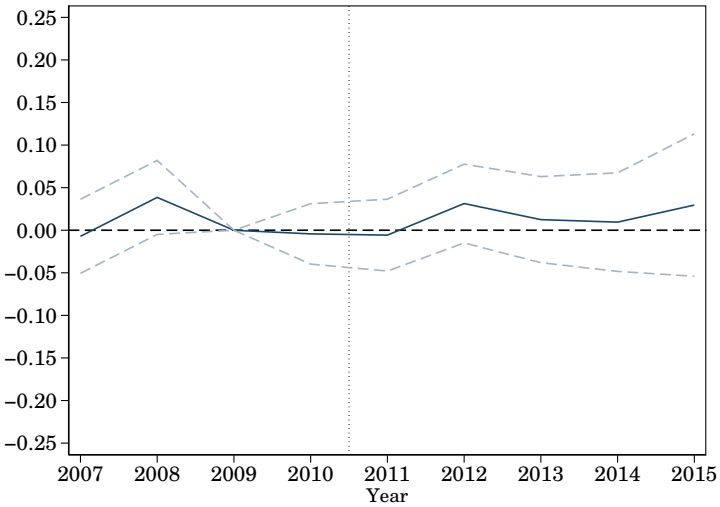
Notes: These figures examine the robustness of Figure 3, restricting the sample for common support in pre-treatment average sales. They show impact estimates of the reform on domestic sales/payroll (placebo test) and corporate income tax/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 5, which compares multinationals to internationally active domestic firms. 2009 is normalized to zero and 2010 serves as a placebo year. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table B.37 shows the same analysis in regression form.

Figure B.14:
Impact of the Reform on Corporate Income Tax
and Placebo Test on Domestic Sales
Robustness Check II: Common Support in Pre-Treatment Average Assets

(a) Impact on Domestic Sales



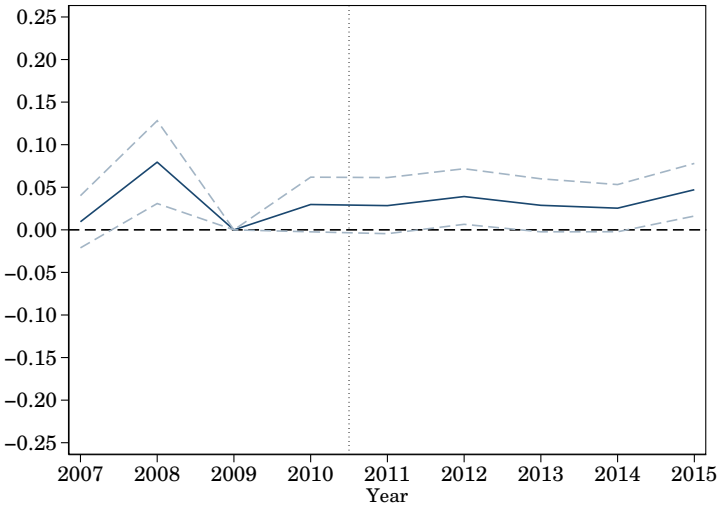
(b) Impact on Tax Payments



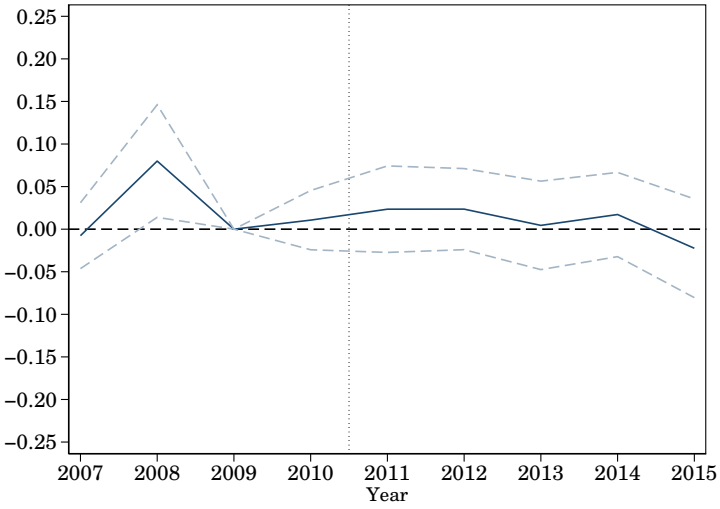
Notes: These figures examine the robustness of Figure 3, restricting the sample for common support in pre-treatment average assets. They show impact estimates of the reform on domestic sales/payroll (placebo test) and corporate income tax/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 5, which compares multinationals to internationally active domestic firms. 2009 is normalized to zero and 2010 serves as a placebo year. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table B.38 shows the same analysis in regression form.

Figure B.15:
Impact of the Reform on Corporate Income Tax
and Placebo Test on Domestic Sales
Robustness Check III: Scaling by Lagged Payroll

(a) Impact on Domestic Sales

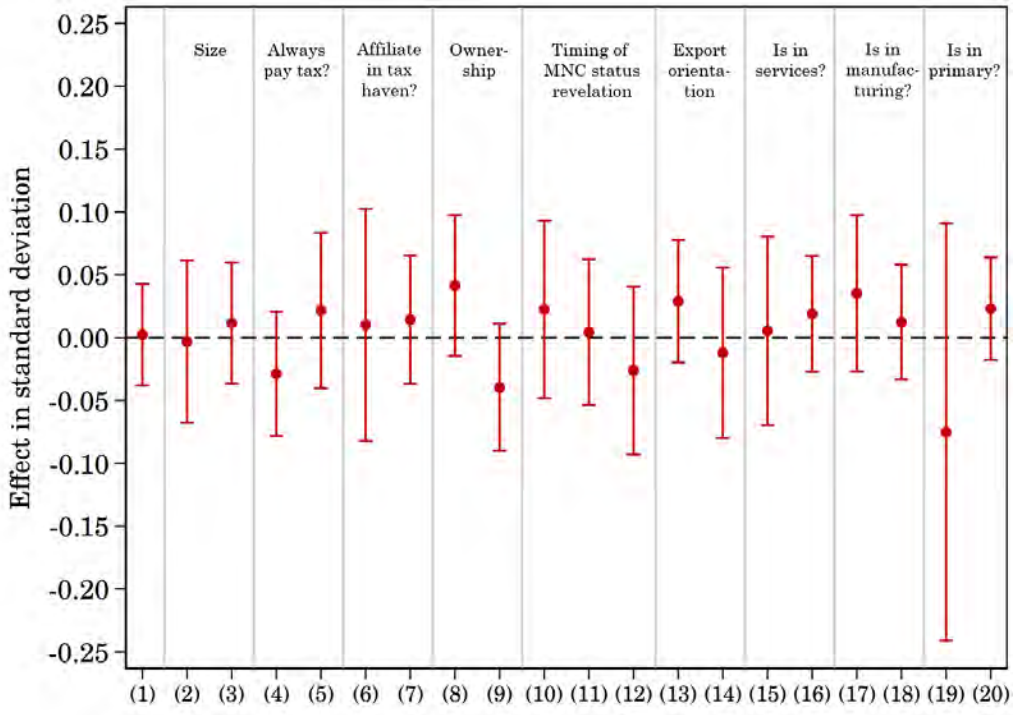


(b) Impact on Tax Payments



Notes: These figures examine the robustness of Figure 3, scaling the outcomes by lagged payroll. They show impact estimates of the reform on domestic sales/payroll (placebo test) and corporate income tax/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 5, which compares multinationals to internationally active domestic firms. 2009 is normalized to zero and 2010 serves as a placebo year. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table B.39 shows the same analysis in regression form.

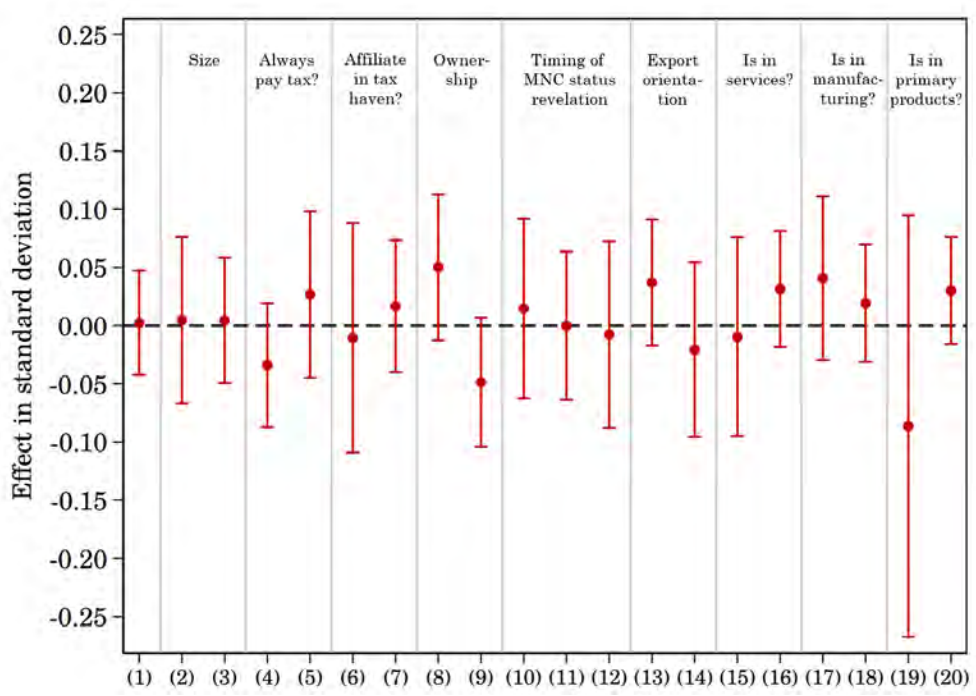
Figure B.16:
Impact of the Reform on Corporate Income Tax: Subgroup Analysis
Robustness Check I: 2007-2014



(1) All
(2) Large
(3) Medium
(4) Regularly paid taxes > 0 in the pre-treatment period
(5) Paid no tax multiple years in the pre-treatment period
(6) Made payments to tax havens
(7) Made no payments to tax havens
(8) Foreign-owned
(9) Chilean-owned
(10) Multinational status revealed pre-treatment
(11) Multinational status revealed post-treatment
(12) Multinational status from external sources
(13) Above the median exports/sales ratio
(14) Below the median exports/sales ratio
(15) Services
(16) Non-services
(17) Manufacturing
(18) Non-manufacturing
(19) Primary products
(20) Non-primary products

Notes: This figure examines the robustness of Figure A.4, by including data up to 2014. This figure shows point estimates of the impact of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. Column (1) shows the estimate for the full sample (as in Table A.2). Estimates by firm size (2) and (3) compare large/medium multinationals to large/medium domestic firms. Estimates (4) and (5) compare multinationals that regularly paid corporate income taxes/paid no such taxes more than once to the corresponding subgroups of domestic firms. Estimates (6)-(12) compare the corresponding subgroups of multinationals to the full sample of domestic firms: (6) multinationals with payments to tax havens, (7) multinationals without payments to tax havens, (8) foreign-owned multinationals, (9) Chilean-owned multinationals, (10)-(12) firms that revealed their multinational status to the tax authority pre-treatment, post-treatment, or never, respectively. The latter are identified as multinationals based on data from Dun & Bradstreet and Orbis. Estimates (13) and (14) compare multinationals with different levels of export-orientation (above vs. below median exports/sales ratio). Estimates by industry (15)-(20) compare multinationals in the sectors of services, manufacturing, and primary vs. the rest, respectively. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Figure B.17:
Impact of the Reform on Corporate Income Tax: Subgroup Analysis
Robustness Check II: 2007-2015



(1) All
(2) Large
(3) Medium
(4) Regularly paid taxes > 0 in the pre-treatment period
(5) Paid no tax multiple years in the pre-treatment period
(6) Made payments to tax havens
(7) Made no payments to tax havens
(8) Foreign-owned
(9) Chilean-owned
(10) Multinational status revealed pre-treatment
(11) Multinational status revealed post-treatment
(12) Multinational status from external sources
(13) Above the median exports/sales ratio
(14) Below the median exports/sales ratio
(15) Services
(16) Non-services
(17) Manufacturing
(18) Non-manufacturing
(19) Primary products
(20) Non-primary products

Notes: This figure examines the robustness of Figure A.4, by including data up to 2015. This figure shows point estimates of the impact of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms before and after the reform. Column (1) shows the estimate for the full sample (as in Table A.2). Estimates by firm size (2) and (3) compare large/medium multinationals to large/medium domestic firms. Estimates (4) and (5) compare multinationals that regularly paid corporate income taxes/paid no such taxes more than once to the corresponding subgroups of domestic firms. Estimates (6)-(12) compare the corresponding subgroups of multinationals to the full sample of domestic firms: (6) multinationals with payments to tax havens, (7) multinationals without payments to tax havens, (8) foreign-owned multinationals, (9) Chilean-owned multinationals, (10)-(12) firms that revealed their multinational status to the tax authority pre-treatment, post-treatment, or never, respectively. The latter are identified as multinationals based on data from Dun & Bradstreet and Orbis. Estimates (13) and (14) compare multinationals with different levels of export-orientation (above vs. below median exports/sales ratio). Estimates by industry (15)-(20) compare multinationals in the sectors of services, manufacturing, and primary vs. the rest, respectively. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals.

Tables

Table B.1: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check I: Difference Between Destination Country and Chile's Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate diff × intra-group	-0.051***	-0.027***	-0.026***	-0.008*	-0.005
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate diff	0.009	-0.006	0.014	0.003	-0.005
	(0.014)	(0.009)	(0.013)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate diff × intra-group	-0.050***	-0.027***	-0.026***	-0.009**	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.003)
Tax rate diff	0.014	-0.014	0.033***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate diff × intra-group	-0.048***	-0.025***	-0.026***	-0.010***	-0.004
	(0.010)	(0.006)	(0.008)	(0.004)	(0.003)
Tax rate diff	0.021	-0.009	0.036***	0.003	-0.009*
	(0.014)	(0.009)	(0.012)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by replacing the explanatory variable Tax Rate$_{jt}$ in the destination country with the difference between this tax rate and Chile's tax rate. It shows the semi-elasticity of international payments with respect to differences between destination country and Chile's tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the gap between destination country and Chile's tax rate. For example, the first coefficient indicates that a one percentage point increase is associated with 5.1% higher payments to affiliates in the corresponding country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate diff.* indicates the difference between the statutory tax rate in the destination country and Chile's tax rate. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.2: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check II: Alternative Order of Tax Rate Data Sources

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.056***	-0.024***	-0.032***	-0.008*	-0.003
	(0.011)	(0.008)	(0.009)	(0.004)	(0.003)
Tax rate	0.014	-0.005	0.022*	0.002	-0.012**
	(0.014)	(0.009)	(0.013)	(0.005)	(0.006)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.055***	-0.024***	-0.032***	-0.008*	-0.003
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.022	-0.013	0.041***	0.001	-0.013**
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.055***	-0.023***	-0.033***	-0.010**	-0.004
	(0.010)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.030**	-0.008	0.045***	0.001	-0.010**
	(0.013)	(0.008)	(0.012)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by reversing the pecking order of data sources for destination country tax rates. The order is reversed from Habu (2017), OECD (2019b) and then KPMG (2019) to KPMG (2019), OECD (2019b), and then Habu (2017). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates, following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point increase is associated with 5.6% higher payments to affiliates in the corresponding country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.3: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check III: Alternative Data Source for Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.047***	-0.019**	-0.025**	-0.007	-0.003
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Tax rate	0.008	-0.006	0.012	0.001	-0.006
	(0.015)	(0.009)	(0.014)	(0.006)	(0.006)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.044***	-0.018**	-0.024**	-0.008*	-0.003
	(0.012)	(0.007)	(0.010)	(0.005)	(0.003)
Tax rate	0.014	-0.014	0.029**	0.001	-0.008
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.045***	-0.018**	-0.025**	-0.009**	-0.003
	(0.012)	(0.007)	(0.010)	(0.004)	(0.003)
Tax rate	0.017	-0.009	0.028**	0.001	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by replacing the tax rate data sources with an alternative source from TaxFoundation (2024). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates, following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point increase is associated with 4.7% higher payments to affiliates in the corresponding country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.4: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check IV: Firm × Year × Intra-Group Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.055***	-0.027***	-0.031***	-0.009*	-0.005
	(0.012)	(0.008)	(0.010)	(0.004)	(0.003)
Tax rate	0.011	-0.006	0.016	0.004	-0.004
	(0.014)	(0.009)	(0.013)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.009**	-0.005
	(0.012)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.015	-0.014	0.034***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.010**	-0.006**
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.022	-0.008	0.037***	0.003	-0.009
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Firm × year × intra-group FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by adding firm × year × intra-group status fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.5: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check V: Destination Country × Year FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.055***	-0.028***	-0.029***	-0.009**	-0.005
	(0.012)	(0.008)	(0.009)	(0.004)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.009**	-0.005
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.010**	-0.005*
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country × year FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by adding destination country × year fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.6: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VI: Firm × Destination Country FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.055***	-0.028***	-0.029***	-0.009**	-0.005
	(0.012)	(0.008)	(0.009)	(0.004)	(0.003)
Tax rate	0.011	-0.006	0.016	0.004	-0.005
	(0.014)	(0.009)	(0.013)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.009**	-0.005
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.015	-0.014	0.034***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.051***	-0.027***	-0.027***	-0.010**	-0.005*
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.022	-0.008	0.037***	0.003	-0.009*
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Firm × destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by adding firm × destination country fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2 over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.7: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VII: Firm × Destination Country × Intra-Group Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.037	-0.034**	-0.007	-0.010	-0.001
	(0.026)	(0.017)	(0.019)	(0.007)	(0.008)
Tax rate	0.002	-0.003	0.004	0.004	-0.006
	(0.017)	(0.011)	(0.014)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.044*	-0.038**	-0.013	-0.012	-0.006
	(0.024)	(0.016)	(0.017)	(0.008)	(0.007)
Tax rate	0.011	-0.009	0.026**	0.004	-0.008
	(0.016)	(0.011)	(0.013)	(0.006)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.045*	-0.025	-0.021	-0.017**	-0.004
	(0.024)	(0.016)	(0.017)	(0.008)	(0.007)
Tax rate	0.019	-0.009	0.034**	0.006	-0.009*
	(0.017)	(0.011)	(0.013)	(0.006)	(0.006)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group × destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 2 by adding firm × destination country × intra-group status fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2 over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 3.7% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.8: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VIII: Rescaled Payments in 1,000 of USD

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.022***	-0.012***	-0.009**	-0.004*	-0.002
	(0.005)	(0.004)	(0.004)	(0.002)	(0.001)
Tax rate	0.004	-0.004	0.007	0.003	-0.002
	(0.006)	(0.004)	(0.005)	(0.002)	(0.002)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.020***	-0.012***	-0.008*	-0.004**	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.006	-0.007*	0.014***	0.002	-0.003
	(0.006)	(0.004)	(0.005)	(0.002)	(0.002)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.019***	-0.012***	-0.008*	-0.004**	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.009	-0.004	0.016***	0.002	-0.004
	(0.006)	(0.004)	(0.005)	(0.002)	(0.002)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.837	0.326	0.461	0.096	0.082

Notes: This table examines the robustness of the results presented in Table 2 by rescaling outcome values (Y) in 1,000 of USD. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2 over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.9: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check IX: Extensive Margin Calibration (5^{th} percentile)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.020***	-0.011***	-0.009**	-0.004*	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Tax rate	0.004	-0.004	0.007	0.003	-0.002
	(0.006)	(0.004)	(0.005)	(0.002)	(0.002)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.018***	-0.011***	-0.007*	-0.004**	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Tax rate	0.006	-0.007*	0.014***	0.002	-0.004
	(0.006)	(0.004)	(0.005)	(0.002)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.017***	-0.011***	-0.007	-0.004**	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.008	-0.005	0.016***	0.003	-0.004
	(0.006)	(0.004)	(0.005)	(0.002)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × intra-group	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	7.89	7.45	7.49	6.91	6.59

Notes: This table examines the robustness of the results presented in Table 2 by calibrating the extensive margin at the 5^{th} percentile values of each outcome (i.e., transformed outcomes are equal to their 5^{th} percentile value when the outcome is equal to zero). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2 over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.10: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check X: Extensive Margin Calibration (10^{th} percentile)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.016***	-0.009***	-0.006*	-0.003*	-0.001
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.003	-0.004	0.006	0.002	-0.002
	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.014***	-0.009***	-0.005	-0.003*	-0.001
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.005	-0.006*	0.012***	0.002	-0.003
	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.013***	-0.009***	-0.004	-0.003**	-0.001
	(0.004)	(0.003)	(0.004)	(0.002)	(0.001)
Tax rate	0.007	-0.004	0.013***	0.003	-0.003
	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	8.59	8.40	8.18	7.93	7.51

Notes: This table examines the robustness of the results presented in Table 2 by calibrating the extensive margin at the 10^{th} percentile values of each outcome (i.e., transformed outcomes are equal to their 10^{th} percentile value when the outcome is equal to zero). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2 over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.5% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.11: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XI: Poisson Pseudo-Maximum-Likelihood (PPML)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.042	-0.033	-0.031	-0.037	-0.064
	(0.036)	(0.050)	(0.042)	(0.132)	(0.078)
Tax rate	0.028	0.025	0.022	0.052*	0.055
	(0.044)	(0.066)	(0.052)	(0.030)	(0.156)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.044	-0.030	-0.033	-0.064	-0.088
	(0.035)	(0.048)	(0.040)	(0.157)	(0.083)
Tax rate	0.037	0.025	0.068	0.092	0.014
	(0.052)	(0.067)	(0.050)	(0.061)	(0.141)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.045	-0.026	-0.035	-0.074	-0.088
	(0.034)	(0.047)	(0.038)	(0.169)	(0.081)
Tax rate	0.025	0.013	0.076	0.146*	-0.017
	(0.058)	(0.063)	(0.049)	(0.089)	(0.133)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	203,554	56,463	47,383	32,250	67,458

Notes: This table examines the robustness of the results presented in Table 2 by estimating Equation 2 through a PPML model with the outcome in levels. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.8% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in levels. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.12: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XII: Scaling by Total Sales

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.037	-0.031**	0.007	-0.001*	-0.000
	(0.036)	(0.015)	(0.010)	(0.001)	(0.000)
Tax rate	-0.018	0.004	-0.015	0.001	-0.001
	(0.041)	(0.013)	(0.012)	(0.001)	(0.001)
Observations	44,860	44,860	44,860	44,860	44,860
Panel B: Up to 2014					
Tax rate × intra-group	-0.026	-0.029**	0.010	-0.002**	-0.000
	(0.035)	(0.014)	(0.010)	(0.001)	(0.000)
Tax rate	-0.007	-0.001	-0.007	0.001	-0.001**
	(0.039)	(0.012)	(0.013)	(0.001)	(0.001)
Observations	51,276	51,276	51,276	51,276	51,276
Panel C: Up to 2015					
Tax rate × intra-group	-0.028	-0.030**	0.012	-0.002**	-0.000
	(0.035)	(0.014)	(0.010)	(0.001)	(0.000)
Tax rate	-0.001	0.004	0.002	0.001	-0.002**
	(0.038)	(0.013)	(0.013)	(0.001)	(0.001)
Observations	57,592	57,592	57,592	57,592	57,592
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,204	1,204	1,204	1,204	1,204
Pre-treatment average countries per firm	2.58	2.58	2.58	2.58	2.58
Mean outcome in 2009	3.35	1.08	0.76	0.05	0.03

Notes: This table examines the robustness of the results presented in Table 2 by normalizing the outcome in levels by contemporaneous total sales. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.8% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y + sqrt(1 + Y^2))$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.13: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XIII: Extensive Margin

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.00127	-0.00095*	-0.00053	-0.00019	-0.00020
	(0.00090)	(0.00058)	(0.00073)	(0.00039)	(0.00031)
Tax rate × intra-group	-0.00433***	-0.00185***	-0.00280***	-0.00064	-0.00033
	(0.00104)	(0.00065)	(0.00086)	(0.00044)	(0.00030)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.00060	-0.00076	-0.00020	-0.00020	-0.00027
	(0.00088)	(0.00054)	(0.00070)	(0.00039)	(0.00031)
Tax rate × intra-group	-0.00427***	-0.00181***	-0.00275***	-0.00068	-0.00031
	(0.00103)	(0.00063)	(0.00086)	(0.00044)	(0.00030)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.00094	-0.00078	-0.00045	-0.00028	-0.00051
	(0.00087)	(0.00054)	(0.00070)	(0.00037)	(0.00033)
Tax rate × intra-group	-0.00410***	-0.00178***	-0.00267***	-0.00071	-0.00023
	(0.00101)	(0.00062)	(0.00085)	(0.00044)	(0.00031)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.198	0.073	0.122	0.021	0.021

Notes: This table examines the robustness of the results presented in Table 2 by estimating a linear probability model, where the outcome equals to 1 when firm i makes a payment to the destination country j in year t, and zero otherwise. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with a 0.49% higher probability of making payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.14: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XIV: Extensive Margin as Above Pre-Treatment (2007-2009) Average

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.00423***	-0.00221***	-0.00259***	-0.00068*	-0.00044
	(0.00097)	(0.00061)	(0.00080)	(0.00035)	(0.00028)
Tax rate	0.00072	-0.00052	0.00139	0.00001	-0.00026
	(0.00127)	(0.00084)	(0.00111)	(0.00055)	(0.00043)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.00403***	-0.00216***	-0.00246***	-0.00075**	-0.00046*
	(0.00094)	(0.00056)	(0.00077)	(0.00034)	(0.00025)
Tax rate	0.00128	-0.00129	0.00295***	-0.00004	-0.00067
	(0.00125)	(0.00086)	(0.00113)	(0.00049)	(0.00043)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.00406***	-0.00214***	-0.00258***	-0.00084**	-0.00052**
	(0.00091)	(0.00054)	(0.00074)	(0.00033)	(0.00023)
Tax rate	0.00189	-0.00072	0.00308***	-0.00006	-0.00065
	(0.00127)	(0.00082)	(0.00111)	(0.00046)	(0.00043)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.18673	0.07070	0.11634	0.02058	0.01980

Notes: This table examines the robustness of the results presented in Table 2 by estimating a linear probability model, where the outcome equals to 1 when firm i makes a payment to destination country j that is higher than the pre-treatment average of payments from 2007 to 2009 to that country j, and zero otherwise. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with a 0.49% higher probability of making payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.15: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XV: IHS Transformation of Outcome Variables

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.058***	-0.029***	-0.032***	-0.009**	-0.005
	(0.012)	(0.008)	(0.010)	(0.005)	(0.004)
Tax rate	0.011	-0.006	0.017	0.004	-0.005
	(0.015)	(0.010)	(0.013)	(0.006)	(0.005)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group	-0.054***	-0.029***	-0.029***	-0.010**	-0.005
	(0.012)	(0.007)	(0.010)	(0.005)	(0.003)
Tax rate	0.016	-0.015	0.036***	0.003	-0.009*
	(0.015)	(0.010)	(0.013)	(0.006)	(0.005)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group	-0.054***	-0.029***	-0.029***	-0.011**	-0.005*
	(0.012)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.023	-0.009	0.039***	0.003	-0.009*
	(0.015)	(0.010)	(0.013)	(0.006)	(0.006)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.315	0.872	1.368	0.253	0.235

Notes: This table examines the robustness of the results presented in Table 2 by using the inverse hyperbolic sine (IHS) transformation of the outcome variables. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with 5.8% higher payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y + sqrt(1 + Y^2))$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.16: Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XVI: Subsample of Firms Engaging in International Trade

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group	-0.055***	-0.028***	-0.029***	-0.009**	-0.005
	(0.012)	(0.008)	(0.009)	(0.004)	(0.003)
Tax rate	0.012	-0.006	0.016	0.004	-0.005
	(0.015)	(0.009)	(0.013)	(0.006)	(0.005)
Observations	43,848	43,848	43,848	43,848	43,848
Panel B: Up to 2014					
Tax rate × intra-group	-0.051***	-0.028***	-0.026***	-0.010**	-0.005
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.016	-0.014	0.035***	0.003	-0.009*
	(0.014)	(0.010)	(0.013)	(0.006)	(0.005)
Observations	50,112	50,112	50,112	50,112	50,112
Panel C: Up to 2015					
Tax rate × intra-group	-0.050***	-0.027***	-0.027***	-0.011**	-0.005*
	(0.011)	(0.007)	(0.009)	(0.004)	(0.003)
Tax rate	0.024	-0.009	0.038***	0.003	-0.009
	(0.014)	(0.009)	(0.013)	(0.005)	(0.005)
Observations	56,376	56,376	56,376	56,376	56,376
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,149	1,149	1,149	1,149	1,149
Pre-treatment average countries per firm	2.73	2.73	2.73	2.73	2.73
Mean outcome in 2009	2.205	0.848	1.287	0.242	0.226

Notes: This table examines the robustness of the results presented in Table 2 by considering a subsample of firms that report international trade (exports or imports) in customs registries. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 2, over the full study period from 2007 onward. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. For example, the first coefficient indicates that a one percentage point reduction in the destination country tax rate is associated with a 0.55% higher probability of making payments to affiliates in that country, relative to non-affiliates. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.17: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check I: Difference Between Destination Country and Chile's Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate diff × intra-group × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × intra-group	-0.049***	-0.022***	-0.028***	-0.009*	-0.003
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate diff × intra-group × post	-0.007	-0.009	-0.001	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × intra-group	-0.048***	-0.022***	-0.027***	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate diff × intra-group × post	-0.009	-0.008	-0.003	-0.003	-0.006*
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × intra-group	-0.044***	-0.021***	-0.026**	-0.009*	-0.001
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate diff	Yes	Yes	Yes	Yes	Yes
Tax rate diff × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	2.178	2.178	2.178	2.178

Notes: This table examines the robustness of the results presented in Table 3 by replacing the explanatory variable Tax Rate$_{jt}$ in the destination country with the difference between this tax rate and Chile's tax rate. It shows the semi-elasticity of international payments with respect to differences in the difference between destination country and Chile's tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the gap between destination country and Chile's tax rate. A negative semi-elasticity implies payments to a given country increase as the gap between tax rates falls, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate diff. × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate diff.* indicates the difference between the statutory tax rate in the destination country and Chile's tax rate. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.18: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check II: Alternative Order of Tax Rate Data Sources

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.020*	-0.019***	0.000	0.000	-0.010***
	(0.011)	(0.007)	(0.008)	(0.005)	(0.004)
Tax rate × intra-group	-0.047***	-0.016*	-0.032***	-0.008*	0.002
	(0.012)	(0.009)	(0.010)	(0.005)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.015	-0.015**	-0.000	-0.000	-0.009***
	(0.011)	(0.007)	(0.008)	(0.005)	(0.003)
Tax rate × intra-group	-0.046***	-0.015*	-0.032***	-0.008*	0.002
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.018*	-0.014**	-0.003	-0.001	-0.012***
	(0.011)	(0.007)	(0.008)	(0.004)	(0.003)
Tax rate × intra-group	-0.044***	-0.015*	-0.031***	-0.009*	0.003
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by reversing the pecking order of data sources for destination country tax rates. The order is reversed from Habu (2017), OECD (2019b) and then KPMG (2019) to KPMG (2019), OECD (2019b), and then Habu (2017). It shows impact estimates of the reform on the semi-elasticity of international payments with respect to differences in destination country tax rates, following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.19: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check III: Alternative Data Source for Tax Rates

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.018	-0.015**	-0.003	0.000	-0.006*
	(0.011)	(0.007)	(0.008)	(0.005)	(0.004)
Tax rate × intra-group	-0.039***	-0.012	-0.024**	-0.007	-0.000
	(0.014)	(0.009)	(0.011)	(0.005)	(0.004)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.011	-0.011*	-0.001	0.000	-0.006*
	(0.011)	(0.006)	(0.008)	(0.005)	(0.004)
Tax rate × intra-group	-0.037***	-0.011	-0.023**	-0.008	0.000
	(0.014)	(0.009)	(0.011)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.016	-0.011*	-0.005	-0.001	-0.008**
	(0.011)	(0.007)	(0.008)	(0.005)	(0.004)
Tax rate × intra-group	-0.035**	-0.011	-0.022*	-0.008	0.001
	(0.014)	(0.008)	(0.011)	(0.005)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by replacing the tax rate data sources with an alternative source from TaxFoundation (2024). It shows impact estimates of the reform on the semi-elasticity of international payments with respect to differences in destination country tax rates, following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.20: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check IV: Firm × Year × Intra-Group Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	0.000	-0.006	0.002	-0.002	-0.005
	(0.014)	(0.009)	(0.011)	(0.004)	(0.004)
Tax rate × intra-group	-0.055***	-0.025***	-0.032***	-0.008	-0.003
	(0.013)	(0.009)	(0.010)	(0.005)	(0.004)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	0.009	-0.004	0.009	-0.003	-0.004
	(0.013)	(0.008)	(0.011)	(0.004)	(0.004)
Tax rate × intra-group	-0.055***	-0.025***	-0.032***	-0.008	-0.003
	(0.013)	(0.009)	(0.010)	(0.005)	(0.004)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	0.008	-0.004	0.008	-0.004	-0.005
	(0.013)	(0.009)	(0.011)	(0.004)	(0.004)
Tax rate × intra-group	-0.055***	-0.025***	-0.032***	-0.008	-0.003
	(0.013)	(0.009)	(0.010)	(0.005)	(0.004)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Firm × year × intra-group FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by adding firm × year × intra-group status fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.21: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check V: Destination Country × Year FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.013	-0.011	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.049***	-0.022***	-0.028***	-0.009*	-0.003
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.047***	-0.022***	-0.027***	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.009	-0.003	-0.002	-0.007*
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.045***	-0.021***	-0.025**	-0.009*	-0.001
	(0.013)	(0.008)	(0.010)	(0.005)	(0.004)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country × year FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by adding destination country × year fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.22: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VI: Firm × Destination Country FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.049***	-0.022***	-0.028***	-0.009*	-0.003
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.047***	-0.022***	-0.027***	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.009	-0.003	-0.002	-0.007**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.045***	-0.021***	-0.025**	-0.009*	-0.001
	(0.012)	(0.008)	(0.010)	(0.005)	(0.003)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Firm × destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by adding firm × destination country fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.23: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VII: Firm × Destination Country × Intra-Group Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.014	-0.011	-0.005	-0.001	-0.005
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.024	-0.019	-0.010	-0.012	0.005
	(0.025)	(0.015)	(0.019)	(0.008)	(0.007)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.008	-0.001	-0.001	-0.005
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.025	-0.021	-0.010	-0.011	0.000
	(0.023)	(0.015)	(0.017)	(0.008)	(0.007)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.008	-0.003	-0.002	-0.008**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.023	-0.009	-0.015	-0.013	0.002
	(0.023)	(0.015)	(0.017)	(0.008)	(0.007)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group × destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.178	0.821	1.283	0.238	0.220

Notes: This table examines the robustness of the results presented in Table 3 by adding firm × destination country × intra-group status fixed effects. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.24: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check VIII: Rescaled Payments in 1,000 of USD

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.005	-0.005	-0.001	0.000	-0.002
	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.019***	-0.010**	-0.009**	-0.004*	-0.001
	(0.006)	(0.004)	(0.004)	(0.002)	(0.001)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.002	-0.004	0.001	0.000	-0.002
	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.018***	-0.010**	-0.008*	-0.004*	-0.000
	(0.006)	(0.004)	(0.004)	(0.002)	(0.001)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.003	-0.004	0.000	-0.000	-0.003**
	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.017***	-0.009**	-0.007	-0.004*	0.000
	(0.006)	(0.004)	(0.004)	(0.002)	(0.001)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.837	0.326	0.461	0.096	0.082

Notes: This table examines the robustness of the results presented in Table 3 by rescaling outcome values (Y) in 1,000 of USD. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.25: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check IX: Extensive Margin Calibration (5^{th} percentile)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.004	-0.004	-0.001	0.001	-0.003
	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.018***	-0.009**	-0.008*	-0.004**	-0.000
	(0.006)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.001	-0.004	0.001	0.000	-0.003
	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.017***	-0.009**	-0.008*	-0.004**	-0.000
	(0.006)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.003	-0.004	0.000	-0.000	-0.004**
	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Tax rate × intra-group	-0.015***	-0.009**	-0.007	-0.004*	0.001
	(0.006)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	7.89	7.45	7.49	6.91	6.59

Notes: This table examines the robustness of the results presented in Table 3 by calibrating the extensive margin at the 5^{th} percentile values of each outcome (i.e., transformed outcomes are equal to their 5^{th} percentile value when the outcome is equal to zero). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.26: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check X: Extensive Margin Calibration (10^{th} percentile)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.003	-0.003	-0.000	0.001	-0.003*
	(0.004)	(0.002)	(0.003)	(0.001)	(0.002)
Tax rate × intra-group	-0.014***	-0.007**	-0.006	-0.003**	-0.000
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.001	-0.003	0.001	0.001	-0.002
	(0.004)	(0.002)	(0.003)	(0.001)	(0.002)
Tax rate × intra-group	-0.013***	-0.007**	-0.005	-0.003**	0.000
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.002	-0.003	0.001	0.000	-0.003**
	(0.004)	(0.002)	(0.003)	(0.001)	(0.002)
Tax rate × intra-group	-0.012**	-0.007**	-0.004	-0.003*	0.001
	(0.005)	(0.003)	(0.004)	(0.002)	(0.001)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	8.59	8.40	8.18	7.93	7.51

Notes: This table examines the robustness of the results presented in Table 3 by calibrating the extensive margin at the 10^{th} percentile values of each outcome (i.e., transformed outcomes are equal to their 10^{th} percentile value when the outcome is equal to zero). It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.27: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XI: Poisson Pseudo-Maximum-Likelihood (PPML)

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.038	0.007	-0.070*	-0.195	-0.017
	(0.034)	(0.046)	(0.042)	(0.146)	(0.112)
Tax rate × intra-group	-0.025	-0.038	0.010	-0.034	-0.054
	(0.042)	(0.055)	(0.047)	(0.129)	(0.050)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.037	0.011	-0.070	-0.272*	-0.059
	(0.036)	(0.046)	(0.043)	(0.153)	(0.121)
Tax rate × intra-group	-0.025	-0.038	0.011	-0.039	-0.047
	(0.041)	(0.052)	(0.046)	(0.151)	(0.049)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.036	0.014	-0.069	-0.290	-0.066
	(0.038)	(0.047)	(0.045)	(0.184)	(0.114)
Tax rate × intra-group	-0.025	-0.036	0.011	-0.035	-0.039
	(0.041)	(0.052)	(0.046)	(0.161)	(0.048)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	203,554	56,463	47,383	32,250	67,458

Notes: This table examines the robustness of the results presented in Table 3 by estimating Equation 3 through a PPML model with the outcome in levels. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in levels. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.28: Impact of the Reform on the Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XII: Scaling by Total Sales

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.013	-0.022*	0.012	0.000	-0.001
	(0.029)	(0.013)	(0.009)	(0.001)	(0.000)
Tax rate × intra-group	-0.031	-0.020	0.002	-0.002*	-0.000
	(0.040)	(0.017)	(0.012)	(0.001)	(0.000)
Observations	44,860	44,860	44,860	44,860	44,860
Panel B: Up to 2014					
Tax rate × intra-group × post	0.002	-0.019	0.015	0.000	-0.001
	(0.030)	(0.013)	(0.010)	(0.001)	(0.000)
Tax rate × intra-group	-0.026	-0.018	0.003	-0.002*	-0.000
	(0.040)	(0.017)	(0.012)	(0.001)	(0.000)
Observations	51,276	51,276	51,276	51,276	51,276
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.008	-0.021	0.014	-0.000	-0.001*
	(0.030)	(0.013)	(0.011)	(0.001)	(0.001)
Tax rate × intra-group	-0.021	-0.017	0.005	-0.002*	0.000
	(0.040)	(0.017)	(0.013)	(0.001)	(0.001)
Observations	57,592	57,592	57,592	57,592	57,592
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,204	1,204	1,204	1,204	1,204
Pre-treatment average countries per firm	2.58	2.58	2.58	2.58	2.58
Mean outcome in 2009	3.35	1.08	0.76	0.05	0.03

Notes: This table examines the robustness of the results presented in Table 3 by normalizing the outcome in levels by contemporaneous total sales. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in levels. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.29: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XIII: Extensive Margin

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.00127	-0.00095*	-0.00053	-0.00019	-0.00020
	(0.00090)	(0.00058)	(0.00073)	(0.00039)	(0.00031)
Tax rate × intra-group	-0.00433***	-0.00185***	-0.00280***	-0.00064	-0.00033
	(0.00104)	(0.00065)	(0.00086)	(0.00044)	(0.00030)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.00060	-0.00076	-0.00020	-0.00020	-0.00027
	(0.00088)	(0.00054)	(0.00070)	(0.00039)	(0.00031)
Tax rate × intra-group	-0.00427***	-0.00181***	-0.00275***	-0.00068	-0.00031
	(0.00103)	(0.00063)	(0.00086)	(0.00044)	(0.00030)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.00094	-0.00078	-0.00045	-0.00028	-0.00051
	(0.00087)	(0.00054)	(0.00070)	(0.00037)	(0.00033)
Tax rate × intra-group	-0.00410***	-0.00178***	-0.00267***	-0.00071	-0.00023
	(0.00101)	(0.00062)	(0.00085)	(0.00044)	(0.00031)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.198	0.073	0.122	0.021	0.021

Notes: This table examines the robustness of the results presented in Table 3 by estimating a linear probability model, where the outcome equals to 1 when firm i makes a payment to the destination country j in year t, and zero otherwise. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.30: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XIV: Extensive Margin as Above Pre-Treatment (2007-2009) Average

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.00129	-0.00093	-0.00036	-0.00017	-0.00027
	(0.00090)	(0.00058)	(0.00073)	(0.00040)	(0.00031)
Tax rate × intra-group	-0.00367***	-0.00177***	-0.00248***	-0.00061	-0.00031
	(0.00107)	(0.00066)	(0.00088)	(0.00042)	(0.00030)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.00080	-0.00076	-0.00010	-0.00018	-0.00032
	(0.00089)	(0.00055)	(0.00070)	(0.00040)	(0.00032)
Tax rate × intra-group	-0.00358***	-0.00172***	-0.00243***	-0.00066	-0.00029
	(0.00107)	(0.00065)	(0.00088)	(0.00042)	(0.00030)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.00112	-0.00076	-0.00038	-0.00025	-0.00056*
	(0.00087)	(0.00055)	(0.00071)	(0.00037)	(0.00033)
Tax rate × intra-group	-0.00337***	-0.00168***	-0.00237***	-0.00068	-0.00020
	(0.00105)	(0.00063)	(0.00087)	(0.00042)	(0.00031)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	0.18673	0.07070	0.11634	0.02058	0.01980

Notes: This table examines the robustness of the results presented in Table 3 by estimating a linear probability model, where the outcome equals to 1 when firm i makes a payment to destination country j that is higher than the pre-treatment average of payments from 2007 to 2009 to that country j, and zero otherwise. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.31: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XV: IHS Transformation of Outcome Variables

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.014	-0.012*	-0.005	-0.001	-0.004
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.052***	-0.024***	-0.030***	-0.009*	-0.003
	(0.013)	(0.009)	(0.011)	(0.005)	(0.004)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.010	-0.001	-0.001	-0.004
	(0.011)	(0.007)	(0.008)	(0.005)	(0.004)
Tax rate × intra-group	-0.050***	-0.023***	-0.029***	-0.009*	-0.002
	(0.013)	(0.008)	(0.011)	(0.005)	(0.004)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.010	-0.003	-0.002	-0.008*
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.047***	-0.022***	-0.027**	-0.010*	-0.001
	(0.013)	(0.008)	(0.011)	(0.005)	(0.004)
Observations	58,176	58,176	58,176	58,176	58,176
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,206	1,206	1,206	1,206	1,206
Pre-treatment average countries per firm	2.68	2.68	2.68	2.68	2.68
Mean outcome in 2009	2.315	0.872	1.368	0.253	0.235

Notes: This table examines the robustness of the results presented in Table 3 by using the inverse hyperbolic sine (IHS) transformation of the outcome variables. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y + sqrt(1 + Y^2))$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.32: Impact of the Reform on Sensitivity of International Payments to Differences in Destination Country Tax Rates
Robustness Check XVI: Subsample of Firms Engaging in International Trade

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × intra-group × post	-0.014	-0.012*	-0.005	-0.001	-0.004
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.048***	-0.023***	-0.027***	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.004)
Observations	43,848	43,848	43,848	43,848	43,848
Panel B: Up to 2014					
Tax rate × intra-group × post	-0.006	-0.010	-0.000	-0.001	-0.005
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.047***	-0.022***	-0.026**	-0.009*	-0.002
	(0.013)	(0.008)	(0.010)	(0.005)	(0.004)
Observations	50,112	50,112	50,112	50,112	50,112
Panel C: Up to 2015					
Tax rate × intra-group × post	-0.010	-0.010	-0.003	-0.002	-0.008**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × intra-group	-0.044***	-0.021***	-0.025**	-0.009*	-0.001
	(0.013)	(0.008)	(0.010)	(0.005)	(0.004)
Observations	56,376	56,376	56,376	56,376	56,376
Tax rate	Yes	Yes	Yes	Yes	Yes
Tax rate × post	Yes	Yes	Yes	Yes	Yes
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm × year FE	Yes	Yes	Yes	Yes	Yes
Firm × intra-group FE	Yes	Yes	Yes	Yes	Yes
Destination country FE	Yes	Yes	Yes	Yes	Yes
Number of firms	1,149	1,149	1,149	1,149	1,149
Pre-treatment average countries per firm	2.73	2.73	2.73	2.73	2.73
Mean outcome in 2009	2.205	2.205	2.205	2.205	2.205

Notes: This table examines the robustness of the results presented in Table 3 by considering a subsample of firms that report international trade (exports or imports) in customs registries. It shows the semi-elasticity of international payments with respect to differences in destination country tax rates following Equation 3. Coefficients indicate the change in international payments associated with a one percentage point increase in the destination country tax rate. A negative semi-elasticity implies payments to a given country increase as tax rates fall, consistent with tax-motivated payments. This is the case in the pre-treatment period, as shown by the Tax rate × intra-group coefficient. If the reform was effective at reducing tax-motivated payments to affiliates abroad, we would expect the coefficient for the post-treatment period in the first row to be positive. This analysis is at the level of firm-year-country-intra-group status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Intra-Group* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.33: Impact of the Reform on the Sensitivity of Trade in Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check I: Alternative Order of Tax Rate Data Sources

	Imports			Exports		
	(1) Payments	(2) Quantities	(3) Unit Prices	(4) Payments	(5) Quantities	(6) Unit prices
Panel A: Up to 2013						
Tax rate × intra-group × post	-0.0092	-0.0144	0.0037	0.0171**	0.0192**	-0.0062
	(0.0092)	(0.0124)	(0.0092)	(0.0078)	(0.0090)	(0.0077)
Tax rate × intra-group	-0.0108	0.0243	-0.0425***	0.0236	0.0315*	0.0085
	(0.0182)	(0.0228)	(0.0133)	(0.0158)	(0.0177)	(0.0092)
Observations	176,128	176,128	176,128	92,292	92,292	92,292
Number of firms	2,280	2,280	2,280	1,595	1,595	1,595
Panel B: Up to 2014						
Tax rate × intra-group × post	-0.0097	-0.0114	-0.0001	0.0183**	0.0173*	-0.0023
	(0.0094)	(0.0126)	(0.0095)	(0.0079)	(0.0093)	(0.0071)
Tax rate × intra-group	-0.0107	0.0244	-0.0425***	0.0236	0.0316*	0.0085
	(0.0182)	(0.0228)	(0.0133)	(0.0157)	(0.0176)	(0.0092)
Observations	210,233	210,233	210,233	109,618	109,618	109,618
Number of firms	2,335	2,335	2,335	1,680	1,680	1,680
Panel C: Up to 2015						
Tax rate × intra-group × post	-0.0086	-0.0109	-0.0002	0.0194**	0.0166*	-0.0000
	(0.0097)	(0.0130)	(0.0101)	(0.0082)	(0.0096)	(0.0069)
Tax rate × intra-group	-0.0107	0.0246	-0.0426***	0.0237	0.0316*	0.0085
	(0.0181)	(0.0228)	(0.0133)	(0.0156)	(0.0175)	(0.0092)
Observations	243,660	243,660	243,660	126,313	126,313	126,313
Number of firms	2,364	2,364	2,364	1,755	1,755	1,755
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes	Yes
Firm × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table examines the robustness of the results presented in Table 4 by reversing the pecking order of data sources for trading partner country tax rates. The order is reversed from Habu (2017), OECD (2019b) and then KPMG (2019) to KPMG (2019), OECD (2019b), and then Habu (2017). It shows impact estimates of the reform on the semi-elasticity of trade in goods with respect to differences in destination country tax rates, following Equation 4. Likely intra-group trade (imports or exports) are defined as those firm-country combinations for which the amount of intra-group trade in the tax data is between 80% and 120% of imports or exports in the customs data, respectively. Similarly, likely not intra-group trade (imports or exports) are defined as firm-country combinations where the share of intra-group trade is between 0% and 20% (see Section E for details). *Taxrate* is the statutory corporate tax rate of country j in year t. *Intra-Group* is a dummy that equals 1 if a firm-country pair is likely to engage in intra-group trade and equals zero if a firm-country pair's trade is likely not to be intra-group. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.34: Impact of the Reform on the Sensitivity of Trade in Goods to Differences in Trading Partner Country Tax Rates
Robustness Check II: Alternative Data Source for Tax Rates

	Imports			Exports		
	(1) Payments	(2) Quantities	(3) Unit Prices	(4) Payments	(5) Quantities	(6) Unit prices
Panel A: Up to 2013						
Tax rate × intra-group × post	-0.0069	-0.0128	0.0050	0.0165**	0.0194**	-0.0070
	(0.0100)	(0.0134)	(0.0096)	(0.0083)	(0.0099)	(0.0076)
Tax rate × intra-group	-0.0108	0.0284	-0.0452***	0.0200	0.0280	0.0077
	(0.0189)	(0.0238)	(0.0138)	(0.0169)	(0.0190)	(0.0091)
Observations	176,128	176,128	176,128	92,292	92,292	92,292
Number of firms	2,280	2,280	2,280	1,595	1,595	1,595
Panel B: Up to 2014						
Tax rate × intra-group × post	-0.0074	-0.0094	0.0012	0.0177**	0.0179*	-0.0036
	(0.0103)	(0.0137)	(0.0099)	(0.0083)	(0.0101)	(0.0070)
Tax rate × intra-group	-0.0107	0.0285	-0.0452***	0.0202	0.0282	0.0077
	(0.0189)	(0.0237)	(0.0138)	(0.0168)	(0.0189)	(0.0091)
Observations	210,233	210,233	210,233	109,618	109,618	109,618
Number of firms	2,335	2,335	2,335	1,680	1,680	1,680
Panel C: Up to 2015						
Tax rate × intra-group × post	-0.0074	-0.0100	0.0006	0.0201**	0.0183*	-0.0005
	(0.0106)	(0.0142)	(0.0105)	(0.0086)	(0.0104)	(0.0067)
Tax rate × intra-group	-0.0106	0.0286	-0.0453***	0.0203	0.0283	0.0077
	(0.0189)	(0.0237)	(0.0138)	(0.0167)	(0.0188)	(0.0091)
Observations	243,660	243,660	243,660	126,313	126,313	126,313
Number of firms	2,364	2,364	2,364	1,755	1,755	1,755
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes	Yes
Firm × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table examines the robustness of the results presented in Table 4 by replacing the tax rate data sources with an alternative source from TaxFoundation (2024). It shows impact estimates of the reform on the semi-elasticity of trade in goods with respect to differences in trading partner country tax rates, following Equation 4. Likely intra-group trade (imports or exports) are defined as those firm-country combinations for which the amount of intra-group trade in the tax data is between 80% and 120% of imports or exports in the customs data, respectively. Similarly, likely not intra-group trade (imports or exports) are defined as firm-country combinations where the share of intra-group trade is between 0% and 20% (see Section E for details). *Taxrate* is the statutory corporate tax rate of country j in year t. *Intra-Group* is a dummy that equals 1 if a firm-country pair is likely to engage in intra-group trade and equals zero if a firm-country pair's trade is likely not to be intra-group. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.35: Impact of the Reform on the Sensitivity of Trade in Goods to Differences in Trading Partner Country Tax Rates
Robustness Check III: Country-Firm Pairs with Different Intra-Group Shares

	Imports			Exports		
	(1) Payments	(2) Quantities	(3) Unit Prices	(4) Payments	(5) Quantities	(6) Unit prices
Panel A: Up to 2013						
Tax rate × intra-group × post	0.0015	0.0105	-0.0041	0.0163*	0.0179	-0.0009
	(0.0082)	(0.0107)	(0.0078)	(0.0090)	(0.0112)	(0.0059)
Tax rate × intra-group	-0.0497***	-0.0483**	-0.0269**	0.0172	0.0231	0.0097
	(0.0177)	(0.0229)	(0.0107)	(0.0190)	(0.0211)	(0.0090)
Observations	168,584	168,584	168,584	88,634	88,634	88,634
Number of firms	2,277	2,277	2,277	1,591	1,591	1,591
Panel B: Up to 2014						
Tax rate × intra-group × post	-0.0011	0.0099	-0.0078	0.0192**	0.0172	0.0023
	(0.0081)	(0.0108)	(0.0076)	(0.0095)	(0.0115)	(0.0060)
Tax rate × intra-group	-0.0496***	-0.0482**	-0.0269**	0.0174	0.0233	0.0097
	(0.0177)	(0.0229)	(0.0107)	(0.0189)	(0.0210)	(0.0090)
Observations	201,277	201,277	201,277	105,295	105,295	105,295
Number of firms	2,331	2,331	2,331	1,676	1,676	1,676
Panel C: Up to 2015						
Tax rate × intra-group × post	-0.0012	0.0103	-0.0083	0.0223**	0.0199*	0.0030
	(0.0083)	(0.0110)	(0.0078)	(0.0098)	(0.0116)	(0.0059)
Tax rate × intra-group	-0.0496***	-0.0480**	-0.0270**	0.0176	0.0235	0.0098
	(0.0177)	(0.0229)	(0.0107)	(0.0188)	(0.0209)	(0.0090)
Observations	233,334	233,334	233,334	121,336	121,336	121,336
Number of firms	2,361	2,361	2,361	1,753	1,753	1,753
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes	Yes
Firm × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table examines the robustness of the results presented in Table 4 by defining intra-group trade as those in firm-country combinations for which the amount of intra-group trade in the tax data is between 90% and 110% of either imports or exports in the trade data, while likely not intra-group trade is defined between 0% and 10% (see Section E for details). It shows impact estimates of the reform on log of values, quantities and unit prices of multinational firms' likely intra-group trade compared to multinational firms' likely not intra-group trade, controlling for firm × quarter fixed effects, following Equation 4. *Taxrate* is the statutory corporate tax rate of country j in year t. *Intra-Group* is a dummy that equals 1 if a firm-country pair is likely to engage in intra-group trade and equals zero if a firm-country pair's trade is likely not to be intra-group. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.36: Impact of the Reform on the Sensitivity of Trade of Goods
to Differences in Trading Partner Country Tax Rates
Robustness Check IV: Country-Firm Pairs with Different Intra-Group Shares

	Imports			Exports		
	(1) Payments	(2) Quantities	(3) Unit Prices	(4) Payments	(5) Quantities	(6) Unit prices
Panel A: Up to 2013						
Tax rate × intra-group × post	0.0107	0.0255*	-0.0063	0.0163*	0.0145	0.0048
	(0.0129)	(0.0155)	(0.0126)	(0.0092)	(0.0116)	(0.0053)
Tax rate × intra-group	-0.0447*	-0.0490	-0.0186	0.0234	0.0323	0.0026
	(0.0268)	(0.0307)	(0.0154)	(0.0192)	(0.0217)	(0.0083)
Observations	162,461	162,461	162,461	85,958	85,958	85,958
Number of firms	2,271	2,271	2,271	1,584	1,584	1,584
Panel B: Up to 2014						
Tax rate × intra-group × post	0.0116	0.0295*	-0.0094	0.0170*	0.0121	0.0080
	(0.0126)	(0.0155)	(0.0120)	(0.0093)	(0.0118)	(0.0053)
Tax rate × intra-group	-0.0446*	-0.0490	-0.0186	0.0236	0.0325	0.0026
	(0.0267)	(0.0307)	(0.0154)	(0.0191)	(0.0216)	(0.0083)
Observations	194,006	194,006	194,006	102,154	102,154	102,154
Number of firms	2,326	2,326	2,326	1,671	1,671	1,671
Panel C: Up to 2015						
Tax rate × intra-group × post	0.0123	0.0283*	-0.0091	0.0190**	0.0140	0.0085
	(0.0132)	(0.0159)	(0.0121)	(0.0096)	(0.0118)	(0.0054)
Tax rate × intra-group	-0.0446*	-0.0489	-0.0186	0.0237	0.0326	0.0026
	(0.0267)	(0.0307)	(0.0154)	(0.0190)	(0.0216)	(0.0083)
Observations	224,915	224,915	224,915	117,713	117,713	117,713
Number of firms	2,356	2,356	2,356	1,750	1,750	1,750
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes	Yes
Firm × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table examines the robustness of the results presented in Table 4 by defining intra-group trade as those in firm-country combinations for which the amount of intra-group trade in the tax data is between 95% and 105% of either imports or exports in the trade data, while likely not intra-group trade is defined between 0% and 5% (see Section E for details). It shows impact estimates of the reform on log of values, quantities and unit prices of multinational firms' likely intra-group trade compared to multinational firms' likely not intra-group trade, controlling for firm × quarter fixed effects, following Equation 4. *Taxrate* is the statutory corporate tax rate of country j in year t. *Intra-Group* is a dummy that equals 1 if a firm-country pair is likely to engage in intra-group trade and equals zero if a firm-country pair's trade is likely not to be intra-group. *Post* is a dummy equal to 1 from 2011 onward. Outcomes in $\log(Y)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1.

Table B.37:
Impact of the Reform on Corporate Income Tax and Placebo Test on Domestic Sales
Robustness Check I: Common Support Based on Pre-Treatment Average Sales

	(1) Tax Paid	(2) Domestic Sales
Panel A: Up to 2013		
Post × multinational	-0.00283	0.00896
	(0.00728)	(0.29735)
Effect in % change	-2.26 %	0.09 %
Observations	94,045	94,045
Panel B: Up to 2014		
Post × multinational	-0.00086	0.06197
	(0.00760)	(0.29054)
Effect in % change	-0.69 %	0.64 %
Observations	107,480	107,480
Panel C: Up to 2015		
Post × multinational	0.00025	0.20380
	(0.00857)	(0.30442)
Effect in % change	0.20 %	2.10 %
Observations	120,915	120,915
Pre-treatment avg sales/payroll × year	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes
(Pre-treatment avg sales) squared × year	Yes	Yes
Industry × year	Yes	Yes
Firm FE	Yes	Yes
Mean outcome of multinational firms in 2009	0.125	9.692
Number of multinational firms	2,249	2,249
Number of control firms	11,186	11,186

Notes: This table examines the robustness of the results presented in Tables A.2 and A.3, by controlling for common support based on pre-treatment average sales. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure B.13.

Table B.38:
Impact of the Reform on Corporate Income Tax and Placebo Test on Domestic Sales
Robustness Check II: Common Support Based on Pre-Treatment Average Assets

	(1) Tax Paid	(2) Domestic Sales
Panel A: Up to 2013		
Post × multinational	0.00208	0.05170
	(0.00732)	(0.28149)
Effect in % change	1.69 %	0.49 %
Observations	86,954	86,954
Panel B: Up to 2014		
Post × multinational	0.00193	-0.01994
	(0.00760)	(0.27675)
Effect in % change	1.57 %	-0.19 %
Observations	99,376	99,376
Panel C: Up to 2015		
Post × multinational	0.00314	0.05219
	(0.00847)	(0.28923)
Effect in % change	2.55 %	0.49 %
Observations	111,798	111,798
Pre-treatment avg sales/payroll × year	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes
(Pre-treatment avg sales) squared × year	Yes	Yes
Industry × year	Yes	Yes
Firm FE	Yes	Yes
Mean outcome of multinational firms in 2009	0.123	10.585
Number of multinational firms	2,292	2,292
Number of control firms	10,130	10,130

Notes: This table examines the robustness of the results presented in Tables A.2 and A.3, by controlling for common support based on pre-treatment average assets. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure B.14.

Table B.39:
Impact of the Reform on Corporate Income Tax and Placebo Test on Domestic Sales
Robustness Check III: Scaling by Lagged Payroll

	(1) Tax paid over lagged payroll	(2) Domestic sales over lagged payroll
Panel A: Up to 2013		
Post × multinational	-0.0014	0.0552
	(0.0093)	(0.3989)
Effect in % change	-0.93 %	0.46 %
Observations	98,539	98,539
Panel B: Up to 2014		
Post × multinational	-0.0013	0.0148
	(0.0090)	(0.3772)
Effect in % change	-0.90 %	0.12 %
Observations	112,616	112,616
Panel C: Up to 2015		
Post × multinational	-0.0044	0.1034
	(0.0091)	(0.3671)
Effect in % change	-3.01 %	0.85 %
Observations	126,693	126,693
Pre-treatment avg sales/payroll × year	Yes	Yes
(Pre-treatment avg sales/payroll) squared × year	Yes	Yes
Pre-treatment avg sales/assets × year	Yes	Yes
(Pre-treatment avg sales/assets) squared × year	Yes	Yes
Pre-treatment avg sales × year	Yes	Yes
(Pre-treatment avg sales) squared × year	Yes	Yes
Industry × year	Yes	Yes
Firm FE	Yes	Yes
Mean outcome of multinational firms in 2009	0.147	12.118
Number of multinational firms	2,752	2,752
Number of control firms	11,325	11,325

Notes: This table examines the robustness of Tables A.2 and A.3, scaling by lagged payroll. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 5, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. We show multiple time windows to allow for the possibility that the semi-elasticity may vary over time. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure B.15.

C Data Appendix

This appendix further describes the data sources and the data cleaning process undertook in this study, as outlined in Section 3.1. We combine data from different sources of information: Servicio de Impuestos Internos (SII) tax return forms, Dirección Nacional de Aduanas customs registries, SII tax annexes (*declaraciones juradas*), SII firm characteristics, Dun & Bradstreet and Orbis administrative data on multinational affiliations, and data on international corporate tax rates from other external sources (Habu, 2017; OECD, 2019b; KPMG, 2019). In addition, we use employment history data including publicly available information from online worker profiles (RevelioLabs, 2025).

Note that our study presents all results in USD. We convert all amounts reported in CLP to USD using the WEO dataset (IMF, 2024) to calculate PPP exchange rates between CLP and USD. We divide GDP per capita at current prices in CLP by GDP per capita at current prices in dollars. As a result, we get annual exchange rates that allow us to convert all amounts to current dollars in their given year.

Data sources

SII Tax Forms

The tax filings data come from four different tax forms (F22, F50, and F3600). These forms cover the entire universe of internationally active firms and contain information on firms' sales, payroll, and annual corporate tax payments. Each dataset is at the firm-year level and the reported currency is Chilean Pesos (CLP).

Each dataset is processed separately and structured to produce a single firm-year level dataset, including the relevant variables for this study. Below is a brief description of the tax forms used:

- **F22: Income tax form.** It records annual corporate income tax returns. This is the main source of corporate income tax payments, sales, and costs, among others. Firms that do not have any real activity in a given year are not required to file this form.[56]
- **F50: Other special taxes form.** It includes monthly specific tax returns, such as those corresponding to tobacco, casinos, and non-residents' income, among others.[57] All firms that conduct a taxable activity have to file this form[58].

[56] http://www.sii.cl/preguntas_frecuentes/renta/001_002_2709.htm
[57] https://www.sii.cl/preguntas_frecuentes/iva/001_030_0159.htm
[58] https://www.sii.cl/preguntas_frecuentes/iva/001_030_0160.htm

- **F3600: Exporters form.** It reports exports eligible for VAT refund claiming. The main variables of this dataset are the value of the exported goods and services, transportation costs (by land, sea, or air), and the total sales expenses to be reimbursed. Firms that intend to claim VAT reimbursements from exports must file this form.[59]

Customs registries

Custom forms include data on imports and exports. While data on imports come from *Declaración Única de Ingreso* (DIN), data on exports come from *Declaración Única de Salida* (DUS). The raw data includes the total value and unit prices of exported and imported goods, the type of goods traded, the unit of measurement, and the destination or origin countries where goods are traded to and from, respectively. Amounts are reported in United States dollars (USD).

We first create a dataset at the firm-year level which identifies the number of countries each firm exports to and imports from, and distinguishes whether such a country is a tax haven and/or an OECD member. Second, we create two datasets for imports and exports at the firm-quarter-destination country level to analyze the impact of the reform on likely intra-group trade in goods (see additional details on this procedure in Appendix E).

SII Tax Annexes

The tax annexes (DJ1850, DJ1912, and DJ1907) accompany the income tax returns and contain additional information on annual transactions from firms that make payments abroad. All national firms that make transfers abroad must file one of these annexes. They include data on payments to foreign firms such as the amount of these payments, their purpose (royalties, services, interests, other), the relationship to the recipient firm (affiliate vs. non-affiliate) and in which country the recipient firm is located. We can therefore categorize international payments as being intra-group vs. not, even though the data do not have unique identifiers of foreign firms. In these annexes the reported currency is Chilean Pesos (CLP).

- **DJ1850:** It registers transaction-level data on transactions with third parties located abroad, and additional taxes withheld from national firms that incur in such kind of international payments. In particular, it contains the type of relationship between the firm and the foreign recipient (unaffiliated, subsidiary, owner of the Chilean firm, or jointly owned by a third party), and the purpose of the payment (royalties, services, interests, financial, dividends, and others). The form must be filed annually by firms

[59] Additional information on this form can be found at the SII official website

making payments to foreign locations that are subject to (i) additional tax retention, or (ii) double-taxation agreements.[60]. Since 2014 this form has been replaced by DJ1912.

- **DJ1912:** From 2014 onwards this forms replaces DJ1850 and thus contains the same information as its predecessor.

- **DJ1907: Transfer Pricing form.** It was introduced by the reform and records transaction-level data on payments to foreign locations such as the payment amount, the type of affiliation and location of the foreign recipients, the type of transaction, among others. It must be filed annually by either (i) medium and large firms that make any intra-group transaction with foreign affiliates, (ii) firms that make any transaction with third parties located in tax heavens identified by the SII, and (iii) firms that make any transaction exceeding 500 million CLP with recipients located abroad.[61]

SII firm characteristics

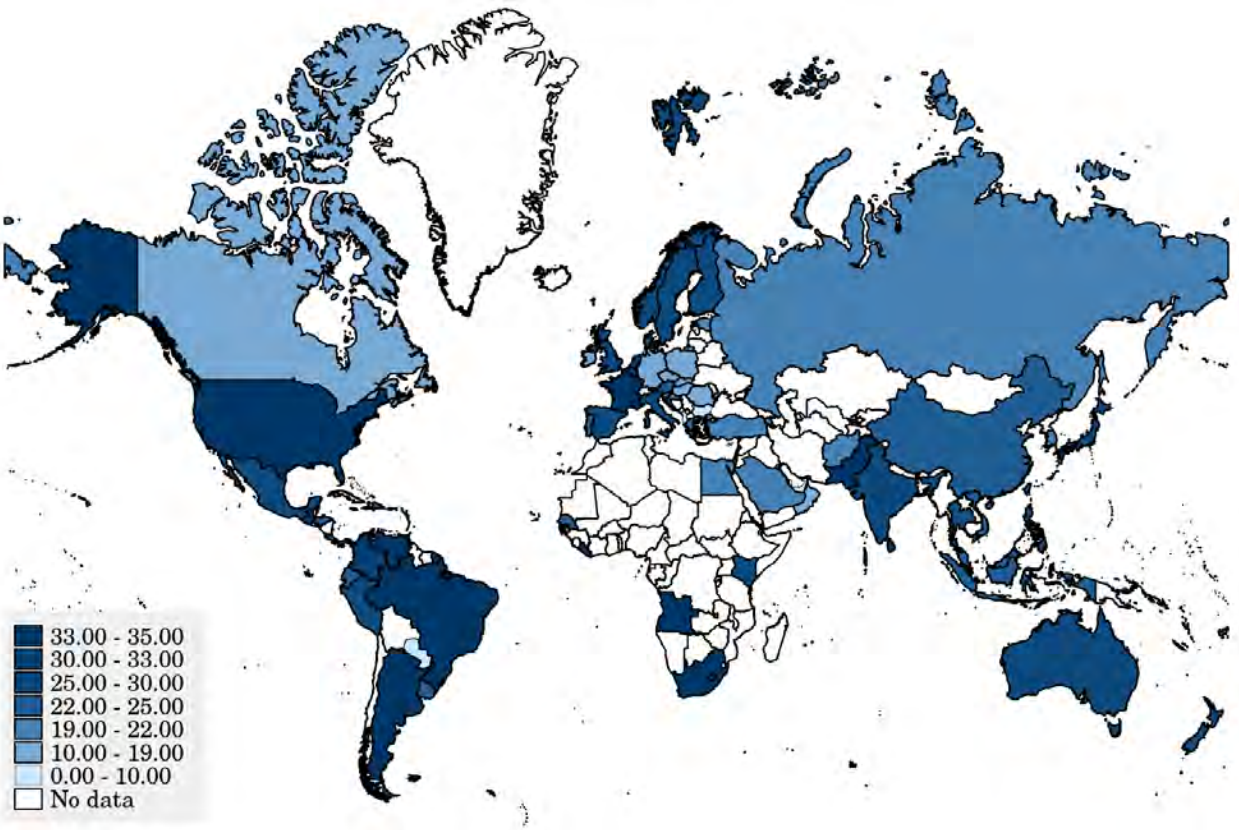
In addition to the tax forms, for the purpose of this project the SII prepared an additional dataset containing different firm characteristics coming from administrative records. These characteristics include size segment (e.g., medium or large firms), sector (e.g., mining or forestry), and administrative region (e.g., Valparaíso), tax regime code (e.g., complete accounting), annual number of employees, and total payroll.

Countries' statutory corporate tax rates

We complement the administrative datasets with data on international statutory corporate tax rates for countries where foreign firms that make transactions with Chilean firms are located. These corporate tax rate data primarily come from the Centre for Business Taxation Tax Database (Habu, 2017) which, at the time of the original analysis, represented the most comprehensive collection of standardize tax rates at the time of the original analysis. Habu (2017) includes data for 43 of the 91 countries to which Chilean firms made payments throughout the study period. For countries that do not appear in Habu (2017), we use OECD (2019b) data (30 countries), and for the 18 countries that appear in neither of these two data sources, we use KPMG (2019). For robustness, we additionally draw on tax rate data from an alternative, more recent data source from the Tax Foundation (TaxFoundation, 2024).

[60] https://www.sii.cl/declaraciones_juradas/suplemento/2013/form1850.htm
[61] https://www.sii.cl/declaraciones _juradas/suplemento/2013/form1907.htm

Figure C.1:
Countries' statutory corporate tax rates (2010)



Notes: This map illustrates the 2010 statutory corporate tax rates for countries to which Chilean multinationals make international payments to. The tax rate distribution is divided into seven categories, with darker shades of blue representing higher tax rates and lighter shades indicating lower tax rates. White areas correspond to countries for which no data (on international payments or tax rates) is available. The tax rate data come from the Centre for Business Taxation Tax Database (Habu, 2017), OECD (2019b) and KPMG (2019).

Dun & Bradstreet and Orbis registries

Dun & Bradstreet and Orbis data contain information on firms classified as multinational companies in Chile and their foreign affiliates. We use these directories to identify additional multinationals that had originally not revealed their multinational status to the Chilean tax authority. This information complements the tax data and is used to determine the treatment status of firms that are listed as multinationals.

Revelio Labs

Revelio Labs provides a global dataset that aggregates and standardizes publicly available employment information from online worker profiles, including platforms such as LinkedIn

(RevelioLabs, 2025).[62] It collects employment history information, compiling data from public profiles, resumes, and job postings, offering a detailed record of individual employment histories. The dataset includes information on employers, job titles, start and end dates, job descriptions, and geographic locations, among other variables.

We downloaded the data by implementing a SQL query that identifies transfer pricing and other related professionals in Chile. This download and the data cleaning process outlined below are the same as in Pomeranz and Suárez Serrato (forthcoming) (which includes data not only for Chile, but also for Colombia, Spain, and Uruguay).

The query consisted of three steps:

1. We identify individuals who ever held a transfer pricing position in Chile. We did so by identifying key job titles in both Spanish and English (e.g., *transfer pricing, precios de transferencia*).

2. We extract the full employment history for these employees that worked at least once in transfer pricing. This is how we construct the employment history for the "treated" group (transfer pricing consultants).

3. We construct a group of "control" professionals by selecting workers who never held a transfer pricing position. We use standardized occupational codes and job titles related to finance, accounting, auditing, and financial analysis, as ell as major consultancies and firms employing tax consultants (e.g., major accounting firms, tax authority).

Data creation

Firm Universe and Sample Selection

The administrate data contains all formal firms in Chile registered in the tax authority (i.e., the "firm universe"). The sample for this study is delimited through the following rules. A firm is included if any of the following conditions are met:

- A firm engaged in international trade in goods (either exporting or importing), as reported in the F29, DUS or DIN forms, at any point throughout 2007-2015 (calendar years).

- A firm filed any of the main DJ forms (DJ1850, DJ1907, DJ1912) that are used to identify treated firms at any point throughout 2007-2015.

[62] This data was accessed through the Redivis platform, a data hub affiliated with Stanford University, in February 2025.

- A firm declares having made payments of "additional taxes" (tax on certain payments abroad) on the F50 form, filed at any point throughout 2007-2015.
- A firm appears in the Dun & Bradstreet and Orbis lists of multinational firms with affiliates in Chile.

We first identify a total of 401,335 unique different firms through the different data sources provided by the SII (tax forms, custom forms, and tax annexes). These are firms that comply with at least one of the conditions listed above.

Second, we apply further restrictions to select the main sample of analysis. We only keep firms that filed the F22 form at least once during the pre-reform period (before 2011) and at least once in the post-reform period (after 2011).

Third, we exclude all firms that are *personas naturales* from the sample, and clean the data to exclude outliers and data entry errors. After this process, we are left with a sample of 99,059 unique firms which meet the outlined conditions.

Finally, as explained in Section, 3.2, we restrict the final sample to all medium and large internationally active firms that are economically active with positive wage and input costs throughout the study period, which leaves us with $11,333$ domestic and $2,755$ multinational firms (14,088 firms in total).

Multinational Status (Treatment Group)

We define multinational companies, which are "treated" firms by the transfer pricing reform, if they meet any of the following conditions:

- A firm files a DJ1907 throughout 2007-2015. By definition, these are all multinationals, since these firms report intra-group payments in the transfer pricing form introduced as part of the reform.
- A firm files a DJ1850 or DJ1912 throughout 2007-2015, and declares an intra-group transaction with any foreign affiliates. These firms are multinationals because they self-declare having foreign affiliates, making them subject to the reform.
- A firm files a DJ1850 or DJ1912 throughout 2007-2015, and declares a transaction with any foreign entities (affiliates or not) located in tax haven countries identified by the SII.
- A firm appears in the Dunn & Bradstreet or Orbis registries, which list firms classified as multinationals with activities in Chile and are thus subject to the reform.

Internationally Active Domestic Firms (Control Group)

We consider firms to be internationally active domestic firms if they report similar international transactions as multinational companies, but not to any affiliated foreign firm. We identify such firms with the F29 form and the customs forms (exports and imports), and other financial transactions with foreign firms registered on the DJ1857 form (international payments for royalties, services, and interests). These firms comprise the "control group."

Specific Sample Constructions

Analysis of the Impact on International Payments

We restrict the sample to multinational firms that make at least one intra-group payment to an affiliate during our period of analysis (2007-2015). Firms with missing data on destination country statutory tax rates in Habu (2017), OECD (2019b), and KPMG (2019) are also excluded from the sample. The final sample results in 1,206 multinational firms.

This analysis is based on a balanced panel at the multinational-year-destination country-type of payment level, which includes observations with null payments (i.e., we fill the panel with zeroes). We transform the outcome variable (amounts of payments) in levels to the logarithm of payments (e.g., $\ln(Y_{ijat} + 1)$) to avoid discarding observations with null payments and accurately capture the extensive margin of payment behavior.

Analysis of the Impact on Trade in Goods

We restrict the sample based on the three different bandwidths of the shares of intra-group trade relative to total trade—80% to 120%, 90% to 110%, and 95% to 105%—that are further explained in Section 5.2 and Appendix E. Firms with missing data on destination country statutory tax rates in Habu (2017), OECD (2019b), and KPMG (2019) are also excluded from the sample.

This analysis is based on an unbalanced panel, which excludes observations with null payments (i.e., null quantities and thus missing prices) because we compare total payments, quantities and unit prices over the same set of observations. We cannot impute zeroes to unit prices in observations with missing transactions. We thus use a $\ln(Y_{ijat})$ function—without adding one—to transform the outcome variables (amounts, quantities, and unit prices).

Analysis of the Impact on Corporate Income Tax Payments

We exclude 11 of the total 14,088 firms because of missing values in one of the controls used in this analysis (pre-treatment average sales over assets). As a result, the analysis sample for this exercise consists of $2,752$ multinational firms and $11,325$ domestic firms. This analysis is based on a balanced panel of these $14,077$ firms starting from 2007 and up

to the different time length windows (2013, 2014, and 2015).

In the analysis of the impact on corporate income tax payments including additional taxes collected from transfer pricing audits by the tax authority, we include the following. Transfer pricing audits of firms in our sample led to 17.2 million USD in payments in 2010 and 68.1 million USD in 2011-2015. These payments stem from 224 audits of 211 unique firms, representing 7.66% of all multinationals in our sample. 33 of these firms paid additional taxes as a result of these audits.

Analysis of the Impact on Cost Center Centralization

This sample consists of multinational firms that make a least one positive international payment of any type to both affiliates and non-affiliates throughout the study period (2007–2015). International payments include payments for royalties, services, and interests, as well financial and dividends payments. As a result, 856 multinationals are included in this analysis.[63]

Analysis of the Impact on Transfer Pricing Industry

We study the transfer pricing advisory industry, focusing on consultants employed by Big Four firms, other consulting firms, and other multinational corporations (in-house). To identify professionals working in transfer pricing roles ("treated" group), we analyze self-reported job titles and descriptions from online professional profiles, using keyword searches for relevant terms and their variations.[64]

To construct a "control group" for the transfer pricing consulting professionals, we identify professionals in adjacent roles that require similar skill sets but are not directly involved in transfer pricing. Our approach consists of three steps:

1. **Identifying relevant professionals:** we begin by selecting workers employed by the Big Four (but not in transfer pricing) and other Chilean consulting firms. We also select the following related occupations using the Standard Occupational Classification (SOC) System:

    - Accountants and Auditors (13-2011)
    - Compliance Managers (11-9199.02)
    - Financial Managers (11-3031)
    - Financial and Investment Analysts (13-2051)

[63] As discussed above, firms with missing data on destination country tax rates are also excluded from the sample and this analysis is based on a balanced panel of multinational firms.

[64] These variations include terms in both Spanish and English, different job titles such as consultant, advisor, specialist, or analyst, and related concepts such as transfer pricing and profit shifting.

- Investment Fund Managers (11-9199.03)
- Treasurers and Controllers (11-3031.01)

2. **Excluding non-private and tax professionals:** we exclude individuals working in academic and public institutions to ensure that the control group consists solely of private-sector professionals in comparable working environments. We also exclude professionals in tax- and audit-related roles to prevent potential confounding effects coming from other simultaneous tax regulation changes that could impact other tax consulting roles.

3. **Refining the control group using text analysis:** we further investigate job titles and descriptions to identify the most common terms associated with consultancy and similar roles. We retain professionals whose job titles include terms such as accountant, advisor, consultant, analyst, assistant, associate, economist, and specialist.

As a result of this process, we distinguish three groups of professionals in Chile: transfer pricing consultants (who can work in Big Four consulting firms, other consulting firms, or in-house), tax consultants (who can work in Big Four and other consulting firms), and related other professionals (which include accountants, financial managers and analysts, investment specialists, controllers, and similar professionals working in areas outside of taxation). Table C.1 shows the number of professionals in these groups in Chile per year throughout 2008–2015 (the data from Revelio Labs starts in 2008). There are only 5 in-house transfer pricing active positions in Chile from 2008-2015. We however think this is likely a lower bound given that in-house workers may not specifically clarify they work in transfer pricing within their multinational.

Table C.1:
Number of Transfer Pricing Consultants
and Professionals in Adjacent Roles

	Transfer Pricing Consultants			Tax Consultants		
	(1) Big Four	(2) Other Consultants	(3) In-House	(4) Big Four	(5) Other Consultants	(6) Other Professionals
2008	10	2	0	344	831	12,501
2009	8	3	0	359	908	13,615
2010	10	2	0	361	1,008	15,049
2011	11	4	1	398	1,128	16,407
2012	26	4	0	433	1,248	17,794
2013	44	9	1	434	1,287	18,751
2014	53	11	1	489	1,329	19,142
2015	67	13	2	529	1,351	19,602

Notes: This table shows the number of transfer pricing consultants, tax consultants, and other professionals in roles not directly related to transfer pricing or tax per year throughout the study period 2008–2015.

D Qualitative Interviews

This appendix contains further information on the qualitative interviews discussed in Sections 3.3 and 6. We conducted in-person interviews in November 2014 with senior transfer pricing consultants in three of the Big Four consulting firms in Chile and a larger number of interviews over video calls between May 2021 and May 2022. This second round was much more exhaustive and included consultants both from all Big Four firms and smaller consulting firms, as well as senior in-house tax experts at multinational corporations and transfer pricing auditors from the tax authority.

Method

In line with common sample selection criteria for qualitative research, we aimed to reach interviewees who span the range of key stakeholders related to the transfer pricing industry. We converged on this sample of interviewees following standard qualitative research practices. We selected interviewees that captured a diverse range of key stakeholders in the transfer pricing industry. We first identified key respondents such as heads of transfer pricing units and transfer pricing tax experts through publicly available information on firms' websites and on LinkedIn. We then complemented this sample through snowball sampling of referrals from previous respondents. While the goal in quantitative empirical analysis is

generally to get a large enough sample size to have the power to detect statistically significant effects, qualitative interview approaches usually determine adequate sample size by considering "saturation." After interviewing enough participants (each for a long enough duration), answers tend to converge, and adding new participants no longer provides additional insights. This is when the process is said to "have reached saturation". Therefore, sample sizes are usually considerably smaller than those in quantitative analyses (see, e.g., Beitin, 2012).

In our analysis, saturation is applied to a purposive (also called purposeful or non-probability) sample, which is commonly used in qualitative research. Purposive sampling selects respondents based on their individual characteristics to identify themes common to a heterogeneous group of respondents (Shaheen et al., 2019). Overall, we conducted 20 interviews (3 in 2014 and 17 in 2021-2022) with an average duration of about an hour. At the time of the interviews in 2021, 31% of our respondents worked at one of the Big Four, another 31% were in-house consultants, 13% worked at smaller boutique consulting firms, and 25% were tax authority officials. The gender distribution was 25% women and 75% men. 38% had worked for the tax authority at some point in their career. The experts had a combined 252 years of professional experience in transfer pricing.

The process followed a flexible roadmap of open-ended questions, allowing for organic conversation development and discovery of unexpected insights through semi-structured interviews. In contrast to fixed scripts, an interview roadmap leaves the flexibility for the conversation to evolve with the goal of potentially discovering unexpected findings. Moreover, it can be adapted to incorporate new topics that emerge during the interviews with future interviewees. After identifying such new themes and topics in early interviews, we adapted the roadmap to incorporate these new themes explicitly and to learn whether other respondents had similar or different experiences on these issues. This was one way in which conducting multiple interviews with the same respondents was helpful, as it allowed us to follow up and corroborate points raised by other interviewees.

The roadmap was similar for all respondents but differed in some parts based on their role (e.g., consultants vs. in-house tax experts). The questions in the roadmap were kept quite broad and open, designed to allow the flow of the conversation to follow inputs brought up by respondents themselves (following the method described, for example, in Krueger and Casey, 2014). Accordingly, we used an approach of curious engagements, using open-ended follow-up questions such as: *"How come?"*, *"Can you tell me more about this?"*, *"How did this work?"*, *"How did others respond?"*, *"Could you explain further"*, *"Could you give me an example?"*, *"And then, what happened?"*, *"Is there anything else we did not touch on yet in our conversation?"*, etc.

Roadmap of the interviews

We started all interviews by introducing ourselves, describing the scope of the study, explaining that all answers would be subject to confidentiality, and confirming participants' consent. We then continued by asking respondents broad background questions, both as a warm-up and in order to get to know them better: *"How long have you been working in transfer pricing/international taxation?"* In response, participants usually told us a summary of their professional history in the industry.

Next, we asked open-ended questions about the general perception of the impact of the reform: *"What is your general perception of the impact of the transfer pricing legislation change, both from a government and business perspective?"* Thereafter, the roadmap differed slightly depending on whether the respondent was an external consultant or an in-house expert. To better understand the main mechanisms underlying the changes in response to the reform and to explore whether we could identify any testable hypotheses emerging during the interviews, we asked consultants: *"What were the main changes companies undertook in response to this reform?"*, followed by a number of follow-up questions to ask about changes in specific areas, such as the location of activities, intra-company trade prices, as well as any changes in their debt, interest, royalties, or service payments. For example, a testable hypothesis that emerged from these conversations was the centralization of cost centers described in Section 6.

Respondents from multinational companies were asked: *"Could you describe a little bit how transfer pricing decision-making works in your company? Has this changed with the transfer pricing reform?"* and *"We would like to understand how companies reacted to the new transfer pricing legislation. What were the main changes observed in the companies you know?"*. In response, participants usually described at length the different types of internal changes that occurred in their company following the reform, and sometimes additional things they had heard from other companies or experienced in other firms they worked in previously.

During conversations with both in-house experts and external consultants, we aimed to gain a better understanding of how demand for tax advisory services changed after the reform. We asked respondents from multinational companies: *"Did the transfer pricing reform cause the companies you know to increase their transfer pricing-related tax management expense (internal/external/both)?"*. If the answer to this question was *yes*, we followed up with a series of questions asking what changes were made regarding in-house or external tax expertise, what motivated these changes, what additional work was undertaken, etc.

In conversations with representatives from consulting companies, we explained that *"We are interested in better understanding the evolution of the transfer pricing advisory industry*

following the reform. We heard that there was a lot of growth in this industry after the reform." and then asked: *"What do you think was the impact of the reform on this industry?"*. This was followed by a number of more specific questions about where the additional transfer pricing experts came from, what type of work they undertook in terms of compliance support and tax planning, as well as the dynamics in client relations.

Finally, we ended the conversation by asking for any additional perspectives we might have missed: *"Are there any other aspects of the transfer pricing taxation situation or legislative change that we should be aware of?"*.

Additional Quotes

In the following, we complement the insights from Section 6 by describing additional quotes from the interviews by each topic.

Growth in the Tax Advisory Industry

The reform provided a large boost to the tax advisory industry. All interviewed consultants highlighted that the reform created a significant growth opportunity for tax consultants. Each of the interviewees in the 2014 round of interviews had personally experienced a promotion, going from working with one colleague in a small unit to being the head of an important department within the company. One consultant described this process as *"a radical change,"* elaborating that *"the Big Four each had only one person who could make the link with other countries before the reform. But with the reform, this service exploded."* This explosion was reflected on the size of the teams working on transfer pricing consulting in Big Four firms. For instance, one interviewee described that, *"For the tax advisors, this whole thing is great. In 2011, we were a team of two. Now, we are 26."*[65]

The reform had a such a large effect by substantially increasing the amount and scope of work for consultants specialized in transfer pricing. As explained by one of the interviewees, *"Before the reform, the tax authority had no tools to implement the arm's-length principle in practice. For example, it had neither references nor documentation requirements. I worked in the department that negotiated this in 2009, after which the tax authority created a specialized department, which I joined. There we realized that the perception of risk did not exist. Many corporate taxpayers had recurring losses from related party transactions. They thought they could do whatever they wanted. The information that we asked for as a result of the reform was a revolution in the country."*

The greater efforts by the tax authority to monitor and enforce transfer pricing rules

[65] Another expert added, *"Even before the change, there was work on this topic in Chile. This was often pushed from the headquarters of the firm, but it was much less than now. For a long time, they had only 1-2 people at big consulting firms working on transfer pricing advisory."*

raised firms' risk of violating the arm's length principle, increasing the work for consulting firms. As one expert consultant put it: *"With the new system, there is much more work for consulting firms, while before the reform, the Big Four did not have a substantial team specialized in transfer pricing."*[66] Another consultant stated, *"Before the reform, some companies did not do price studies. They only used the accountant's information, and the accountants had no idea of the transfer pricing rules. Consequently, there was a significant risk of violating the arm's length principle, because pricing was totally out of place. Nowadays, companies that do not carry out price studies are rare."*[67]

Demand for Compliance Support

The strong surge in demand was led by the complexity of the new reporting requirements introduced by the reform. Many interviewees pointed out that, first and foremost, compliance with the new norms required most firms to reorganize their internal bookkeeping and recording of intra-group transactions. As one expert stated: *"The main change companies undertook following the reform was to formalize and systematically document the intra-group transactions, in order to be able to fill out the form correctly. They look for consultants to know how to price these transactions."* Complying with these new regulations required thus hiring more consultants. As one consultant emphasized, *"The main change of the reform was that we formalized many of the transactions within the international group that we usually did not explicitly charge before the reform. We now need more for consultants to learn how to set prices."* Another expert reaffirmed that, after the reform, companies formalized their transactions with foreign affiliates much more rigorously : *"Overall, there was a gigantic change in taxation. Now firms are much more orderly and organized."*

Multinationals favored external advisors from top consulting firms over in-house expertise. As one interviewed consultant described, *"Companies usually contract one of the Big Four to do the price study for them."* This was due to two main reasons. First, Big Four consultants were able to offer specialized assistance with the most up-to-date insights and proprietary data. They had a comparative advantage based on prior experience in jurisprudence and best practices from other countries and other firms.[68] Second, employing senior

[66]The reform increased the difficulty of the work as well. As an in-house tax expert explained, *"In the past, prices were set without much research behind it. While some things can be done well with market comparisons (e.g., interest), pricing services that are shared across multiple locations, such as human resources, is more difficult."*

[67]Another consultant backs up such a statement: *"Pricing studies are not mandatory to prepare, but absolutely recommended. In my opinion, filling out the new tax forms well without doing a pricing study as technical support is impossible."*

[68]This advantage is revealed by the following quotes: *"People need experts to have comparable benchmark databases that only the Big Four have. They also know how to classify transactions, etc." "Firms need support for the new declaration because it is very specific. The declaration asks for so many things, so that they need help, for example, for comparables, etc." "A consulting firm helps us with the comparables. They*

experts on a full-time basis was prohibitively expensive for most firms due to their limited availability and high hiring cost.

The greater demand for compliance support is likely to have benefited the tax planning industry at the expense of multinationals, which pay higher costs for tax-related services. A consultant from a small firm explained that *"The introduction of the transfer pricing reform was a surprise and extremely expensive for companies. The risk of making a mistake was considerable, and the fines were costly. Now a company can either pay 5k to a Big Four for compliance services or 10k and more to the SII in penalties."* As a consequence of the reform, compliance costs drastically increased: *"The cost of compliance has increased dramatically. Now you need a specialist for everything, and then the firms start to see the risks. Subsequently, they need more consulting, and costs increase."*

Complementarity of Compliance Support and Tax Planning Services

The qualitative interviews highlighted that multinationals' engagement with tax consultants often began with compliance-related concerns but later evolved into broader tax planning strategies. Tax consultants reported that a significant proportion of their clients transitioned from compliance to tax planning over time. As one consultant explained, *"Approximately 15% of our clients do not want planning. Around 25% come directly to us for planning, while the remaining 60% 'graduate' to planning."* This shift was driven by both the supply side (consulting firms up-selling firms on tax planning) and the demand side (firms realizing that compliance requirements could reveal opportunities for strategic tax planning).

On the supply side, some consultants actively promoted tax planning services to firms that initially sought only compliance support. One consultant described their approach: *"In 2012, I came as an evangelizer, knocking on doors."* Some consultants also expressed a clear preference for tax planning over compliance: *"I really like providing transfer pricing services when it relates to planning. Compliance is a little less interesting."* This preference for tax planning was reinforced by the fact that it was often more lucrative for consulting firms. Over time, this push from consultants helped normalize tax optimization discussions within multinational companies. As one consultant observed, *"Often, a firm is newly a client of the consulting firm with the goal of compliance, and then they start learning about strategies."*

On the demand side, the reform initiated a transformation in how multinational firms ap-

have to find the best form in which we need to report to the tax authority, as it keeps changing." "The internal person in our company collects all the internal information, while the consultancy assures that the transactions are compliant." "The external support helps a lot with the new requirements." "We as a company have over 30 inter-company services. We work with the consulting firm to define the policy, and they make suggestions. The external team prepares master files for us, and we review them and disseminate them internally. We have meetings with the consultancy every week. The cost is lower externally, and in general, we try to externalize everything that is not the core of the business. In the first moment, it is not cheaper, but in complex situations, they can share best practices they see elsewhere."

proached transfer pricing, moving from a narrow focus on compliance to recognizing broader tax optimization opportunities. For some firms, this was clearly driven by the influence of external tax advisors: *"What accelerated the process was the arrival of these people with a vision that was much more aligned with the OECD. They showed us how it's done, for example, in Spain, and helped us reach the same level. They helped us to get a more global view, not only considering local compliance. The reform produced this, but I am not sure this was the intention."* For other firms, tax planning became a natural next step after compliance was established: *"First, we start with compliance, and our firm sends the information in the format and time required. Then comes a second phase where we say, let's do the compliance, but at the same time correct things that are inefficient."*

Ultimately, companies found that reviewing their compliance data often revealed tax optimization opportunities they had not previously considered. One firm noted, *"Companies are more organized now, so there has been some impact. Some may have adjusted their taxes downward, seeing the reform as an opportunity rather than a problem. As comparables, the firms used before were not perfect from a tax optimization standpoint. When they went through their books, they realized: 'Ah, look, here's an opportunity to use more beneficial comparables.'"*

The reform also shifted the attention to taxation to higher levels in the firm. As one senior in-house tax expert of a multinational described, *"In principle, the optimization could have happened before the reform. But management often does not want to think about taxes. They are busy with other things. Due to the reform, management developed a more global vision of the company."* Tax experts leveraged this increased attention to highlight opportunities for tax planning: *"Our area was able to show them that we do more than just comply. That the value of the area of taxation is not in filing the taxes, it is in how we can contribute to the sustainability of the firm."* Another in-house expert explained: *"Our company now sees that there is a strategic opportunity here. Previously, management thought, 'Why should I get involved in tax problems?' As they only focus on complying, they only see the risk, not the opportunity. Hence, the internal management needs first to understand that there is an opportunity here, then they pay more attention."*

Finally, several experts highlighted the role of these complementarities in undermining the effectiveness of the reform, as it simultaneously enhanced firms' ability to plan their taxes more efficiently. One expert summarized this contradiction: *"The reform is the worst of both worlds. The mandatory reporting pushed firms to the consultants, who in turn taught them how to be more tax efficient. At the same time, the monitoring capacity is limited."*[69]

[69]Two other interviewees expressed similar sentiments: One consultant from a small consultancy said: *"I totally agree with the hypothesis that the increased availability of expert consultants in Chile helped firms*

Supply Response of Consulting Services

The rapid expansion of the transfer pricing advisory industry in Chile was facilitated by the international mobility of tax specialists. A key factor enabling this mobility was the standardized nature of OECD transfer pricing principles. As one expert noted, *"Given that the OECD standards are general, there is a lot of mobility."* This allowed tax professionals to transition seamlessly between different national regulatory environments, strengthening the consulting industry's ability to respond to demand shocks: *"The transfer pricing rules are international so that people can move. The Chilean tax authority brought in a Chilean and a Colombian specialist, both from the Big Four. Later they returned to the Big Four after 4-5 years."* One consultant who relocated to Chile due to the reform described this career trajectory: *"I arrived in Chile in 2012 from Argentina because of the transfer pricing reform. In Argentina, I worked at a Big Four firm. Before that, I spent a year in Spain, working at a Big Four firm."*

As a result, consultancies brought in international expertise to quickly meet rising demand: *"Advisors came from abroad from countries that knew about transfer pricing. New bosses in the companies understood this, and they changed the incentives."*. As a result, most of the transfer pricing partners in Chilean Big Four firms were foreign. One consultant explained, *"The transfer pricing partners (of the Big Four) were all foreigners. Still, many of the partners are today. The advantage for transfer pricing specialists is that the rules are international, so people can move around."* Another expert estimated that *"The expertise was very rare, with 90% of it coming from abroad. We started to train local people. Three to four years ago, some boutique consulting firms started up that are a bit less expensive. Before that, it was almost exclusively the Big Four."*

The influx of international specialists was not limited to consulting firms. Foreign experts were also hired directly by the Chilean tax authority to help implement and enforce the new regulations. One interviewee detailed, *"Experts came from Argentina, Venezuela, Spain, and Colombia. Both to the Big Four and to the tax authority. They tended to come from Big Four affiliates in these other countries. By now, there are a few Chilean experts as well."*

Over time, some of these foreign experts transitioned from consulting roles to in-house tax positions at multinational corporations. As one consultant recounted, *"I'm originally from Argentina and came to a Big Four in Chile from a Big Four in Argentina. Then, I moved to be an in-house expert at an MNC in international taxation."*

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optimize their tax strategies such that even though there is more monitoring, they don't end up paying more taxes." Another in-house expert said: *"You can plan. It is so easy to plan that arm's-length does not work. It is very easy to circumvent it. There is no higher tax collection because now the firms comply, but at the same time, the consultants offer you the product that helps you to plan."*

Centralization of Cost Centers

We asked senior consultants what strategies they advised their clients to use in their tax planning. A common recommendation that emerged from the interviews was the consolidation of cost centers, especially for services such as human resources or marketing, in fewer—optimally chosen—countries. For instance, one of the interviewees stated: *"Many times, we advise companies to determine a country where all payments are concentrated, such as the United States, Mexico, or the Netherlands."*

Cost center consolidation can reduce tax liabilities by concentrating costs in lower-tax locations. One consultant described that *"many companies started to centralize several activities, for example, instead of having a distributor present in all the countries, they order from one optimally-chosen location."* In-house tax specialists confirmed this phenomenon. One said: *"Centralizing cost centers is very common, not only from the point of view of taxes but efficiency in general."* Another one explained: *"We calculate taxes and also labor costs for the different possibilities to evaluate where it is preferable to put the cost center and concentrate everything there instead of having three countries."*[70]

Fighting a Losing Battle

While the Chilean tax authority made significant strides in strengthening its transfer pricing team, the private sector's ability to offer higher salaries and more attractive career prospects created a persistent challenge for the public sector: retaining top talent. Many experts trained within the tax authority ultimately leave for lucrative roles in consulting firms and multinational corporations, undermining the agency's capacity to enforce compliance effectively.

Initially, the tax authority responded to the reform by recruiting experienced professionals from the private sector. One expert recalled, *"The tax authority strengthened its transfer pricing team. They brought in experts from consulting from the market. Now they have a very powerful team at the tax authority."* The rapid improvement in the tax authority's capabilities was widely acknowledged: *"In a couple of years, the Chilean tax authority got to a level of implementation that is better than other countries that have had the OECD norms for many more years."*

However, despite these gains, the tax authority struggled to retain its most skilled professionals. Many experts who had joined from consulting firms eventually returned to the private sector, lured by significantly higher salaries and less bureaucratic constraints. One

[70] Another senior consultant summarized this strategy as follows: *"Usually, concentrating the cost centers does not involve a change in the location of subsidiaries, just a change in some activities, such as centralizing procurement and supplies. Companies then use a commission-based model for centralizing things. On the one hand, this leads to business advantages, economies of scale of having a single team. But, in addition, having a unified location in a single country is also beneficial for transfer pricing purposes."*

interviewee pointed out, *"Many of the experts that were at the Chilean tax authority were subsequently contracted by the private sector and have left again. Only one person is still there."* This revolving door phenomenon between the public and private sectors was a recurring theme in the interviews. One consultant detailed a common career trajectory: *"Moving from consulting to the tax authority and vice versa happens a lot. For example, one consultant from a Big Four company in Colombia came to the Chilean tax authority and then left for a Big Four company in Chile before going back to a Big Four company in Colombia. Another one went from the Chilean tax authority to a Big Four company and then to a multinational."*

The private sector actively sought out individuals with government experience, recognizing the value of their insider knowledge. As one consultant admitted, *"Often when there is a very good person [in the SII], the private sector snatches that person away."* This constant poaching created significant retention problems for the tax authority, as highlighted by another interviewee: *"Being in the tax authority helps for the career. So people go to the tax authority and then leave to the Big Four. This creates a big retention problem for the tax authority."* At the same time, these professionals often only stayed at the Big Four for a short period: *"In our company, we had one person from the tax authority, one ex-judge from customs, and also someone from the international tax division. They come to the Big Four, and you take advantage of their know-how. But then they don't stay because the demanded output is too high. They come, share their knowledge, then fail to achieve the targets, and leave."*

E Methodological Details and Additional Analyses

Do Multinationals Make Tax-Motivated Payments out of Chile?

This subsection provides a more in-depth discussion of Section 4, where we document that multinationals engage in tax-motivated payments out of Chile. Here, we elaborate on additional details about the econometric specification and discuss the robustness checks conducted for this analysis.

Additional econometric details

The difference-in-differences specification in Equation 2 is based on a balanced panel at the multinational-year-destination country-intra-group status level, which includes observations with null payments. We transform the outcome variable (amount of payments) in levels to the logarithm of payments (e.g., $\ln(Y + 1)$) to avoid discarding observations with null payments and accurately capture the extensive margin of payment behavior.

Table 2 shows that the semi-elasticity of payments to non-affiliates, β_1, is close to zero

and statistically insignificant. This supports the hypothesis that non-affiliate total payments are not influenced by tax rate changes. The difference in the semi-elasticity of payments to affiliates compared to non-affiliates, β_2, is negative and statistically significant. This indicates that intra-group payments decrease as destination country tax rates increase, which is consistent with tax-motivated profit shifting.

Robustness checks

We conduct a series of robustness checks to validate the main findings of this analysis, which we explain below.

First, we investigate whether this analysis is sensitive to changes in Chile's tax rate instead of destination countries' tax rates (the Chilean statutory corporate income tax rate was 17% (2007-2010), 20% (2011-2013), 21% (2014), and 22.5% (2015), as explained in Section 1.2). To check this, we substitute the destination country tax rates with the difference between each destination country tax rate and Chile's tax rate, as shown in Table B.1. These results are consistent with the baseline specification, showing the analysis is robust to taking the differences between Chile's and destination countries' tax rates into account.

Second, as described in Section 3.1, we use different data sources to construct the tax rate variable used in the semi-elasticity analyses. The data on tax rates primarily come from the Centre for Business Taxation Tax Database (Habu, 2017). For countries that do not appear in Habu (2017), we use OECD (2019b), and for countries that appear in neither of these two sources, we use KPMG (2019). For 26% of the observations that appear in multiple data sources, the tax rates differ across sources.

To address this issue, we conduct two exercises. On one hand, we reverse the order in which we combine the tax rate data sources, and first use KPMG (2019) where available, then OECD (2019b), and if the country does not appear in either, (Habu, 2017) (Table B.2). On the other hand, we use an alternative, more recent tax rate data source from the Tax Foundation (TaxFoundation, 2024), which includes all countries in our sample (Table B.3). The estimates are robust to both of these alternative specifications with different tax rate data sources.

Third, we also report specifications varying the inclusion of different fixed effects, including: firm $\times$ intra-group status $\times$ year fixed effects (Table B.4), destination country $\times$ year fixed effects (Table B.5), firm $\times$ destination country fixed effects (Table B.6), and firm $\times$ destination country $\times$ intra-group status fixed effects (Table B.7). Results are robust to these variations.

Fourth, we follow recommendation from Chen and Roth (2023) and show additional checks in Tables B.8,B.9, B.10, B.11, B.12, B.13, B.14, and B.15 to test whether these semi-

elasticy estimates are sensitive to scale dependency issues related to the $\ln(Y+1)$ outcome transformation. We find a systematic negative semi-elasticity of intra-group international payments for royalties, services, and interests with respect to destination country tax rates. We discuss these tests further in the analysis of the impact of the reform on such elasticities.

Finally, we analyze whether multinationals engaging in international trade in goods have a similar intra-group payment behavior. Table B.16 shows robustness by analyzing a subsample of firms that trade in goods (either imports or exports).

The robustness of these findings across multiple specifications provides strong evidence that Chilean multinationals engage in tax-motivated payments to their foreign affiliates. Specifically, the significant negative semi-elasticity of intra-group payments with respect to destination country tax rates suggests that firms strategically adjust their intra-group transactions to optimize tax liabilities.

Impact of the Reform on Intra-Group Payments

This subsection describes the robustness checks conducted for the analysis of the impact of the reform on intra-group payments for royalties, services, and interests.

Tables B.17– B.32 show that the estimated impact of the reform on this semi-elasticity is not sensitive to the same robustness checks described above: using tax rate differences between Chile and a given destination country, using alternative tax rate data sources, the inclusion of firm $\times$ year $\times$ intra-group status fixed effects, destination country $\times$ year fixed effects, firm $\times$ destination country fixed effects, and firm $\times$ destination country $\times$ intra-group status fixed effects.

Moreover, we conduct the following tests to check whether the main estimates for the semielasticity of payments for royalties, services, and interests suffer from unit scale-dependence issues. We particularly check whether our coefficient of interest (Tax rate $\times$ intra-group $\times$ post) is sensitive to alternative outcome transformations: rescaling the value of payments to thousands of USD, calibrating the extensive margin values, using a Poisson Pseudo-Maximum-Likelihood estimator, normalizing the outcome by contemporary sales, examining the extensive margin through linear probability models, and finally using an inverse hyperbolic sine transformation.

Overall, these new robustness checks support that the reform did not reduce the sensitivity of multinationals' intra-group payments for royalties, services, and interests. We now turn to discussing these checks in detail.

First, we rescale the values of international payments to thousands of USD and transform them with a $ln(Y+1)$ function (Table B.23). While the impact estimates are somewhat sensitive, there is still no significant effect of the reform on the semi-elasticity of any payment

type. The magnitude of these coefficient attenuates, which reassures that the reform did not have a significant impact on this outcome.

Second, we calibrate the values placed on the intensive vs. extensive margins by replacing zero values with the 5^{th} and 10^{th} percentile values of the outcomes' distributions of positive values. Tables B.25 and B.26 show these results, respectively, and provide robust evidence of the statistically insignificant impact of the reform.

Third, we estimate Equation 3 through Poisson Pseudo-Maximum-Likelihood (PPML) instead of OLS. Table B.27 shows the same set of estimates using PPML. These are larger than our baseline estimates, although if anything, they show a - not statistically significant - increase in the sensitivity of intra-group payments to destination country tax rates following the reform.

Fourth, we normalize the set of outcomes by contemporary total sales and winsorize the upper 1% to adjust for outliers (Table B.28). Again, the effect of the reform on the semi-elasticity of international payments is attenuated towards zero and still not statistically significant.

Finally, we examine robustness by estimating responses to the reform on the extensive margin. Table B.29 analyzes robustness by estimating a linear probability model, where the outcome equals to one when firm i makes a payment to the destination country j in year t, and zero otherwise. Table B.30 estimates a similar specification where the outcome is equal to one when firm i makes a payment to destination country j that is higher than the pre-treatment average of payments to country j from 2007 to 2009, and zero otherwise. The results from these two analyses are similar to the baseline specification. Lastly, Table B.31 shows estimates using an inverse hyperbolic sine (IHS) outcome transformation, yielding consistent results.

Overall, these robustness tests support the finding that the reform did not reduce the sensitivity of multinationals' tax-motivated payments to their affiliates. In other words, the reform did not lead to a meaningful decrease in the sensitivity of intra-group payments to destination country tax rates. The lack of a significant reduction suggests that the policy may not have been effective in curtailing profit shifting through intra-group transactions, as intended by the Chilean government.

Impact of the Reform on Trade in Goods

This subsection provides further details on how likely intra-group trade is identified for the analysis of the impact of the reform on trade in goods, and describes additional econometric details, robustness checks and heterogeneity analyses.

Identifying likely intra-group trade

To identify trade that is likely to be intra-group, we proceed as follows. First, we use the customs data to calculate total amounts of imports and exports at the firm-country level (i.e., how much a given firm imports from and exports to a given country). Second, we compare these amounts to reported intra-group imports and exports by country, which firms are required to provide in tax annexes starting from 2012 - as part of the reform.[71]

By matching these two sources, we compare a multinational's total amount of trade to a given country (using the customs data) to the total amount of intra-group trade to affiliates in that country (using the tax annex data). We consider imports to be likely intra-group in firm-country pairs where the amount of intra-group imports in the tax data is close enough to the amount of total imports in the customs data (and analogously for exports). Similarly, we consider imports to be likely not intra-group in firm-country pairs where the amounts of intra-group trade reported in the tax annexes are close to zero (and analogously for exports)

One challenge of combining the trade data from taxes and customs records is that there can be discrepancies due, for example, to differences in the timing when transactions are recorded and the timing of the shipment of goods. This can lead to the amount of intra-group trade recorded in the tax annex data exceed the total amount of trade reported in the customs data. To ensure that our results are not driven by these potential discrepancies, we report results for three different bandwidths of the shares of intra-group trade relative to total trade—80% to 120%, 90% to 110%, and 95% to 105%—to define likely intra-group trade and 0% to 20%, 0% to 10%, and 0% to 5% to define likely not intra-group trade.[72] The results are robust to adjusting the bandwidth to these different definitions of likely intra-group trade (Tables and Figures).

Additional econometric details

The difference-in-differences specification in Equation 4 is based on an unbalanced panel, which excludes observations with null payments (i.e., null quantities and thus missing prices). Given that we want to compare total payments, quantities and unit prices, we do not impute zeroes to prices in observations with missing transactions. We thus transform the outcome variable (amounts, quantities, and unit prices) in levels to the logarithm of payments (e.g., $\ln(Y)$) without adding one.

[71] The tax annex data provide information on the affiliation of the trading partner but not specific product-level information, such as type of products or prices.

[72] The 80-120% range includes 16.7% of total imports by multinational firms and 10.3% of total exports, respectively.

Robustness checks

We also conduct the two checks analyzing robustness to using different tax rate data sources for the analysis on trade in goods. Figure B.3 and Table B.33 show robustness by reversing the order in which we combine the tax rate data sources (first using KPMG (2019), then OECD (2019b), and finally (Habu, 2017)). Figure B.4 and Table B.34 show results using an alternative, more recent tax rate data source from the Tax Foundation (TaxFoundation, 2024) (which includes all countries in the sample). We find no such reduction in the semi-elasticity for trade in goods. If anything, the semi-elasticity for exports increased somewhat after the reform.

Finally, the analysis of trade in goods may mask potential heterogeneities within the basket of goods traded to foreign countries across and within Chilean multinationals. To investigate this issue we regress Equation 4 on the amount, quantities and prices of imports and exports, separately for eight product groups based on the Harmonized System (HS) classification: agriculture, chemicals, foodstuffs, metals, textiles, technology, forestry, and others. Figures B.10 to B.9 show these results.

Impact of the Reform on Tax Payments

This subsection expands the analysis of the reform's impact on tax collection by elaborating on the robustness checks conducted for this specification and describing the rationale behind the heterogeneity analysis.

Robustness checks

First, as in all of our analyses, we examine alternative post-treatment windows (up to 2013, 2014, and 2015) to verify that our results are not driven by the specific time frame chosen for period after the reform (Table A.2).

Second, even if we scale tax payments by payroll and control for pre-treatment characteristics, differences in firm size between multinationals and domestic firms may still influence the results. To address this, we impose common support conditions by restricting the estimation sample to domestic and multinational firms with similar pre-treatment average sales (Figure B.13 and Table B.37) and assets (Figure B.14 and Table B.38). The main findings remain robust under these restrictions.

Additionally, we test an alternative scaling of tax payments using lagged instead of contemporaneous payroll (Figure B.15 and Table B.39). This approach yields a larger negative point estimate for the impact on taxes, while the baseline specification using contemporaneous payroll provides a more conservative estimate.

Third, as explained in Section 1.2, the number of transfer pricing audits conducted by the tax authority increased eight-fold after the reform, increasing additional tax revenue. Transfer pricing audits of firms in our sample led to 17.2 million USD in payments in 2010 and 68.1 million USD in 2011-2015. These payments stem from 224 audits of 211 unique firms, representing 7.66% of all multinationals in our sample. 33 of these firms paid additional taxes as a result of these audits.

We thus check whether including such payments that were collected as a result of audits affects our conclusions. Figure A.3 and Column (2) of Table A.4 show that incorporating audit-related tax payments only marginally changes the outcome, with all point estimates remaining far from being statistical significant.

Taken together, the findings from the administrative tax data show that the reform did not achieve its goal of reducing tax-motivated payments of multinational firms to their foreign affiliates and consequently did not significantly increase tax payments from multinational corporations. Next, we analyze whether this overall conclusion hides important observable heterogeneities across subgroups of multinationals.

Heterogeneity Analysis

The overall statistically insignificant effect of the reform on tax payments may mask heterogeneities, as not all multinationals may be equally likely to respond to the reform. We thus examine whether there are more significant effects for certain types of multinationals.

Figure A.4 shows the impact on tax payments for the full sample as presented in Table A.2 (Column 1) and for several subgroups where a larger impact might be expected. These groups are: medium-sized firms, firms with consistent pre-reform tax payments, multinationals with no affiliates in tax havens prior to the reform, Chilean-owned firms, firms that were not revealed as multinationals by the tax authority, and export-oriented firms.

Estimates (2) and (3) separately assess large vs. medium-sized firms, under the hypothesis that large firms might be less responsive if they were already compliant with international transfer pricing norms before the reform. Medium-sized firms might indeed be more flexible and likely to adjust their tax payment behaviors in response to the reform. However, the subgroup analysis reveals no significant difference in tax payments post-reform between large or medium-sized firms.

Estimates (4) and (5) analyze firms based on their pre-treatment tax payment behavior, distinguishing between those that consistently reported positive tax payments before the reform and those that did not. In Chile, as in most countries including the United States, many firms have no taxable profits after all deductions are taken out, potentially reducing the need for tax-motivated transactions to further decrease reported profits. Nonetheless, we

find no impact of the reform on multinationals that regularly had positive corporate income tax payments pre-reform.

Another group of interest comprises multinationals with affiliates in tax havens. These firms may have been more aggressive in their tax planning behavior prior to the reform or may possess greater sophistication in such planning. Estimates (6) and (7) compare multinationals with and without payments to tax havens. The point estimates for both groups are similar and remain close to zero, indicating that the presence of affiliates in tax havens does not significantly alter the reform's impact on tax payments.

We also examine the ownership structure of multinationals by comparing Chilean-owned firms to foreign-owned subsidiaries. The expectation is that foreign multinationals—most of which have their headquarters in countries that had already introduced OECD standards before Chile—might respond less to the reform. However, our estimates (8) and (9) show no significant difference in post-reform tax payments between Chilean-owned firms and foreign-owned subsidiaries.

In addition, estimates (10), (11), and (12) assess subgroups of multinationals based on when their multinational status was revealed to the tax authority. Estimate (10) includes firms that reported their multinational status prior to the reform, estimate (11) contains those that revealed it only after the reform, and estimate (12) includes firms who never revealed their status in the tax forms during our study period (but were nonetheless identified as multinationals based on data from Dun & Bradstreet and Orbis). These results show no significant changes in tax payments for any of these groups post-reform.

Moreover, multinationals that are more export-oriented may have greater opportunities to shift profits abroad. To explore this, estimates (13) and (14) compare firms with different levels of export orientation, distinguishing between those with an above-median exports-to-sales ratio and those below the median. This subgroup analysis finds no significant difference in tax payments between more and less export-oriented firms.

Finally, estimates (15) to (20) examine multinationals across different economic sectors (services, manufacturing, and primary products). These results show no significant differences in the reform's impact across industries, suggesting that the reform's limited effectiveness was consistent across sectors. Overall, none of the subgroup analyses reveal statistically significant differences in the impact of the reform on tax collection.

Figures B.16 and B.17 show that these results are robust to including a post-period that extends to 2014 and 2015, respectively. These additional checks reinforce the conclusion that the null effect is quite general across many subgroups and not the result of hidden observable firm heterogeneity.

F Transfer Pricing Methods

This appendix outlines the various transfer pricing methods used by multinationals. The OECD guidelines classify these methods into two categories: traditional transaction methods and transactional profit methods. The choice of method depends on data availability and the strengths and limitations of each approach. Since each method is better suited to specific circumstances, selecting the appropriate one requires careful consideration of the context in which it is applied. While traditional methods focus on gross margins to assess whether transfer prices are at arm's length, transactional approaches analyze profits from particular transactions between related entities.

Traditional methods

Comparable Uncontrolled Price (CUP) method: It compares the price of goods or services in a controlled transaction (between related entities) to the price of similar goods or services in an uncontrolled transaction (between independent entities) under comparable conditions. Any discrepancies between these prices may suggest that the controlled transaction is not at arm's length. In such cases, the price from the uncontrolled transaction may serve as a benchmark for adjusting the controlled transaction price.

Resale Price Method: This method starts with the resale price, i.e., the amount a related entity receives when selling a product to an independent entity. From this price, an appropriate gross margin (the resale price margin) is deducted to cover selling and operational costs while ensuring a reasonable profit. After adjusting for any additional costs, the resulting amount represents the arm's length price for the initial transaction between related entities.

Cost-Plus Method: This method begins with the actual costs incurred by a supplier in providing goods or services in a controlled transaction. A cost-plus mark-up is then added to ensure a reasonable profit, taking into account the functions performed and prevailing market conditions. Ideally, the mark-up should be based on the supplier's earnings from comparable uncontrolled transactions (internal comparables) or, if unavailable, on markups from similar transactions between independent entities (external comparables). The final value serves as the arm's length price for the controlled transaction.

Transactional methods

Transactional Net Margin Method (TNMM): The TNMM examines the net profit a taxpayer earns from a controlled transaction relative to an appropriate base, such as costs, sales, or assets. This method is similar to the Cost-Plus Method and Resale Price

Method, but instead of focusing on gross margins, it assesses net profit margins. Ideally, the taxpayer's net margin should be benchmarked against the net profit from comparable uncontrolled transactions (internal comparables). If internal comparables are unavailable, the net profit earned by independent entities in similar transactions (external comparables) can serve as a reference.

Transactional Profit Split Method (PSM): The PSM ensures that the allocation of profits in controlled transactions reflects the arm's length principle by approximating the profit distribution that would occur between independent entities in comparable circumstances. The method involves two steps: (1) identifying the total profits generated from the controlled transactions and (2) splitting these profits between the associated entities based on the relative value of their contributions. This approach ensures that each entity's share of profits aligns with its economic role and the compensation expected in similar transactions between independent entities.

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