CESifo WORKING PAPERS

10462
2023

May 2023

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CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
https://www.cesifo.org/en/wp
An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
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CESifo *Working Paper No. 10462*

The Race between Tax Enforcement and Tax Planning: Evidence from a Natural Experiment in Chile

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.

JEL-Codes: H250, H260, H320.

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May 2023

We thank Alberto Abadie, Claudio Agostini, Christopher Aitken, Marcelo Bergolo, Devika Bhatia, Katarzyna Bilicka, Anne Brockmeyer, Shawn Chen, Lorenzo Casaburi, Dhammika Dharmapala, Michael Devereux, David Dorn, Alice Evans, Claudio Ferraz, Manon François, John Friedman François Gerard, Irem Güçeri, Jeffrey Hoopes, Jim Hines, Juliana Londoño-Vélez, Michael Lovenheim, Ben Olken, Florian Scheuer, Joel Slemrod, Tavneet Suri, Eleanor Wilking, and Danny Yagan as well as participants at the Oxford Centre for Business Taxation and a number of other seminars and conferences for helpful comments and discussion, and the Weiss Foundation, the International Growth Center, the Swiss National Science Foundation, the European Research Council and the University Research Priority Program "Equality of Opportunity" of the University of Zurich for generous financial support. Zucman also acknowledges support from the Stone foundation. We are grateful to the Chilean Tax Authority for excellent research collaboration. We thank our team of outstanding, dedicated research assistants.

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 the first view, profit shifting can be reduced by improving and harmonizing the complex rules of transfer pricing that 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 because the complexity of transfer pricing regulations makes them 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 standards effectively reduce profit shifting. We provide a simple model characterizing how the tax advisory industry impacts 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 on all potential channels of profit shifting and tax revenue. Finally, we conduct extensive qualitative interviews with transfer pricing experts to understand how the tax advisory shapes how multinationals respond to the reform.

The reform we study is the introduction of OECD transfer pricing standards in Chile in 2011. The reform significantly expanded information reporting requirements on international transfers 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 program to strengthen monitoring and information reporting around the world can effectively reduce profit shifting.

Contrary to expectations that the reform would limit profit shifting and increase tax collections, we document that it did not reduce the propensity of multinationals to make tax-motivated payments to their foreign affiliates, neither for intellectual property nor interests or services. We also find no evidence that the reform impacted the prices of traded goods. Consistent with these results, we find no effect on corporate tax payments.

Our semi-structured qualitative interviews uncover the mechanisms behind this puzzling

[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, similar to the United States (which is 19^{th}).

result. Demand for transfer pricing experts exploded after the reform. The global nature of the regulation makes transfer pricing expertise portable across countries, and large consulting firms were therefore able to quickly meet the increase in demand by relocating experts from abroad. This led to a 12-fold increase in the number of transfer consultants in the country within three years. While firms initially sought advisory services to comply with the complex new reporting requirements, consultants used these new relationships to identify and up-sell firms on tax planning opportunities. Interviewees shared some specific tax planning strategies with us, which we can test for and validate with the quantitative tax data.

Overall, we find that the reform had no effect on any of the channels of profit shifting nor on tax payments, while it created a strong boost to the tax advisory industry. We therefore conclude that in the race between tax enforcement and tax planning, tax planning won.

We develop these results in three steps: we build a conceptual framework, implement quantitative analysis using administrative micro-data, and conduct in-depth qualitative interviews. 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. The framework connects our quantitative and qualitative empirical evidence and shows that reforms that increase compliance costs may backfire if they facilitate the adoption of more sophisticated tax planning strategies. These dynamics showcase the importance of taking the tax advisory industry into account when designing tax monitoring reforms.

In the second step, we evaluate the effects of the reform using administrative tax and customs data. We start by confirming that multinationals engage in tax-motivated transactions. Intra-group payments for royalties, interest, and services flow disproportionately to affiliates in lower-tax countries.[2] To establish this fact, we exploit changes in tax rates of the countries where a multinational firm has foreign affiliates. This within-firm research design allows us to include destination-country and firm-year fixed effects as well as controls for destination country GDP so that results are not contaminated by constant features or economic fluctuations of destination countries or by firm-level shocks. We find that, before the reform and relative to non-affiliates, a one percentage point reduction in the tax rate of a destination country is associated with an increase in payments to affiliates of between 4.5–4.9%. In contrast, payments to non-affiliated firms are not sensitive to the tax rate in

[2]Intra-group payments are transactions within the worldwide group of affiliates of one multinational.

the destination country.[3]

We then use a difference-in-differences event-study design to study whether the reform was effective at reducing multinationals' propensity to make intra-group payments to lower-tax countries. The identifying assumption behind this analysis is that (conditional on the controls mentioned above), absent the reform, the tax sensitivity of payments by a given firm to affiliates and to non-affiliates would have evolved in parallel. In support of this assumption, we show that these semi-elasticities evolved in parallel before the reform. The reform was motivated by the belief that a significant part of these transactions are due to profit shifting and that monitoring would allow the tax authority to curtail this behavior and increase revenues. However, the reform did not have this effect. There is no reduction in the sensitivity of intra-group payments of royalties, interests, or services to changes in destination country tax rates. After the reform, the sensitivity is even somewhat higher, although this difference is not statistically significant.

In addition to analyzing payments for royalties, services, and interests, we also study the effects of the reform on the fourth potential channel for profit shifting: trade in goods. Combining customs data with data from tax filings, we can investigate prices of traded goods for transactions that are likely to be intra-group. Comparing the goods prices of these transactions to those of domestic firms, we find that the reform did not impact the prices for either imports or exports.

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 measure the effects on corporate income tax payments, comparing multinationals to other internationally active firms (i.e., those with exports, imports, or cross-border payments). The identifying assumption is that these domestic and multinational firms were not differentially affected by other shocks at the time of the reform. 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. Supporting this assumption, we show 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

[3]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.

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. (2022) estimate that in 2015, Chile lost the equivalent of 20% of multinationals' corporate tax revenue to profit shifting. 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.

In a third step, we conducted in-depth interviews with transfer pricing experts both in Chilean multinationals and consulting firms. These semi-structured interviews were designed to uncover how multinationals responded to the reform.[4] The first big change was a strong increase in demand for transfer pricing consulting services. Within three years after the reform (2010–2014), the number of transfer pricing experts working at the Big Four consulting firms (i.e., Deloitte, EY, KPMG, and PwC) in the country increased from 8 to 95.[5]

Interviewees shared that tax 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 tax 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 that were optimized from a business and tax-minimization perspective. 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

[4]Finkelstein et al. (2021) discuss examples of the use of qualitative interviews in recent economics papers, including Starr (2014); Taubman et al. (2014); Alsan et al. (2019); Bergman et al. (2023).

[5]Note that in contrast to US tax data, tax filings in Chile do not include information on whether an external tax professional was involved in the preparation of the filing.

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, it is the first to provide a comprehensive evaluation of the effects of a transfer pricing reform by measuring its impact on each profit shifting channel as well as on tax payments. This builds on a large and 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., 2020). The prior literature has established that firms make tax-motivated payments via intangible assets such as patents and trademarks (Dischinger and Riedel, 2011; Karkinsky and Riedel, 2012; Griffith et al., 2014; Alstadsæter et al., 2018; Delis et al., 2022), debt and interest payments (Desai et al., 2007; Mintz and Weichenrieder, 2010; Buettner et al., 2012; Bilicka, 2019), services such as finances, administration, IT, marketing or intellectual property (Hebous et al., 2011; Hebous and Johannesen, 2021), and trade in goods (Clausing, 2003; Bernard et al., 2006; Clausing, 2006; Cristea and Nguyen, 2016; Davies et al., 2018; Liu et al., 2019; Wier, 2020). Prior work has also investigated the effectiveness of transfer pricing regulations. Using panel data of European multinationals, Lohse and Riedel (2013) find that when countries require some form of transfer pricing documentation, the sensitivity of reported earnings to the tax rate falls.[6] See Dharmapala (2020) for a survey.

Second, our study contributes to the surprisingly small literature on tax advisory services (Slemrod, 2019). Previous research has highlighted 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, and the in-depth interviews suggest important mechanisms through which tax consultants

[6]Wier (2020) documents the existence of transfer mispricing of trade in goods in South Africa and shows that an OECD reform was not followed by a significant reduction in mispricing. Brounstein (2023) studies the effects of an Ecuadorian financial transactions tax on payments made to tax haven recipients and shows that it significantly decreased dividend payments. Liu et al. (2019) studies the effects of a UK reform that changed the taxation of corporate profits from a worldwide to a territorial system and find that the reform led to a substantial increase in transfer mispricing.

influence the practical effects of tax policy, some of which we are able to test and confirm with the administrative tax data.[7]

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 them 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; Bilicka et al., 2022; Jensen, 2022). 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, since their complex structures may provide them with more opportunities to respond with sophisticated tax planning.

Finally, our paper adds more broadly to the literature on tax capacity in developing countries (see Pomeranz and Vila-Belda (2019) for a review). Significant attention in this literature has been devoted to the taxation of small and medium-sized firms (see, e.g., Best et al., 2015; Mittal and Mahajan, 2017; Waseem, 2018; Brockmeyer et al., 2019; Weigel, 2020; Basri et al., 2021; Jensen, 2022; Okunogbe and Pouliquen, 2022) and to property taxes (see, e.g., Bergeron et al., 2020; Okunogbe, 2021; Balán et al., 2022; Brockmeyer et al., 2022). Due mostly to data constraints and lack of exogenous variation, few papers so far have been able to analyze large corporations (with the notable exceptions of Holz et al. (2023) and Carrillo et al. (forthcoming)), even though they represent a large share of tax revenue.

Paper organization. Section 1 provides background on taxation of multinationals and the reform. The model in Section 2 clarifies the roles of information reporting, tax advisory services, and enforcement. Section 3 describes data and empirical strategy. Section 4 shows effects of the reform on intra-group transfers, trade prices, and tax payments, Section 5 discusses qualitative results and the role of the tax advisory industry. Section 6 concludes.

[7] 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).

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 part of the multinational conglomerate and are located in different countries. According to standard regulations, taxation is applied separately by each jurisdiction on the profits of affiliates in that jurisdiction. This raises challenges, as multinational firms may circumvent taxation by shifting profits to affiliates in lower-tax countries, thereby substantially 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 such as royalties, and goods. For instance, a subsidiary in country A can buy services at 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 subsidiaries of a multinational firm should transact as if they were separate entities and bill each other at prevailing market prices.[8] Zucman (2014) describes the history and implications of these rules. Today, the arm's length principle is embodied in Art. 9 of the OECD Model Tax Convention (OECD, 2019a) and further detailed in the OECD's transfer pricing guidelines (OECD, 2017).[9]

In practice, the arm's length principle can be hard to implement since many types of 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 an increasingly 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 can be calculated when a market price is not available (e.g., by

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

[9] For a list of non-OECD countries that follow similar transfer pricing guidelines, see Table A1.

calculating the justifiable profitability of each transaction).

The Corporate Income Tax in Chile

The Chilean corporate income tax is a standard tax on corporate profits. In its detailed features, it is similar to the way the US corporate income tax worked before the Tax Cuts and Jobs Act was implemented in 2018.[10] Even though Chile is generally not a high-tax country, multinationals have incentives to shift profits out of the 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, i.e., have foreign affiliates, but these firms pay over 60 % of all corporate income taxes (Servicio de Impuestos Internos, 2021). Overall, the corporate income tax is a major source of tax revenue, accounting for 20% of government revenue in 2007–2015 (Bachas et al., 2022).

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 impact our analyses. They are either netted out by destination-country year fixed effects in our intra-firm analyses (of the sensitivity of payments to destination country tax rates)[11] or impact both treatment and control firms in our inter-firm analyses (of the effects of the reform on goods prices and on tax payments).

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 strongly encouraged member countries to introduce legislation requiring firms to submit detailed documentation to justify their intra-group payments and transfer prices.[12] The reform incorporates the key elements of these OECD guidelines.

The reform had three main components. First, the law significantly expanded reporting

[10]It 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.

[11]We also provide robustness analysis taking the changes in the Chilean tax rate into account.

[12]In a later stage, the OECD introduced the "base erosion and profit shifting" (BEPS) initiative that started in the mid-2010s. 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, since BEPS keeps the arm's length pricing while further strengthening reporting requirements.

requirements for multinationals, following the OECD (2010) guidelines. Under the new legislation, multinational firms are required to report all transactions with affiliates abroad and the methods used to price these transactions. These new reports had to be filed for the first time with tax declarations for the 2012 tax year. Second, the law shifted the burden of proof for compliance with transfer pricing regulations from the tax authority to the firms. Firms now need to be able to provide justification for the pricing of their intra-group payments. This paved the way for the tax authority to challenge the pricing of intra-group transactions. Finally, the reform substantially increased the resources devoted to enforcement. Starting in 2011, the tax authority hired specialized auditors and created a new unit to monitor and enforce transfer pricing rules and the arm's-length principle.

The regulatory and enforcement environment regarding transfer pricing became significantly more strict 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 32 countries based on assessments by transfer pricing experts from Big Four consultancies. Figure 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 describes a model of the regulation as a change in the tax monitoring regime, where multinationals may respond by relying on tax advisors. The framework captures three key forces that emerged from our interviews and that may impact the effectiveness of the expansion of transfer pricing regulations around the world. First, the reform increases demand for external tax advisors to support compliance with the new, complex reporting requirements. Second, there is a complementarity between compliance and tax planning, as tax advisors can build on compliance work to sell tax planning services. Finally, the global nature of transfer pricing regulations allows multinational advisory firms to have an elastic supply response to the increased demand for transfer pricing experts. Based on these forces, the model identifies the circumstances under which regulations are more likely to be effective.

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.[13] Absent profit shifting, global after-tax profits are given by $\sum_j [(1-t_j)f_j(K_j) - \rho K_j]$.

We consider two dimensions of tax monitoring regimes: compliance requirements F_1, and enforcement F_2. In the context of the OECD regulation we study, F_1 includes information reporting on intra-group payments of multinationals. 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. We allow θ_1 and θ_2 to depend on whether firms rely on in-house or consulting accountants.

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.[14] 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. To reduce global tax liabilities, multinationals over-report profits in low-tax countries (i.e., $t_j < \tilde{t}$). Profit shifting is greater when θ_2—the ability to avoid detection through tax planning—is high and when enforcement is lax, i.e., F_2 is low.

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

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

[13] We assume that the globally-determined cost of capital ρ is independent of the tax policies we consider.

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

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, $\frac{\theta_2}{F_2}\psi(\theta_2, F_2)$. Firms invest across countries to satisfy the condition

$$(1 - t_j) f_j'(K_j) = \rho - \frac{\theta_2}{F_2} \frac{(\tilde{t} - t_j)^2}{2}. \tag{1}$$

Profit shifting lowers the effective cost of capital in all locations. Thus, while increasing F_2 reduces profit shifting, it also increases the cost of investment. Firms pay taxes on reported profits in country j, denoted by $\tilde{\pi}_j = r_j K_j$.[15]

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. We assume the economy is populated by a continuum of firms i, which can have in-house accountants, denoted by I, or consult with a specialized firm, denoted by C. As in Brockmeyer et al. (2022), we model this decision as a discrete choice.

Consistent with information obtained in our interviews, 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., $\theta_2^C > \theta_2^I$.[16] Implicit in this formulation is the notion that, while firms may initially establish a relationship with a consulting firm to support them in fulfilling compliance requirements, the consulting firm will "up-sell" the client firm on tax planning services.[17] Finally, not all multinationals use consultants because each firm has idiosyncratic costs and benefits from contracting such external services. These factors, which we denote $\theta_{0,i}^C \sim G(\cdot)$, include risks from sharing confidential business practices, costs of transitioning accounting systems, or particular tax planning benefits linked to a firm's intellectual property. For simplicity, we assume $\theta_2^I \approx 0$, implying that firms with in-house accountants do not engage in profit shifting.

[15] Additional enforcement (raising F_2) increases reported profits in high-tax countries but may lower K_j. Throughout, we assume that the reporting effect of F_2 on $\tilde{\pi}_j$ dominates the real effect. Thus, if j is a high-tax country (i.e., $t_j > \tilde{t}$), we expect that increasing enforcement raises reported profits, i.e., $\frac{\partial \tilde{\pi}_j}{\partial F_2} > 0$.

[16] As we discuss in Section 5, interviews with transfer pricing professionals reveal that in most cases it is too expensive for individual companies to hire leading experts in transfer pricing, as they tend to be highly specialized and are few in number. This is a feature of transfer pricing expertise that underlies the business model of large consulting firms and is not specific to Chile.

[17] This dynamic has been repeatedly described in our interviews with representatives of multinationals and consulting firms. While this dynamic may occur over time, the model assumes that multinationals obtain the benefits of tax planning services (higher θ_2) immediately upon contracting with the consulting firm.

An individual firm seeks the services of consulting firms whenever

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

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

We can now examine how policies F_1 and F_2 affect the choice of in-house vs. external tax accountants. 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

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

The first equation notes that increasing compliance requirements lower profits by the average compliance cost across firms, $\bar{\theta}_1$. The second equation notes that increasing penalties reduces profits of firms that use consulting accountants by limiting benefits from profit shifting. While the reduction in profit shifting may have real effects on capital investment (as in Eq. 1), this does not enter into the second expression above since firms had already jointly optimized investment and profit shifting decisions. Similarly, these expressions do not depend on the effects of F_1 and F_2 on the choice of accountants.[18]

2.4 Tax Monitoring and the Demand for Tax Planning

We now consider how the government's choice to monitor firms affects welfare, following a tax administration setup as in Keen and Slemrod (2017). A tax monitoring regime is a combination of compliance requirements F_1 and penalties F_2. To justify penalties F_2, the government needs to demand compliance requirements $F_1 = \gamma F_2$.[19] The government sets F_2 to maximize total profits subject to the constraint that corporate tax payments in their

[18] Even though consulting firms have lower marginal costs of compliance θ_1^C, firms that switch are indifferent between the savings from using a consulting firm and the idiosyncratic costs of switching $\theta_{0,i}$. Thus, the fact that the effects of the reform on investment and accounting choices do not have first-order effects on profits is a result of the envelope theorem. Busso et al. (2013) formalize this logic for the case of extensive-margin decisions, such as the choice of accountants in our setting.

[19] More generally, assume F_1 is determined by a non-linear function of F_2, e.g., $F_1 = H(F_2)$. The derivations below can be interpreted by viewing γ as the local effect of F_2 on F_1, i.e., $\gamma = \frac{\partial H(F_2)}{\partial F_2}$.

country ($j = 1$) exceed a revenue requirement, R. 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 the costs of administering the information monitoring regime are given by $a(F_1, F_2)$.

The welfare effect of a tax monitoring reform that increases F_2 is then:

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

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.[20] The reform lowers profits by increasing compliance costs of all firms and reducing profit shifting for the fraction of firms, N^C, that engage in profit shifting.[21] Implementing the reform is costly: both F_1 and F_2 increase administrative costs for the government, $a(F_1, F_2)$. The third term shows that additional penalties reduce profit shifting along the intensive margin, which contributes to tax collections. The last two terms characterize the effects of the policy through the choice of accountants. The fourth term shows that the reform can increase or decrease the fraction of firms that rely on consulting firms.

The coefficient γ identifies when tax monitoring regimes are effective. When γ is small, the reform has smaller negative effects on profits through compliance costs and lower administrative costs. Moreover, a low value of γ may imply that multinationals are *less* likely to rely on consultants, i.e., $\gamma\frac{\partial N^C}{\partial F_1} + \frac{\partial N^C}{\partial F_2} < 0$, which would increase tax revenue by decreasing the use of more potent profit shifting technologies.[22] Thus, reforms that have larger effects on enforcement and have lower compliance costs are more effective at raising welfare and

[20] λ captures the opportunity cost of government funds. Since revenue R is fixed, this value corresponds to the marginal social value of lowering taxes on everyone else.

[21] While compliance costs benefit consultants, these payments capture a welfare loss to the extent that they divert efforts from other worthwhile activities, even after including fiscal externalities for the taxes they would pay in Chile. This calculation also abstracts from the possibility that in the process of complying with the reform, consultants may improve business practices in unrelated domains.

[22] N^C decreases when $\gamma\frac{\partial N^C}{\partial F_1} + \frac{\partial N^C}{\partial F_2} = G'(\Delta\Pi)\left[\gamma(\theta_1^I - \theta_1^C) - \frac{\theta_2^C}{F_2^2}\psi(\theta_2^C, F_2)\right] < 0$. That is when the additional compliance costs are smaller than the reductions in profit shifting.

revenue. Indeed, a reform that does not increase compliance requirements, F_1, but that increases penalties, F_2, would correspond to a case where $\gamma = 0$.[23]

In our empirical setting, the reform led to a substantial increase in the number of firms that use consultants. One interpretation is that this type of OECD-led transfer pricing reform has a large γ: high compliance costs paired with weak enforcement opportunities for the government. Our model, therefore, highlights a reason why avoiding regulations that lend themselves to avoidance through tax planning is key. Compliance costs may lead firms to set up relationships with consultant accountants that—in addition to being better at complying with reporting requirements—may reduce tax revenue through tax planning.[24]

2.5 Tax Monitoring and the Supply of Tax Planning

The discussion above focuses on the demand side for tax planning services. Our interviews with transfer pricing specialists also revealed interesting features of the supply side. An important aspect of the global transfer pricing services industry is that the major tax advisory firms are themselves multinationals, which makes the supplies of these services elastic.

Since the reform followed internationally standardized guidelines, which had been adopted by other countries in prior years, international consultancies were able to import know-how about how to deal with such regulations. The major consulting firms have subsidiaries in these countries, which allows them to quickly import experts and move them from their global network to Chile. The structures and management methods of these consulting firms enable them to replicate and scale compliance and tax planning technologies relatively easily in new countries. Each senior consultant with long-term experience supporting multinationals with transfer pricing issues—in any country with similar regulations—can move to the new country and lead a team that effectively serves dozens of client companies within a matter of months. Our model captures this ability to transfer knowledge from other countries quickly to a new context in the relative differences between accounting technologies (i.e., $\theta_1^C < \theta_1^I$ and $\theta_2^C > \theta_2^I$). The ability to scale these services within consultancies meant that many firms could adopt tax planning strategies without bidding up the price of such services.

[23] In our derivation above, we viewed γ as a feature of the environment. One could alternatively view it as a policy choice to the extent that governments can increase penalties without additional information.

[24] This insight is consistent with results of Slemrod et al. (2001), who find that high-income taxpayers reduce tax payments in response to information that their returns will receive extra scrutiny, possibly as a result of engaging the services of tax professionals. Similarly, Bernheim (1987) notes that efforts to increase estate tax revenue can backfire by pushing high-wealth individuals to adopt estate-planning techniques.

3 Data and Empirical Strategy

3.1 Data

We combine micro-level administrative data from the tax authority and from customs, information about multinational affiliations from Orbis and Dun & Bradstreet, and information on international corporate tax rates from various sources (described below). To complement the quantitative analysis, we conducted in-depth qualitative interviews with transfer pricing consultants and in-house tax accountants of multinational firms.

Administrative and Other Quantitative Data

The tax data cover the entire universe of internationally active firms between 2007–2015. We obtain firms' sales, payroll, and taxes from annual corporate income tax filings and merge this data with administrative information on firm characteristics, such as industry and size. Data on payments to foreign firms for intangibles, services, and interests stem from mandatory filings of tax annexes (*declaraciones juradas*) number 1850, 1912, and 1907, which accompany the income tax returns. We have information on the amounts of such payments, the country where the recipient firm is located, the relationship to the recipient firm (unaffiliated, subsidiary, owner of the Chilean firm, or jointly owned by a third party), and the purpose of the payment: royalties, services, interests, and "other."[25]

In terms of trade in goods, customs data contain transaction-level data on the universe of imports and exports, including information on the product, unit price, quantity, and country of acquisition (for imports) or country of destination (for exports). However, the customs data do not include information on whether or not the trade is with an affiliate firm. Starting in 2012, firms had to report total amounts of trade in goods with foreign affiliates by trading country. However, these data do not contain information about products or prices. As we discuss in Section 3.2, we combine information from these tax annexes with information from customs to identify prices of trade in goods that are likely intra-group.

We complement these administrative datasets with information on statutory corporate tax rates for countries where affiliates of multinationals are located, obtained from the Centre for Business Taxation Tax Database (Habu, 2017). For countries for which this is not available, we use data from the OECD (2019b), and if neither of these sources has the data,

[25]Royalty payments include payments for intangibles such as copyright and patents. Most of the payments in the "other" category are unclassified, reported as "other income obtained by non-residents".

we use KPMG (2019).[26] To identify firms with foreign affiliates that did not reveal their status as multinationals to the tax authority, we merge the administrative data to firm directories from Orbis and Dun & Bradstreet, where these firms are listed as multinationals.

Sample and Descriptive Statistics

The study sample includes all internationally active firms that are at least medium size (small firms are exempt from the reform).[27] Firms are classified as internationally active if they have imports, exports, or payments to foreign companies, and they are classified as multinationals if they have any affiliates abroad. To focus on economically active firms, we restrict the sample to firms with positive payroll and input costs for every year.

Table 1 provides summary statistics for 2010 (right before the start of the reform). Panel A presents key variables from the corporate income tax form. The sample includes 11,333 domestic and 2,755 multinational firms. As expected, multinationals tend to be larger. Their mean annual domestic sales are 35 million USD [median 8.9 million] compared to 5.5 million USD for the domestic sample [median 1.8 million].[28] There are similar differences in payroll, assets, profits, and taxes. Internationally active domestic firms pay an average of 64,000 USD in corporate income taxes [median 18,000 USD], while multinationals pay an average of 420,000 USD [median 40,000 USD]. As discussed below, we account for these differences by normalizing outcomes relative to firms' size in our empirical analysis.

Panel B of Table 1 shows data from the tax annexes on payments for royalties, interests, and services to firms abroad (affiliates and non-affiliates combined). This panel only includes firms that report such payments in 2010. Few domestic firms make any such payments in a given year (283 out of 11,333), while more than 40% of multinationals do. On average, multinationals pay more than 1.4 million USD abroad for royalties, interests, services, and other payments, corresponding to 26% of their taxable profits (EBIT).

Qualitative Interviews

We complement the quantitative data with two rounds of semi-structured qualitative interviews with transfer pricing experts in Chile to better understand the roles of the tax advisory industry. In 2014, we carried out in-person interviews with senior transfer pricing

[26] We use data from (Habu, 2017) for 43 countries, OECD data for 30 countries, and KPMG data for 18.

[27] This means they have sales of at least 25,000 Chilean UF (Unidad de Fomento), corresponding to around 1 million USD.

[28] We convert amounts in tax filings from Chilean Pesos to current USD using annual exchange rates from the IMF. The customs data are already reported in USD.

consultants in the Chilean branches of Big Four consulting firms. In 2021–2022, we conducted a larger series of in-depth interviews via video conference, both with consultants and in-house tax professionals in multinational firms. These semi-structured interviews were conducted under confidentiality and designed to understand the role of tax advisors, how the reform changed their business, and their interactions with client firms.

We use open-ended questions, which allow for more detailed responses and unexpected answers than structured surveys (Boyd and DeLuca, 2017). This enables us to gain deep information from experts' own knowledge and experience. When used in tandem with quantitative analysis, qualitative methods can allow researchers to gain a better understanding of the context and discover potential mechanisms that may drive findings. These methods may be particularly insightful when results are counter-intuitive and might provide more context on the setting, design, and implementation of a policy (Finkelstein et al., 2021). Recent examples of the use of these methods in economics research include work by Starr (2014); Taubman et al. (2014); Alsan et al. (2019, 2022); Bergman et al. (2023).

The basis for our semi-structured interviews is a roadmap to guide the conversation. In contrast to fixed scripts, an interview roadmap consists of a series of open-ended questions but leaves flexibility for the conversation to evolve, with the goal of potentially discovering unexpected aspects (i.e., "unknown unknowns"). Further details on the content of our roadmap and methods used can be found in Appendix C. In qualitative methods, the duration and depth of the conversations are key. Interviewing the same participant for a longer duration and on more than one occasion can provide more additional information than increasing the number of respondents. Repeat interviews allow for clarifying questions and learning new details that would not have come up in a single interview. In addition, after identifying new themes in early interviews, the roadmap can be adapted to incorporate these new topics and circle back to other respondents, to learn whether they had similar or different experiences on these issues.[29] A further benefit of multiple interviews is that they can help build rapport and trust between researchers and subjects, thus increasing the quality of responses (Grinyer and Thomas, 2012). We, therefore, conducted 2-3 lengthy interviews with several respondents.

A key feature of our research is the iterative combination of qualitative and quantitative

[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.

analysis. Some of the hypotheses that emerge from the interviews are testable with our quantitative data. We are therefore able to triangulate information provided by interviewees with the administrative data, iterating between qualitative and quantitative analysis.

3.2 Empirical Strategy

We use the administrative data to first estimate whether multinationals in Chile make tax-motivated payments for royalties, services, and interests before assessing in a second step whether the reform impacted the extent of such payments. Third, we analyze the impact on prices in goods trade. Finally, we estimate the impact of the reform on tax payments.

Do Multinationals Make Tax-Motivated Payments out of Chile?

An important piece of analysis before investigating the impact of the reform is to examine whether multinationals engage in tax-motivated international transactions prior to the reform. If there were no tax-motivated payments out of Chile, this would explain the lack of impact of the reform. We, therefore, examine whether payments by multinationals to their foreign affiliates respond to changes in the destination country tax rate, i.e., we estimate the semi-elasticity of intra-group payments with respect to destination country tax rates. If payments of multinationals to their affiliates abroad systematically increase when the corporate income tax rate in the affiliate's country falls, this suggests a tax-reduction motive.

This analysis uses intra-firm, intra-destination country variation, comparing payments to affiliates to payments to non-affiliates by the same firm in the same destination country. We leverage variation in tax differentials across destination countries of a given multinational. The administrative data allow us to undertake this analysis both for payments to affiliates ("intra-group")—which reduce tax liabilities—and for payments to non-affiliate firms abroad—which do not. If payments to affiliates are tax-motivated, we expect their semi-elasticity with respect to the destination country tax rate to be negative. At the same time, if there is no omitted variable bias, we expect this semi-elasticity to be zero for payments to non-affiliates. We use the following intra-firm difference-in-differences specification:

$$\ln(Y_{ijat}+1) = \beta_1 \text{Tax Rate}_{jt} + \beta_2 \text{Tax Rate}_{jt} \times \text{Affiliate}_a + \beta_3 \ln(\text{GDPpc})_{jt} + u_{it} + \alpha_{ia} + \mu_j + e_{ijat} \quad (3)$$

Y_{ijat} is the amount paid by firm i to firms in country j in year t. Outcomes include total payments, royalties, services, interests, and "other/unclassified".[30] Subscript a denotes

[30]We use the log of $Y + 1$ so that observations with null payment are not set to missing. Robustness

whether payments were made to an affiliated or unaffiliated company abroad. Each observation therefore represents annual firm payments by destination country and affiliation status. $Affiliate_a$ is a dummy that equals one for payments to affiliates. $Tax\ Rate_{jt}$ is the statutory corporate tax rate of country j in year t.

Equation 3 is reminiscent of extensive work in international tax that studies how tax differentials impact reported profits across countries (see Heckemeyer and Overesch, 2017, for a survey). Our data have the advantage that we observe transactions between firms, both for payments to affiliates and non-affiliates abroad. In contrast to studies that use financial statements, our results are not contaminated by the double-counting problem pointed out by Blouin and Robinson (2020). While we see this as an advantage of our setting, our results are not directly comparable to prior estimates of the tax sensitivity of reported profits.

The sample for this analysis includes all multinationals that reported any payments to a foreign affiliate between 2007 and 2015. We use a balanced panel of all parent-affiliate-country-pairs to which a firm made any payments during this period. This ensures that the network is constant over time and that results are not driven by changes in the network of affiliates. We control for the log of the destination country's annual GDP per capita $\ln(\text{GDPpc})_{jt}$ to avoid confounding changes in the tax rate of the destination country with changes driven by its economic developments. Company-year fixed effects u_{it} account for firm-level shocks and destination country fixed effects μ_j for potential correlations between countries' level of tax rates and their economic ties to Chile. We further include company-affiliation status fixed effects α_{ia} to capture any time-invariant difference in payments to affiliates vs. non-affiliates at the firm level.

For robustness, we also report analyses that use tax rate differences between Chile and a given country as well as specifications with firm-affiliation status-year fixed effects, destination country-year fixed effects, and destination country-firm fixed effects.[31] Moreover, we show results on the IHS transformation of outcome variables and on the extensive margin of whether a firm makes any payment to destination country j. Throughout this paper, we show three different post-treatment windows (up to 2013, 2014, and 2015), standard errors

checks show that results are qualitatively similar when using the inverse hyperbolic sine (IHS) of payments and when estimating a linear probability model for making any payments to country j.

[31] Both of these specifications account for changes in the domestic tax rate. Including country-year fixed effects prevents us from estimating the responsiveness to tax rates for payments to non-affiliates (β_1), as it is collinear with country-year tax rates, but we can still identify the differential responsiveness of payments to affiliates relative to non-affiliates (β_2).

are clustered at the firm level, and to reduce the effect of outliers, we winsorize all continuous variables in levels at the 99$^{\text{th}}$ percentile of their non-zero values.

β_1 can be interpreted as the semi-elasticity of payments to non-affiliates with respect to destination country tax rates. β_2 captures the difference in the semi-elasticity of payments to affiliates vs. non-affiliates. e_{iajt} is the error term.[32] If payments by multinationals to their foreign affiliates are in part tax-motivated, we expect the semi-elasticity to be negative for affiliates. In contrast, we do not expect this to be the case when the recipient firm is a non-affiliate (β_1), as there is no tax-minimizing motive in that case.

Impact of the Reform on Intra-Group Payments

Next, we can evaluate whether the reform had an impact on the sensitivity of intra-group payments to changes in destination country tax rates. We extend the approach above to an event study design with annual estimates of Equation 3 for 2007-2015. Event study figures allow us to examine whether the parallel trends assumption is reasonable and whether there is a discontinuous change after the reform. Pre-reform data cover the years 2007–2010. To have a cleaner test of the pre-treatment parallel trend evolution, we use 2009 as the baseline for all event studies in this paper, leaving the coefficient in 2010 as a "placebo" year.

To compare the post- vs. the pre-treatment period overall, we also extend Equation 3 to the following triple difference intra-firm specification:

$$\begin{aligned}\ln(Y_{ijat}+1) = {} & \beta_1 \text{Tax Rate}_{jt} + \beta_2 \text{Tax Rate}_{jt} \times \text{Affiliate}_a + \beta_3 \text{Tax Rate}_{jt} \times \text{Affiliate}_a \times \text{Post}_t \\ & + \beta_4 \text{Post}_t + \beta_5 \text{Tax Rate}_{jt} \times \text{Post}_t + \beta_6 \text{Affiliate}_a \times \text{Post}_t \\ & + \beta_7 \ln(\text{GDPpc})_{jt} + u_{it} + \alpha_{ia} + \mu_j + e_{ijat} \end{aligned} \tag{4}$$

$Post_t$ equals one for years 2011 and beyond. β_2 captures the difference in the semi-elasticity of payments to affiliates vs. non-affiliates before the reform. If the policy change is effective in reducing profit shifting, one would expect the (negative) semi-elasticity to become smaller in absolute terms, that is, the coefficient β_3 on $\textit{Tax Rate}_{jt} \times \textit{Affiliate}_a \times \textit{Post}_t$ would be positive.

As above, controls account for any firm-level shocks, destination country-level differences, time-invariant differences in firm payments to affiliates vs. non-affiliates, and changes in per

[32] 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 $\textit{Tax Rate}_{jt}$ from firm-year fixed effects and plot the magnitude of the changes in these residuals in Figure A1. 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.

capita GDP in the destination country. We also include $Affiliate_a \times Post_t$ to account for potential changes in levels of payments to affiliates before and after the reform that are not related to tax rate differentials. The identifying assumption is that conditional on these controls, absent the reform, a given firm's sensitivity to tax rates in destination countries would have evolved in parallel for payments to affiliates and to non-affiliates. Consistent with this assumption, we show that the tax sensitivity of intra- and extra-group payments evolved in parallel prior to the reform. This assumption is also supported by the robustness checks mentioned above.

Impact of the Reform on Trade in Goods

As discussed in Section 3.1, information on trade in goods is not recorded in the same way as trade in royalties, services, and interests. On the one hand, we have more information on trade in goods from the customs data, but on the other, there is less information in tax filings. We therefore combine customs and tax data to explore whether the reform impacted the prices of trade in goods by multinationals with their affiliates.

We analyze unit prices at the 8-digit product level.[33] While we would ideally want to compare prices of trade with affiliates to trade of the same firm with non-affiliates, customs data do not include the affiliation status of trading partners. We address this limitation by combining customs and tax data to identify trade with a high likelihood of being intra-group. We consider imports to be likely intra-group in firm-country cases where the amount of intra-group imports reported in tax data is close to the amount of total imports in the customs data (analogously for exports).[34] See Appendix B for more details on this approach.

We compare the evolution of quarterly unit prices of multinationals in country-firm pairs with a high likelihood of being intra-group trade with prices of the same products traded by domestic firms, using the following difference-in-differences specification and its event study equivalent:

$$\ln(\text{Price})_{ipt} = \alpha_0 + \beta_1 \text{Multinational}_i \times \text{Post}_t + \mu_i + \nu_{pt} + e_{ipt} \tag{5}$$

$\ln(\text{Price})_{ipt}$ is the average unit price (weighted by trade volume) of imports/exports of prod-

[33] Product codes are generated by combining 6-digit Harmonized System (HS) codes with 2-digit codes for units of measurement. If a product with the same HS code is measured in several units, we treat the combined codes as separate products.

[34] For robustness, we show results for different bandwidths of intra-group trade relative to total trade: 80%–120%, 90%–110%, and 95%–105%. Intra-group trade reported in tax filings for a given firm-country pair can be larger than total trade in customs data due to measurement error, which can result, for example, from differences in timing between the payment for a given trade and the physical shipment.

uct p by firm i in quarter t. Multinational_i is a dummy equal to 1 if the firm is a multinational, Post_t is a dummy equal to 1 for years 2011 and beyond, and μ_i and ν_{pt} are firm and product-quarter fixed effects. Observations are at the product-firm-quarter level.

By including product-quarter and firm fixed effects, we control for product-level shocks and time-invariant differences in price levels between domestic and multinational firms. Since the analysis of goods prices relies on *inter*-firm variation, its identification assumption is stronger than the previous ones using *intra*-firm variation. The identifying assumption of this analysis is that absent the reform, the development of prices in multinationals' likely intra-group trade and in domestic firms' trade would have followed parallel trends. In support of this assumption, we show that they evolved in parallel prior to the reform.

Impact of the Reform on Tax Payments

Finally, we study the effects of the reform on corporate income tax payments. This analysis compares the evolution of taxes paid by multinationals to those of internationally active firms with similar characteristics but without foreign affiliates. An important challenge is that multinationals are larger than internationally active domestic firms and also tend to operate in different industries. To control for these differences and to make the groups comparable along observable characteristics, we follow Yagan (2015) by scaling each outcome by firms' size and by controlling for pre-treatment firm characteristics by year. As shown in the last two rows of Panel A in Table 1, while multinationals pay over 6.5 times more taxes than internationally active domestic firms, their tax/payroll ratios are very similar (0.162 vs. 0.163). We also control for a number of pre-treatment firm characteristics interacted with year fixed effects: industry dummies, pre-treatment average sales, pre-treatment average of sales/payroll, and of sales/assets (all in linear and quadratic terms). The latter two variables represent a proxy for firm technology. Since the pre-reform period is 2007 to 2010, and 2010 again serves as the placebo year, we use the years 2007 to 2009 to construct the pre-treatment variables. We then estimate the following difference-in-differences regression, as well as its event study equivalent:

$$\frac{Y_{it}}{\text{Payroll}_{it}} = \alpha_0 + \beta_1 \text{Multinational}_i + \beta_2 \text{Post}_t + \beta_3 \text{Multinational}_i \times \text{Post}_t + \beta_4 X_{it} + u_i + e_{it} \quad (6)$$

Y_{it} denotes the outcome of interest for firm i in year t. $Multinational_i$ is a dummy equal to 1 if firm i is a multinational. $Post_t$ equals 1 for years 2011 and beyond. X_{it} is a vector of the pre-treatment characteristics interacted with year fixed effects. u_i indicates firm fixed

effects and e_{it} is the error term. As in Yagan (2015), we express the outcome in event study figures in standard deviations.

We provide two pieces of evidence in support of the identifying assumption that, absent the reform, treatment and comparison groups would have evolved in parallel. First, we check whether they evolved similarly before the reform. Second, we analyze the effect on a "placebo" outcome that is not expected to be affected by the reform: domestic sales. We also conduct a number of robustness tests to ensure that results are not driven by sample selection or the definition of outcome variables. First, as above, we look at a range of different post-treatment windows up to 2013, 2014, and 2015. Second, we investigate the impact on subgroups of firms that are more likely to be affected by the reform, including large firms, Chilean-owned firms, and those with affiliates in tax havens. Third, to ensure that we are comparing firms of similar sizes, we show a specification that imposes common support conditions, which ensures that treated and control firms have the same range of pre-treatment average sales and payroll. Fourth, we show a robustness test that scales the outcome by lagged rather than contemporaneous payroll.[35] Finally, we add payments collected as a result of audits to the voluntarily paid corporate income tax.

4 Results

4.1 Chilean Multinationals Make Tax-Motivated Payments to their Affiliates Abroad

We first analyze whether Chilean multinationals engage in tax-motivated payments to foreign affiliates for royalties, services, and interests. Following the empirical approach described in Section 3.2, this intra-firm analysis compares payments of a given firm to affiliates and non-affiliates in the same destination country in the same year.

Table 2 shows that payments to affiliates indeed respond to tax rates in destination countries, while payments to non-affiliates do not. Coefficients for non-affiliates (second row) are small and statistically insignificant (i.e., $\beta_1 \approx 0$), indicating that the results are unlikely to be driven by other confounding factors. In contrast, the first row shows a sizeable and highly significant semi-elasticity for payments to affiliates, compared to non-affiliates (i.e., $\beta_2 < 0$). Column (1) indicates that for total payments, a 1% reduction in the corporate

[35] We use contemporaneous payroll in our main specification for two reasons. First, we cannot scale by lagged payroll in 2007 as our data start that year. Second, lagged payroll yields a smaller—in fact, slightly negative—point estimate for the impact on taxes. Thus, we view the main specification as more conservative.

tax rate of the destination country is associated with an increase in payments of 5.5 to 5.1 log points (significant at the 1% level). We further disentangle this analysis by type of transaction: payments for services, royalties, interests, and other/unclassified. A large part of the effect is driven by royalties and services. This is consistent with the notion that payments for which it is harder to find comparable market prices are more likely to be subject to manipulation.

These results are robust to a number of variations. Panels B and C of Table 2 show that results are similar for different lengths of the post-treatment period. Results are also not sensitive to changes in Chile's tax rate. We show this in Table A2 by replacing the explanatory variable Tax Rate$_{jt}$ in the destination country with the difference between this tax rate and Chile's tax rate. Moreover, results are robust to including firm-affiliation status-year fixed effects in Table A3, country-year fixed effects in Table A4, and firm-destination country fixed effects in Table A5, which absorb the variation in Chile's tax rate. Finally, we also find similar results using IHS in Table A6 and a linear probability model to analyze extensive margin responses in Table A7.

In sum, this section shows that intra-group payments of multinationals respond to tax differentials across countries—particularly for royalties and services. The reform was motivated by the belief that a significant fraction of these payments are due to profit shifting and that tax monitoring would allow the tax authority to curtail this behavior and increase tax revenues.[36]

4.2 Impacts on Intra-Group Payments for Royalties, Services and Interests

Next, we 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 estimate a triple-difference specification following Equation 4, allowing the sensitivity of intra-group payments to destination country tax rates to change after the reform. Figure 2 shows these results. First, in line with the identifying assumption, there is a parallel trend prior to the reform. Second, if the reform was effective at reducing the sensitivity of intra-group payments to destination country tax rates, we would expect the post-treatment

[36] An alternative possibility is that multinationals achieve this adaptation to destination country tax rates by adopting tax planning structures that conform with transfer price regulation. Establishing the legality of specific transactions requires in-depth audits, which are often debated in courts.

coefficients to be positive—resulting in a smaller magnitude of the (negative) semi-elasticity in the post-treatment period. Figure 2 shows that this is not the case for any of the four channels (services, royalties, interests, or other). If anything, most panels show a decrease in the coefficient, indicating an increase in the sensitivity of intra-firm payments to tax differentials, although these differences are in most cases not statistically significant.

Table 3 presents these findings in regression form. The second row shows the semi-elasticity of payments to affiliates in the pre-treatment period and the first row shows the difference of that semi-elasticity in the post-treatment period. Again, we see no reduction of the semi-elasticity (which would be indicated by a positive coefficient) for any of the types of payments, and for all durations of included post-treatment years. If anything, the sensitivity to foreign tax rates is even somewhat larger in the post-treatment period (not statistically significant for most specifications). Appendix Tables A8–A13 show that this is not sensitive to the same robustness checks as above: using tax rate differences between Chile and a given country, inclusion of firm-year-affiliation status fixed effects, destination country-year fixed effects, firm-destination country fixed effects, using an IHS transformation of the outcome variables, and extensive margin specifications.

One way to understand the magnitude of these effects is to compare the change in the sensitivity to the baseline estimate. Panel A, Column (1) of Table 3 shows a baseline semi-elasticity of -0.049. This column also reports an estimated change in the semi-elasticity of -0.013, which has a 95% confidence interval between -0.034, and 0.007. At the highest value of this range, the reform would have decreased this semi-elasticity from $-0.049$to -0.042.[37] 95% confidence intervals reject substantial reductions in this tax sensitivity.

4.3 Impacts on Trade in Goods

We now analyze whether the reform affected unit prices of likely intra-group trade in goods, using customs data matched with information from tax annexes, as described in Section 3.2. Multinationals can shift profits to low-tax countries by over-pricing imports and under-pricing exports. A reduction in profit shifting would therefore imply lower import prices and higher export prices. Figure 3 shows the quarterly evolution of the log of unit prices of imports and exports based on the event study version of Equation 5, comparing prices of a given product in likely intra-group trade by multinationals to those of the same

[37]Similar calculations for other panels yield reductions from -0.047 to -0.033 for 2014, and from -0.045 to -0.034 for 2015.

product in trade by domestic firms. There is no change for either imports or exports after the reform. Estimates for exports are less precise due to sample size.[38] Nevertheless, during the time when the reform took place (2009–2014), the point estimates for exports also remain flat.

Table 4 presents corresponding regression estimates. Columns (1)–(3) show imports and Columns (4)–(6) exports. Results are robust both to varying the number of included post-treatment years and to varying the bandwidth for the definition of transactions that are likely to be intra-group.[39] Again, we find no impact of the reform on the pricing of likely intra-group trade in goods.

4.4 Impacts on Tax Payments

Having found no impact on intra-group payments for any of the different channels—royalties, services, interests, or goods—we now investigate the overall effect on corporate tax payments resulting from all adjustments firms may make. Following Equation 6, this analysis compares tax payments by multinationals to those of domestic but internationally-active firms with otherwise similar characteristics.

The identifying assumption of this estimation is that absent the reform, conditional on our control variables discussed in Section 3.2, the outcome variables would have evolved along a parallel trend. Given that this part of the analysis relies on inter-firm comparisons (rather than intra-firm analysis as is the case for most of the preceding results), we conduct additional auxiliary tests of the plausibility of this assumption. First, we provide a "placebo" test with domestic sales as the outcome variable. Local sales are unlikely to be affected by the reform but may reflect differential responses to other economic shocks (e.g., the recovery from the global financial crisis, the Chilean Earthquake of 2010, or Chile's accession to the OECD). Figure 4 shows this analysis graphically, and Appendix Table A14 in regression form. There are parallel trends in both the pre- and post-treatment periods, which rules out the potential concern that domestic and multinational firms operated on different trends during this time period. A second plausibility test for the parallel trend assumption is the pre-treatment evolution of tax payments. Figure 5 shows these two groups indeed evolved similarly before the reform. These results suggest that multinational and domestic firms

[38] Chile has substantially more importers than exporters, and, correspondingly, fewer multinationals and even fewer domestic firms that export goods compared to those that import.

[39] Appendix Figures A2 and A3 display these robustness checks graphically.

were not differentially affected by other shocks that could confound our results.

Unsurprisingly, given that we found no reduction in profit shifting through any of the channels analyzed above, we also see no significant increase in tax payments by multinationals after the reform. The right-hand side of Figure 5 shows that, contrary to the expectations of the government, the reform seems to have been ineffective at raising additional taxes from multinational corporations. Table 5 presents corresponding regression estimates. The point estimates of the impact on tax/payroll range from -0.00027 to 0.00085, depending on the post-treatment window. None of the estimates are close to statistical significance. In percentage terms from the baseline of 2009, these point estimates range from -0.18% to $+0.58\%$. Results are robust to imposing common support conditions that restrict the sample to domestic and multinational firms with the same range of pre-treatment average sales (Figure A4 and Table A15) or assets (Figure A5 and Table A16) and to scaling the outcome variable by lagged payroll (Figure A6 and Table A17). Finally, we can also analyze whether the conclusion changes when including payments collected from audits.[40] Figure A7 and Column (2) of Table A18 show these results. The outcome changes only marginally and all point estimates remain far from statistically significant.

One advantage of our study is the ability to include estimates both on tax payments and on each of the potential channels through which multinationals shift profits abroad. The results that none of these channels are affected by the reform and that we find no effect on tax payments support the conclusion that the reform did not significantly limit the profit shifting opportunities of Chilean multinationals. Next, we analyze whether this overall conclusion hides important heterogeneities.

Heterogeneity Analysis

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

Figure 6 shows the impact on tax payments for the full sample as in Table 5 (Column 1) and for several subgroups for which one might expect a larger impact. Estimates (2) and (3) look at large vs. medium-size firms separately, as large-size firms might be more likely to have already been compliant with international transfer pricing norms before the reform.

[40] 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.

Estimates (4) and (5) analyze firms separately by whether they usually had positive tax payments pre-treatment. In Chile (as in most countries, including the US) many firms have no taxable profits after all deductions are taken. Such firms may have less need for tax-motivated transfers to further reduce reported profits. However, we also find no impact on multinationals that regularly had positive corporate income tax payments before the reform.

Another group of interest is multinationals with affiliates in tax havens. These firms may have been more aggressive in their tax planning behavior prior to the reform or may be more sophisticated in such planning. Estimate (6) compares multinationals with payments to tax havens with domestic firms, while estimate (7) does so for multinationals without such payments. The point estimates of both these groups are very similar to each other and again close to zero. Next, we analyze the impacts on tax payments separately for Chilean-owned multinationals (8) and Chilean subsidiaries of foreign-owned multinationals (9). One might expect foreign multinationals—most of which have their headquarters in countries that had already introduced the OECD standards before Chile did—to respond less to the reform. However, this does not seem to be the case.

Finally, estimates (10), (11), and (12) look at subgroups of multinationals based on when they revealed their multinational status to the tax authority. Estimate (10) includes firms that reported their multinational status prior to the reform, (11) those that revealed it only after the reform, and (12) those who never revealed their status in the tax forms during our study period, but whom we identified as multinationals based on data from Dun & Bradstreet and Orbis. Overall, Figure 6 shows that the null effect is quite general across many subgroups and not the result of hidden firm heterogeneity. For robustness, Appendix Figures A8 and A9 show the same analyses including the post-treatment period up to 2014 and 2015, respectively, with very similar results.

Taken together, the findings from the administrative tax and customs data show that the reform did not achieve its goal of reducing tax-motivated payments of multinational firms to their foreign affiliates and did not significantly increase tax payments. In the face of these results, which surprised both the tax authority and the research team, we reached out to transfer pricing experts who had personally experienced the time of the reform—be it as head of taxation within multinational firms, as tax consultants, or as officers of the tax authority. Through in-depth qualitative interviews, we hoped to learn more about potential reasons for this lack of impact. In this process, we discovered the important role that the

tax advisory industry played. We discuss these findings in the next section.

5 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 evasion opportunities, but in doing so, it 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. In 2014, we conducted in-person interviews with senior transfer pricing consultants in the Chilean branches of three of the Big Four consulting firms. In 2021–2022, after the implementation of much of the quantitative empirical analysis, we conducted video interviews with a wider range of specialists: transfer pricing experts in each of the Big Four as well as in smaller consulting firms and senior tax employees of multinationals. Section 3 and Appendix C provide information on the methodological approach.

Our qualitative interviews yield six valuable insights:

1. The reform was a large boon to the tax advisory industry, increasing the number of experts working in transfer-pricing consulting twelve-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, and the marginal cost of such planning was lower, once the fixed costs of organizing the books for compliance had been paid.
4. The supply response was very elastic because the advisory industry was able to respond quickly to this demand shock by reallocating international experts to Chile and then training the next generation of local advisors.
5. An important 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 recurring pattern of revolving doors cycling transfer pricing experts between the two sectors. Consulting firms see additional enforcement actions by the government as a business opportunity, showing 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). These quotes are translated from Spanish and follow the colloquial style of the oral responses. Additional quotes can be found in Appendix C.

Growth in the Tax Advisory Industry

All interviewees mentioned that the transfer pricing reform represented a tremendous growth opportunity for the tax advisory market. To quantify these effects, we asked senior transfer-pricing consultants in each of the Big Four consulting firms how many consultants were employed in their unit prior to the reform (2010) and after (2014). Figure 7 shows the responses. Each of the four companies had two people working in that department before the reform and then expanded rapidly. This led to a 12-fold increase from 8 to 95 transfer pricing consultants across the four companies. As one expert working for a big consulting firm explained: *"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."* Each of the participants in the 2014 phase of interviews had personally experienced a promotion, going from working with one colleague in a small unit to being the head of an important group within the company. One 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."*

The interviews also revealed that this growth in consulting services for transfer pricing was the result of three factors: a strong increase in the demand for compliance support, the complementarity of compliance support with tax planning services, and a very elastic supply of specialized consultants due to the international nature of this market. We now discuss

these in turn.

Demand for Compliance Support

Both consultants and representatives of multinationals stated that most firms initially sought out the consulting firms because it was difficult to comply with the new reporting requirements without specialized assistance. One 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."*

Many interviewees pointed out that, first and foremost, compliance with the new norms required many firms to reorganize their internal bookkeeping and recording of intra-group transactions. As one expert stated: *"Overall, there was a gigantic change in taxation. Now firms are much more orderly and organized."* Firms formalized their transactions with foreign affiliates much more rigorously. Consultants helped them in this process, including by providing information on how to calculate prices and how to attribute costs of different service functions (such as HR, management, branding, and accounting) to the different affiliates. The consultants had prior experience based on jurisprudence and best practices from other countries and other firms.[41] Given the uncertainty of these new filings, top consulting firms also gave clients more confidence that filings would be "audit-proof." This confidence was bolstered by the use of transfer pricing studies that justify why a certain price is adequate for a given transaction.[42]

The implementation of the new requirements put a heavy burden on companies. One company representative stated: *"You spend the same on the preparation of documentation for transfer pricing as on the entire corporate income tax declaration."* Asked why multinationals did not acquire this expertise themselves in-house, firm representatives stated that on the one hand, Big Four consultants always had the most up-to-date information on the continuously

[41] 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."*

[42] According to one senior consultant: *"If firms get surprised by the tax authority and have not prepared how they organize and manage their pricing beforehand, it's sometimes hard to justify ex-post. But if we can plan ex-ante what the justifications are, it's not a problem."* And another consultant stated: *"Companies usually contract one of the Big Four to do the price study for them."* 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."*

evolving best practices and regulations, and on the other, it would be too expensive to hire such qualified senior experts full time, due to their scarcity and corresponding costs.[43]

Complementarity of Compliance Support and Tax Planning Services

Interviewees explained that transfer pricing advisors offered two broad categories of services: i) compliance support to help firms comply with the new legislation and ii) tax planning, which requires advisors to undertake more involved analyses to design transfer pricing strategies with tax savings potential, suggesting new strategies for their clients.

While clients initially approached consultants for compliance services, consultants often tried to up-sell them on tax planning, indicating to firms that they were not always operating in optimal ways and that consultants could support them in implementing more "tax efficient" strategies. In this context, one former Big Four consultant (who subsequently moved as an in-house expert of a multinational firm) 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."*[44] Highlighting this new source of growth, another consultant who moved from abroad to a Big Four in Chile following the reform stated even more directly: *"In 2012, I came as an evangelizer, knocking on doors."*

Because the reform made firms incur the fixed cost of organizing their internal documentation and learning the transfer pricing rules, the new regulations lowered the marginal cost of tax planning. As a result, management's demand for the strategic opportunity provided by transfer pricing increased. An in-house tax expert of a multinational described the process as follows: *"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. 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. Before,*

[43] A Big Four consultant noted that: *"It's hard to hire in this area. There are not enough experts with enough experience. 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."* Similarly, 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."*

[44] 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."*

we charged things the same to all branches. It was terrible; it meant fiscal inefficiency."[45]

Overall, due to both the up-selling efforts by consultants and the increased know-how by management, many multinationals eventually moved from a focus on getting external support for compliance to more in-depth tax planning.

Supply Response

The rapid expansion of this industry was possible due to the elastic supply of transfer pricing experts from multinational consulting firms abroad. Interviewees shared that a substantial number of consultants who previously worked at Big Four subsidiaries in other countries—such as Argentina, Colombia, Peru, Spain, or Venezuela—moved to a Big Four in Chile around 2012 to meet this increased demand. As one consultant explained, *"At the beginning, all the tax planning experts were foreigners in the Big Four. We brought in the seniors from abroad, Argentina, Venezuela, and Colombia, and then recruited assistants who were Chilean. Today [2021] about 40% of the senior transfer pricing experts are Chileans."*

Since 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. In particular, since they knew how to ensure that intra-group transactions complied with OECD guidelines, they could avoid raising red flags with the tax authority. One senior consultant shared that *"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."*

After the initial import of foreign experts, the industry was able to grow by hiring more junior team members locally, who were then trained in how to conduct transfer pricing studies as well as sophisticated transfer pricing strategies. Some newly trained local experts went on to start their own boutique consulting firms, catering to smaller client firms.[46]

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 turned out to be testable with

[45]This same in-house tax expert also shared that the consultants helped spur this change of perspective. *"The reform itself was the beginning. But then, the arrival of these people with a vision that was much more aligned with the OECD accelerated the process. It strengthened the knowledge of these matters in Chile a lot. Before, it was something very specific that nobody talked about. The reform produced this. Not sure this was the intention."*

[46]A senior tax expert who came from a Big Four in Argentina stated: *"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."*

our administrative data. Consultants frequently recommended consolidation of cost centers, especially for services such as human resources or marketing, in fewer—optimally chosen—countries. 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 consultant 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."*

We analyzed with the administrative data whether there was indeed a reduction in the number of countries to which multinationals made payments to affiliates following the reform. Figure 8 shows that this was the case. Table 6 analyses this evolution in more detail. While there is a highly significant decrease in the number of cost centers in non-tax havens (Column 3), there is no such change in tax havens (Column 2). We can also test the statement of the tax advisors that this consolidation was mostly focused on services, and we find that, indeed the largest reduction was in services, followed by other/unclassified payments.

Fighting a Losing Battle

Many of our interviewees also described that the tax authority is outmatched both in terms of the number of staff and in terms of 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 to 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. Therefore, the tax authorities are lacking tools for enforcement, both in quality and quality of their staff."* Another added that *"In Chile, the tax authority has a decent salary, but working at a Big Four, you can earn brutally high amounts. So the best experts are in the private sector."*

This mismatch is accompanied by a dynamic of revolving doors, with frequent moves of transfer pricing specialists between consulting companies, the tax authority, and in-house advisor positions within multinationals.[47] As a prime example of this phenomenon, one of

[47]The phenomenon of revolving doors and its impacts has been widely studied in other contexts, for

the interviewees stated that *"The guy who wrote the regulation for Chilean transfer-pricing reform was subsequently hired for a very high salary by a Big Four."* Another consultant 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. *"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."*

At the same time, internal knowledge from the tax authority is also of value to the private sector. One of the interviewees stated: *"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."* However, it can also be risky for former bureaucrats without consulting experience to move to a Big Four. As one consultant from a Big Four put it: *"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."*

This pattern of revolving doors is not unique to Chile. The transfer pricing setting is particularly vulnerable to this dynamic because there is a small number of experts with specialized knowledge. Moreover, this specialized knowledge is critical in all aspects of transfer pricing: for writing transfer pricing regulations (in the OECD or in tax authorities), for helping firms comply with or circumvent such regulations (in consulting firms or in multinationals), and for auditing and monitoring firms' compliance (in the tax authority). For this reason, there are similar dynamics in other countries. Notably, Pascal Saint-Amans, who was the OECD's Director for Tax Policy and who played a leading role in the BEPS project and other international tax policy negotiations, recently moved to a business consulting firm (Brunswick Group, 2023).

A related report from the British Parliament (Public Accounts Committee, 2013) also describes this dynamic and the large mismatch in resources between tax authorities and consulting firms:

> HM Revenue & Customs (HMRC) appears to be fighting a battle it cannot win in

example, in legislative and regulatory lobbying in the US (Blanes i Vidal et al., 2012; Lucca et al., 2014; McCrain, 2018; d'Este et al., 2020; Strickland, 2020).

> 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. The four firms employ nearly 9,000 people and earn £2 billion from their tax work in the UK, and earn around $25 billion from this work globally. 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.

A central question for the usefulness of transfer pricing reforms is whether they can be made more effective by empowering tax authorities with higher budgets to hire more specialists and conduct more audits. On the one hand, several consultants said this would be a good idea. As one stated, *"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, such an increase in enforcement power would not be met without a response from the private sector and would likely further fuel the race between tax enforcement and tax planning. As one Big Four 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."*

6 Conclusion

Our paper provides evidence of the effectiveness of a prominent tax monitoring reform, using rich administrative data on tax collections, intra-group payments, and international trade prices. 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.

Multinational firms 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, interests, and services with respect to changes in the destination country tax rates, and no effect on unit prices in intra-group trade of goods. Consistent with these results, we find no significant increase in tax revenue. This holds true for different subgroups of multinationals, such as those with affiliates in tax havens, Chilean- and foreign-owned ones, etc.

In-depth interviews with transfer pricing experts in consulting and in multinational firms suggest that while the reform did not increase tax payments, it did have a large effect on the tax advisory industry. The reform led to a twelve-fold increase in the number of transfer pricing experts working at Big Four consulting firms in Chile. This growth was possible, in part, because consulting firms brought in experts on similar regulations from other countries. When multinationals approach tax consultants 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. Turning back to the administrative data, we indeed find such an effect: There is a sizeable reduction in the number of countries with affiliates to which multinationals make payments, particularly for services. Methodologically, our paper illustrates how combining administrative data analysis with systematic qualitative interviews can be fruitful in understanding the impacts of public 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 shows 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-planning 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 tax-planning 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 (for instance, because they have no economic substance). Studying the optimal policy response and the mediating role of the tax-planning industry in how policies turn into practice is a fruitful avenue for future research.

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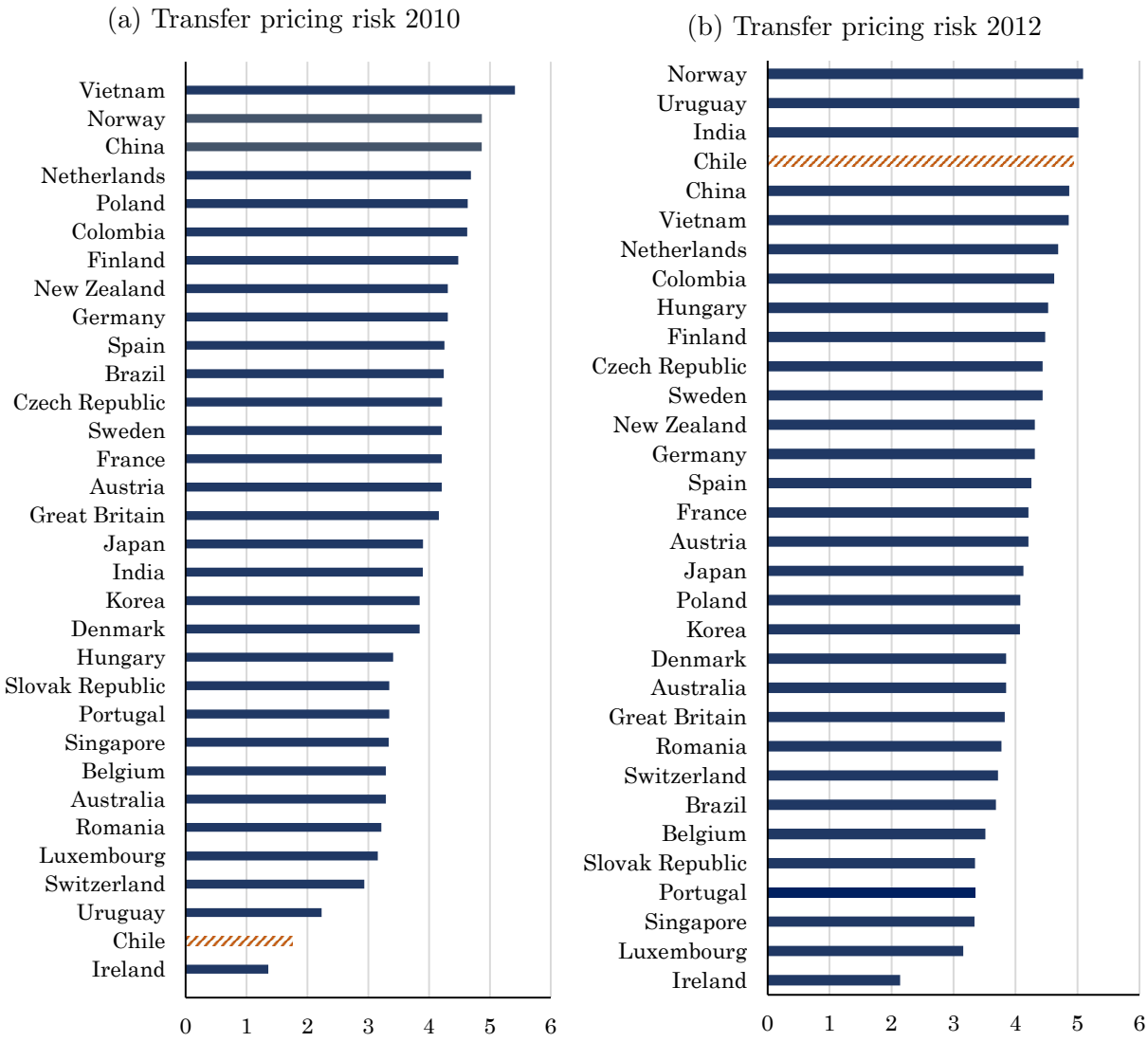
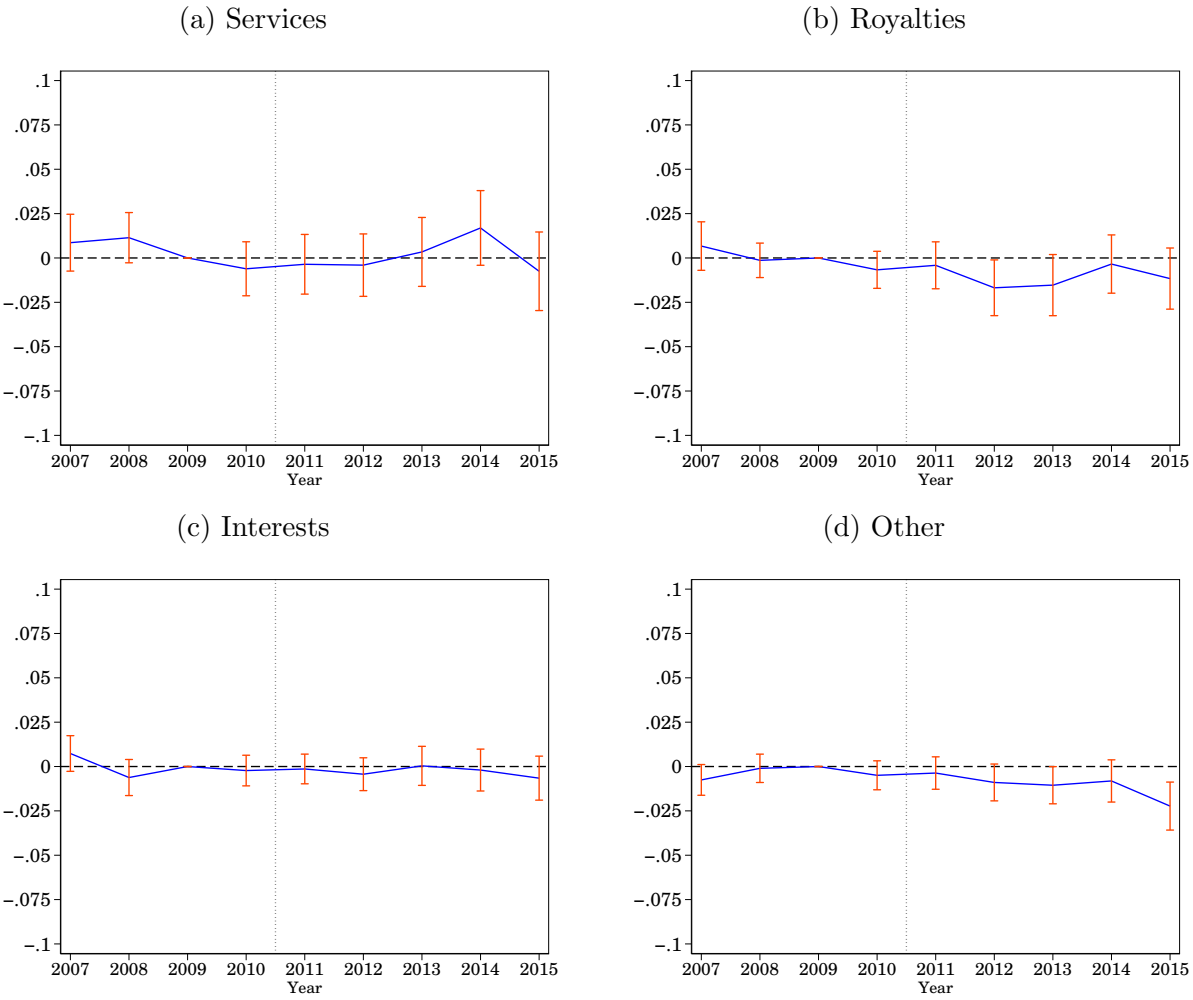
Figure 1: Strictness of Transfer Pricing Enforcement Before and After the Reform



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.

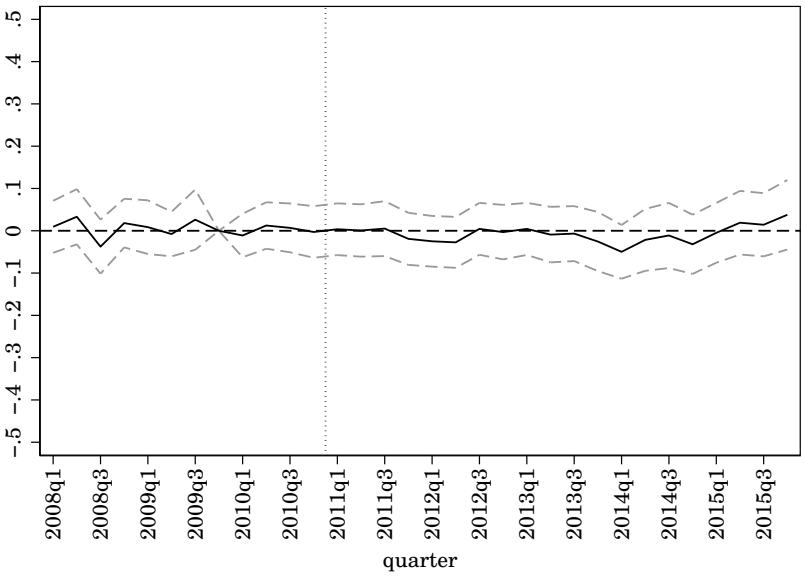
Figure 2: Impact of the Reform on the Sensitivity of International Payments to Changes in the Destination Country Tax Rates



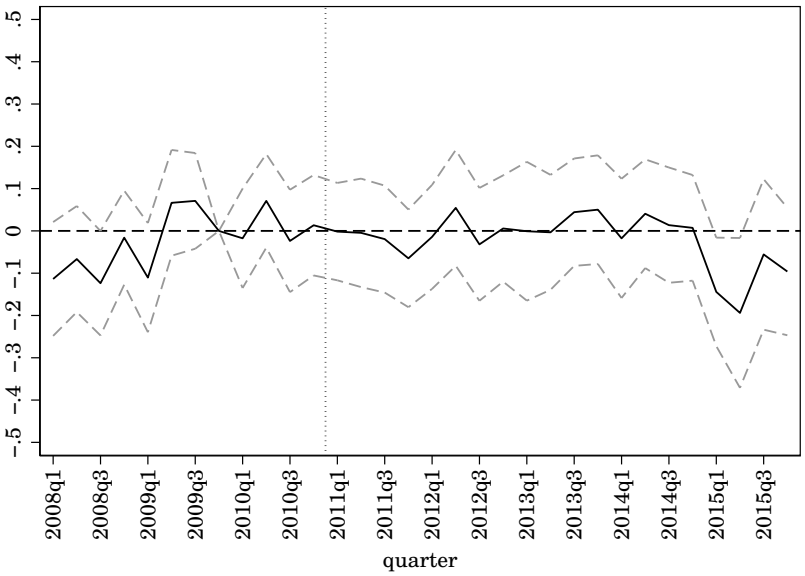
Notes: These figures show the evolution of the semi-elasticity of international payments with respect to changes in destination country tax rates for payments to affiliates compared to payments to non-affiliates, following the event study specification of Equation 4. A negative semi-elasticity implies 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. It includes firm-year, firm-affiliate, 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. Vertical bars represent 90% confidence intervals. Table 3 shows the same analysis in regression form.

Figure 3: Impact of the Reform on Unit Prices of Imports and Exports

(a) Impact on Unit Prices of Imports

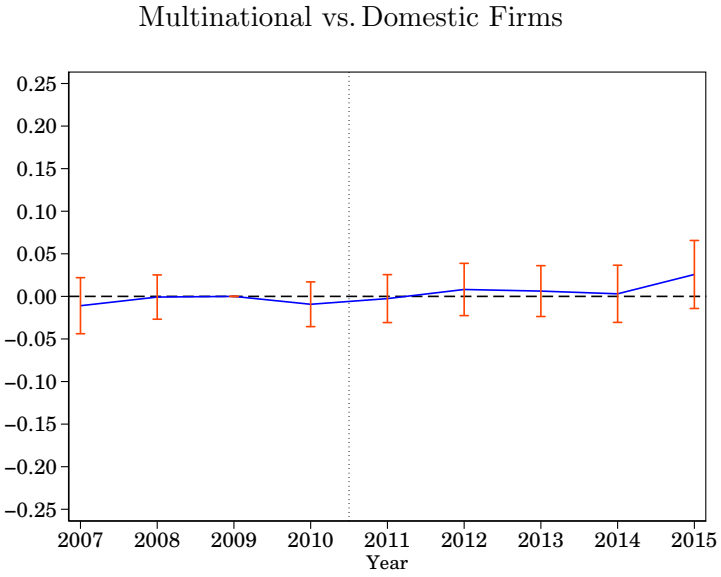


(b) Impact on Unit Prices of Exports



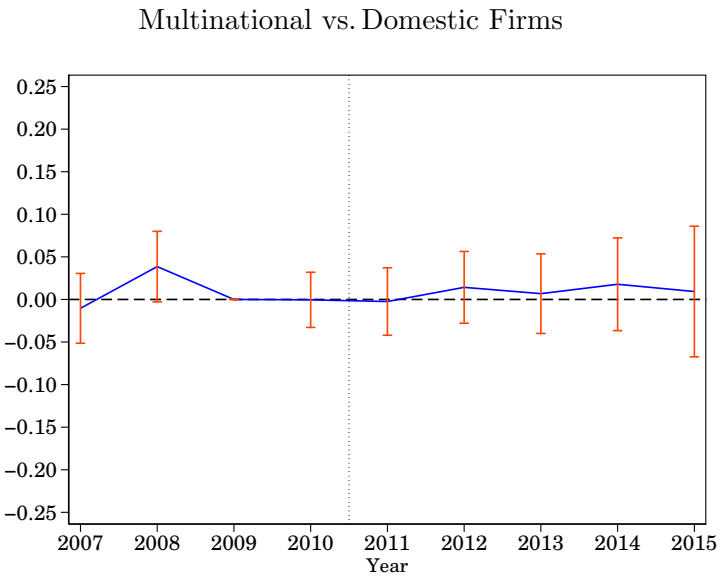
Notes: These figures show the evolution of the log of unit prices of multinational firms' likely intra-group trade compared to domestic firms' trade of the same product, controlling for firm and product-quarter fixed effects, based on the event-study specification of Equation 5. The dotted vertical line indicates the start of the reform. 2009 q4 is normalized to zero, and 2010 serves as a placebo year. Likely intra-group trade (imports or exports) are defined as those in 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 trade data, respectively (see Section 3.2 for details). Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Columns (1) and (4) of Table 4 show the same analysis in regression form. Figures A2 and A3 show robustness using different bandwidths for the definition of likely intra-group trade for imports and exports, respectively.

Figure 4: Placebo Outcome: Impact of the Reform on Domestic Sales



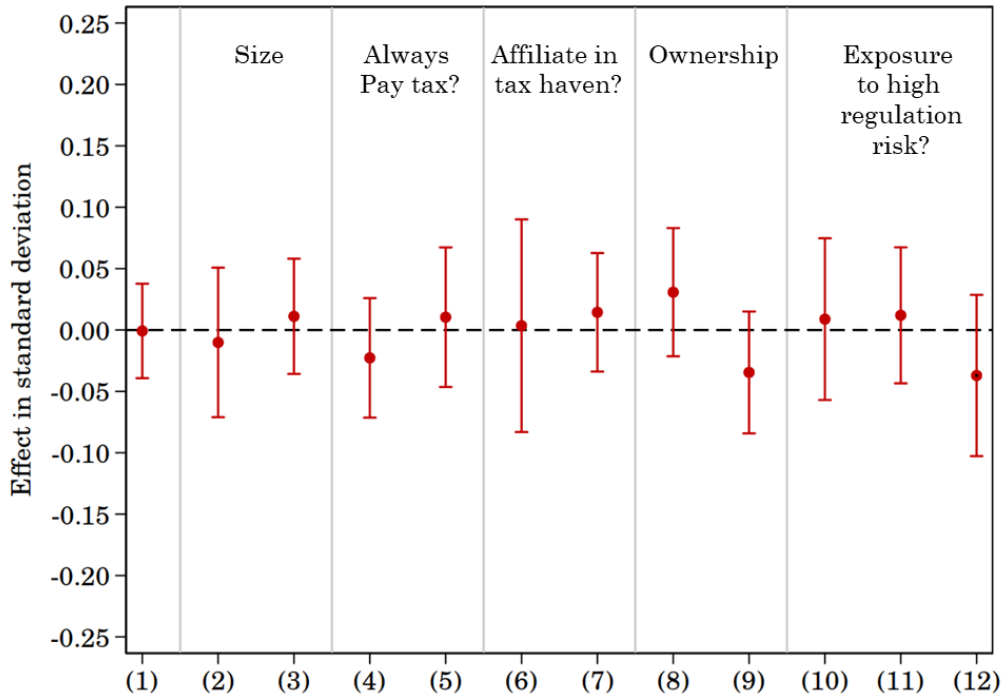
Notes: This figure shows the placebo test for impact estimates of the reform on domestic sales/payroll, expressed in standard deviations, following the event study specification of Equation 6, which compares multinationals to internationally active domestic firms. The dotted vertical line indicates the 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 99th percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Table A14 shows the same analysis in regression form. For robustness, Panel (b) of Figures A4 and A5 show results restricting the sample for common support in pre-treatment average sales and assets, respectively, and Panel (b) of Figure A6 scales by lagged payroll.

Figure 5: Impact of the Reform on Corporate Income Tax



Notes: This figure shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following the event study specification of Equation 6, 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$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Table 5 shows the same analysis in regression form. For robustness, Panel (a) of Figures A4 and A5 show results restricting the sample for common support in pre-treatment average sales and assets, respectively, and Panel (a) of Figure A6 scales by lagged payroll. Figure A7 includes tax payments resulting from audits.

Figure 6: Impact of the Reform on Corporate Income Tax: Subgroup Analysis

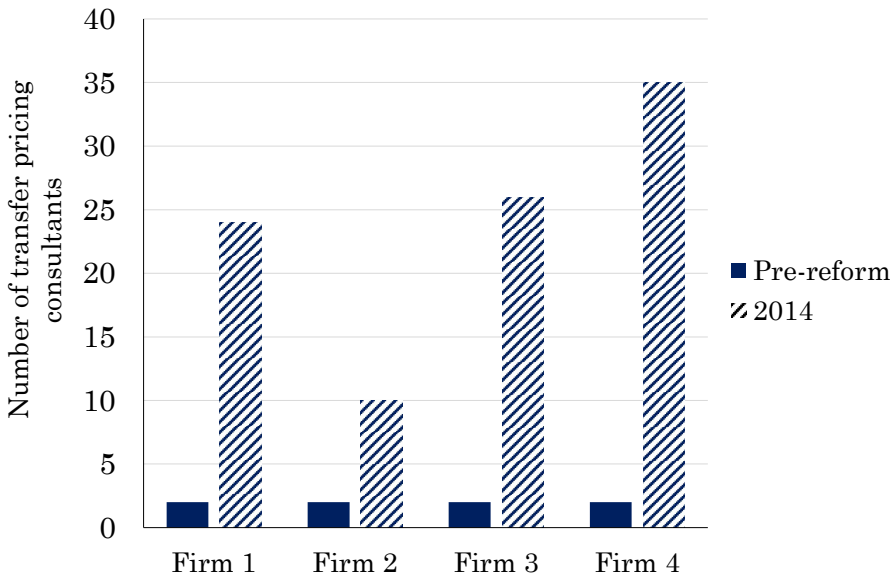


(1) All
(2) Large
(3) Medium
(4) Regularly paid taxes > 0 in the pre-treatment period
(5) Paid no tax multiple years in the pre-treatment period

(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

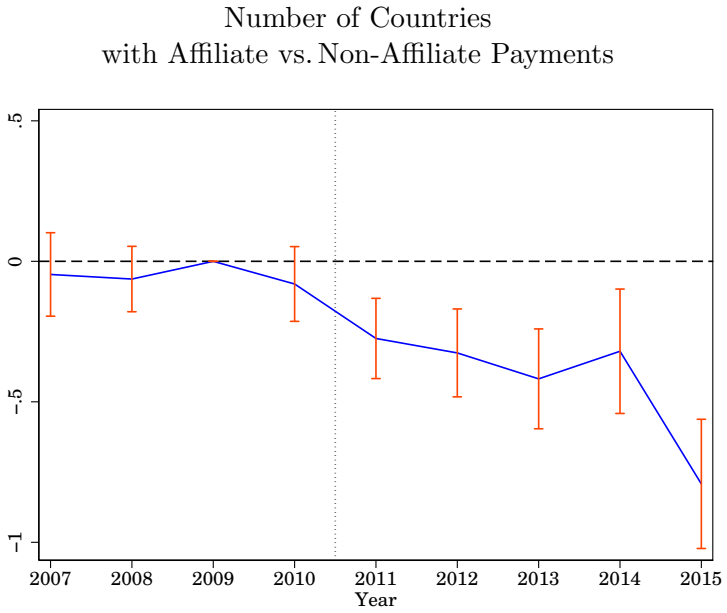
Notes: This figure shows point estimates of the impact of the reform on corporate income tax/payroll, expressed in standard deviation, following Equation 6, which compares multinationals to internationally active domestic firms. Column (1) shows the estimate for the full sample (as in Table 5). Estimates 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 external sources, as described in Section 4.4. This figure shows estimates up to 2013. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Figures A8 and A9 show the same up to 2014 and 2015, respectively.

Figure 7: Number of Transfer Pricing Consultants
in Big Four Consulting Firms in Chile



Notes: Data obtained from interviews with representatives from the Big Four consulting firms in Chile.

Figure 8: Impact of the Reform on the Consolidation of Cost Centers



Notes: This figure shows impact estimates 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. The estimation only includes multinational firms and controls for firm, year, and firm-year fixed effects. The dotted vertical line 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. Vertical bars represent 90% confidence intervals. Table 6 shows the same analysis with more details on heterogeneous treatment effects in regression form.

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]
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]
Royalties	95	435
	(278)	(1,673)
	[0]	[0]
Interests	30	512
	(356)	(4,669)
	[0]	[0]
Services	57	330
	(191)	(1,065)
	[1]	[6]
Other	16	169
	(200)	(2,038)
	[0]	[0]
Number of firms	283	1,136

Notes: This table shows means, standard deviations (in parentheses), and medians [in brackets] for 2010, the last year before the start of the reform. Panel A shows data from corporate income tax filings and Panel B data from mandatory filings of tax annexes. Variables are in thousands of USD. All variables winsorized at the 99^{th} percentile of non-zero values. Total international payments are computed as the sum of its winsorized components. Our study sample includes firms that were at least medium size and internationally active as defined in Section 3.1. The number of firms in Panel B is smaller since it only includes firms that reported international payments on their tax annexes in 2010.

Table 2: Sensitivity of International Payments
to Changes in the Destination Country Tax Rate

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in destination country tax rates, following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. Tables A2, A3, A4, A5, A6, and A7 show robustness checks by replacing the explanatory variable Tax Rate_{jt} in the destination country with the difference between this tax rate and Chile's tax rate, controlling for firm-year-affiliation status fixed effects, destination country-year fixed effects, firm-destination country fixed effects, IHS transformation of outcome variables, and extensive margin, respectively.

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

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.010	-0.009	-0.003	-0.002	-0.007**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 shows impact estimates of the reform on the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure 2. Tables A8, A9, A10, A11, A12, and A13 show robustness checks by replacing the explanatory variable Tax Rate$_{jt}$ in the destination country with the difference between this tax rate and Chile's tax rate, controlling for firm-year-affiliation status fixed effects, destination country-year fixed effects, firm-destination country fixed effects, IHS transformation of outcome variables, and extensive margin, respectively.

Table 4: Impact of the Reform on Unit Prices of Imports and Exports
Difference-in-Differences Estimates

	Imports			Exports		
	(1) 80% to 120%	(2) 90% to 110%	(3) 95% to 105%	(4) 80% to 120%	(5) 90% to 110%	(6) 95% to 105%
Panel A: Up to 2013						
Post × multinational	-0.013	0.010	0.012	-0.006	0.012	0.036
	(0.017)	(0.020)	(0.026)	(0.039)	(0.049)	(0.048)
Observations	999,485	948,294	891,709	92,817	83,927	67,822
Panel B: Up to 2014						
Post × multinational	-0.017	0.008	0.007	-0.003	0.019	0.045
	(0.019)	(0.021)	(0.029)	(0.039)	(0.047)	(0.048)
Observations	1,212,606	1,150,871	1,081,662	110,951	100,407	81,520
Panel C: Up to 2015						
Post × multinational	-0.011	0.019	0.015	-0.021	0.001	0.023
	(0.020)	(0.023)	(0.030)	(0.040)	(0.048)	(0.050)
Observations	1,420,110	1,348,004	1,266,980	128,065	115,820	94,272
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Product × quarter FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows impact estimates of the reform on log of unit prices of multinational firms' likely intra-group trade compared to domestic firms' price of the same product in the same quarter, following Equation 5. In Columns (1) and (4), likely intra-group trade (imports or exports) are defined as those in firm-country combinations for which the amount of intra-group trade in the tax data is between 80% and 120% of either imports or exports in the trade data (see Section 3.2 for details). Columns (2), (3), (5) and (6) use narrower bandwidths for the definition of these samples. *Post* is a dummy equal to 1 from 2011 onward. *Multinational* is a dummy equal to 1 for multinational firms. The sample starts in 2009 (due to imbalances in 2007-2008) and ends in the last quarter of the year shown in the respective panels. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. Columns (1) and (4) correspond to Figure 3, Columns (2) and (3) to Figure A2 and Columns (5) and (6) to Figure A3.

Table 5: Impact of the Reform on Tax Payments

	(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 6, 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 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure 5. For robustness, Tables A15 and A16 show results restricting the sample for common support in pre-treatment average sales and assets, respectively, and Table A17 scales the outcome by lagged payroll. Table A18 shows the same results, but including tax payments resulting from audits.

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

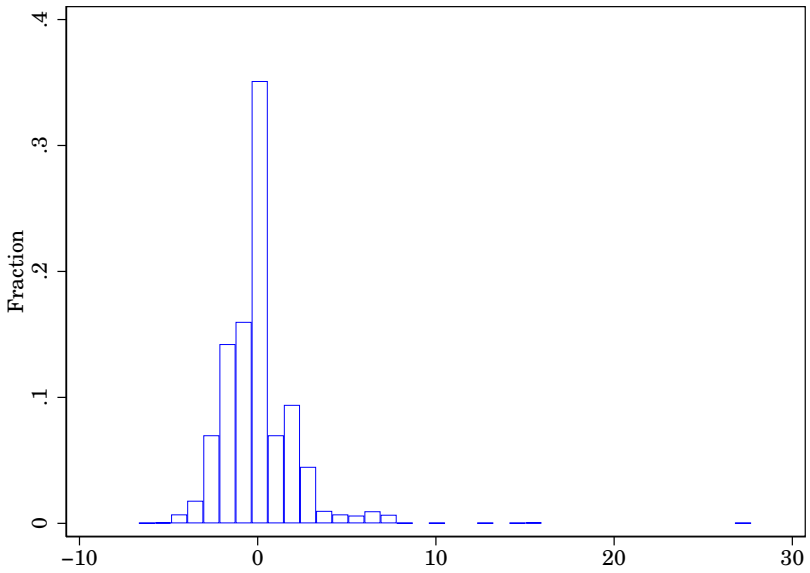
	(1) All	(2) Tax havens	(3) Non tax havens	(4) Royalties	(5) Interests	(6) Services	(7) Other
Panel A: Up to 2013							
Post × affiliate	-0.292***	-0.001	-0.291***	-0.029	0.008	-0.179***	-0.051***
	(0.074)	(0.008)	(0.071)	(0.036)	(0.014)	(0.052)	(0.019)
Affiliate	-0.687***	-0.022**	-0.665***	-0.182***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

Notes: This table shows impact estimates using an event study specification that compares the number of countries to which firms make payments to affiliates to the number of countries in which they make payments to non-affiliates. 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, interests, services, and other payments, respectively. *Post* is a dummy equal to 1 from 2011 onward. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Data start in 2007. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure 8.

Appendices (For Online Publication Only)

A Additional Figures & Tables

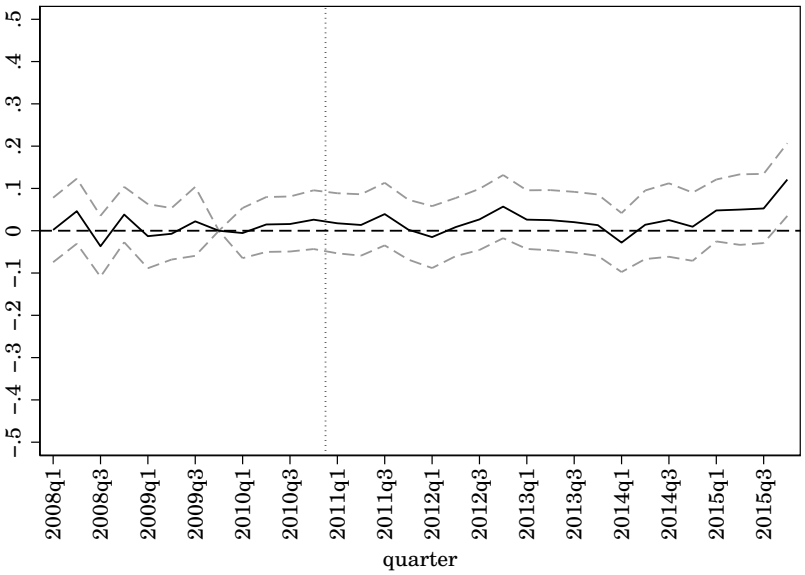
Figure A1: Histogram of the Difference of Tax Rate Residuals between 2007 and 2015 Firm-Country Level



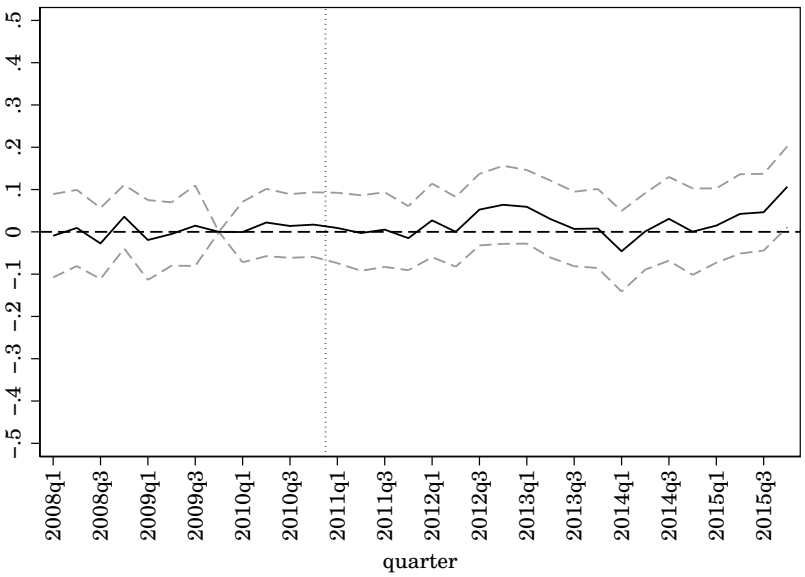
Notes: This histogram illustrates the over-time variation in statutory corporate tax rates leveraged in Equation 3. Observations are at the level of firm-year-affiliation status-country, i.e., payments by firm i in year t to an affiliate or a non-affiliate in country j. Destination country tax rates are regressed on firm-year fixed effects to obtain residualized tax rates. The histogram plots the magnitude of the changes in these residuals from 2007 to 2015, showing considerable variation in tax incentives across multinationals.

Figure A2: Impact of the Reform on Unit Prices of Imports
Robustness Check: Country-Firm Pairs with Different Intra-Group Import Shares

(a) Sample: Country-firm pairs with an intra-group trade share between 90% and 110%



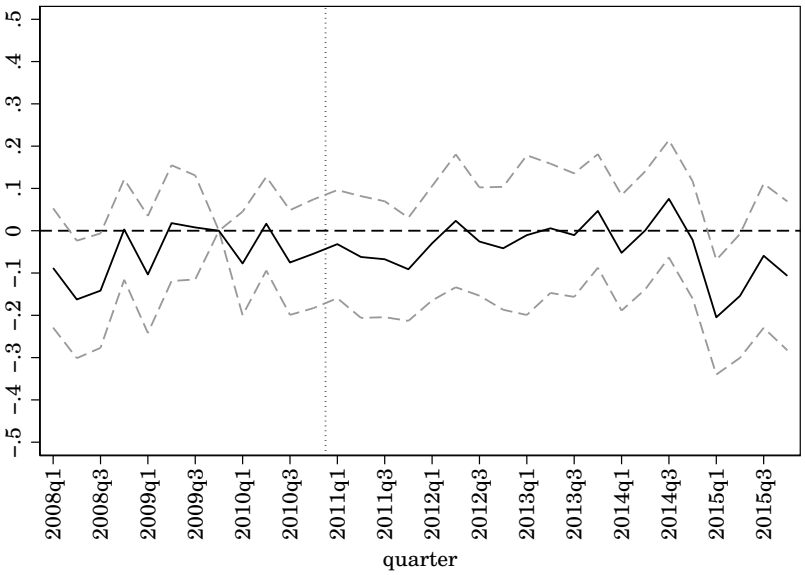
(b) Sample: Country-firm pairs with an intra-group trade share between 95% and 105%



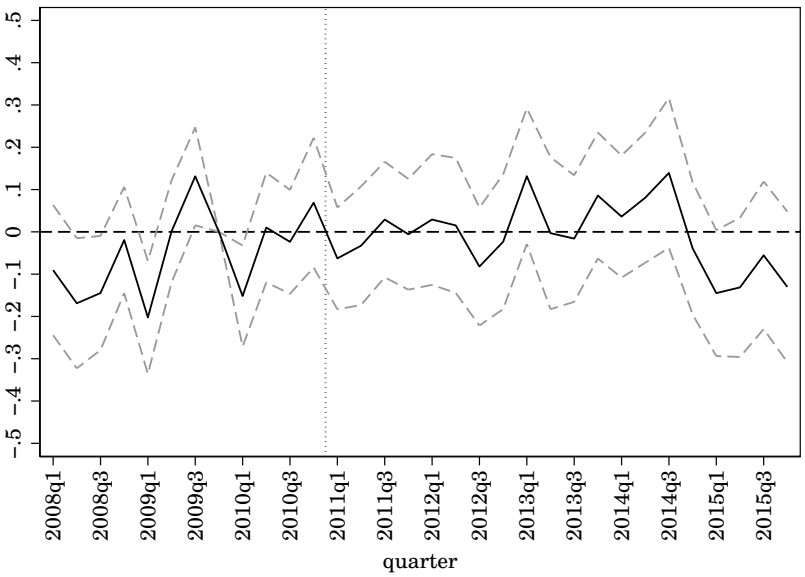
Notes: These figures examine the robustness of Figure 3 Panel (a) by considering different bandwidths for the definition of likely intra-group imports. They show the evolution of log of unit prices of multinational firms' likely intra-group imports compared to domestic firms' trade of the same product, controlling for firm and product-quarter fixed effects, based on the event-study specification of Equation 5. The dotted vertical line indicates the start of the reform. 2009 q4 is normalized to zero, 2010 serves as a placebo year. Likely intra-group trade (imports or exports) are defined as those in firm-country combinations for which the amount of intra-group trade in the tax data is between 90% and 110% and 95% and 105% of imports in the trade data, respectively (see Section 3.2 for details). Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 4 Column (2) and (3) show the same analysis in regression form.

Figure A3: Impact of the Reform on Unit Prices of Exports
Robustness Check: Country-Firm Pairs with Different Intra-Group Export Shares

(a) Sample: Country-firm pairs with an intra-firm trade share between 90% and 110%



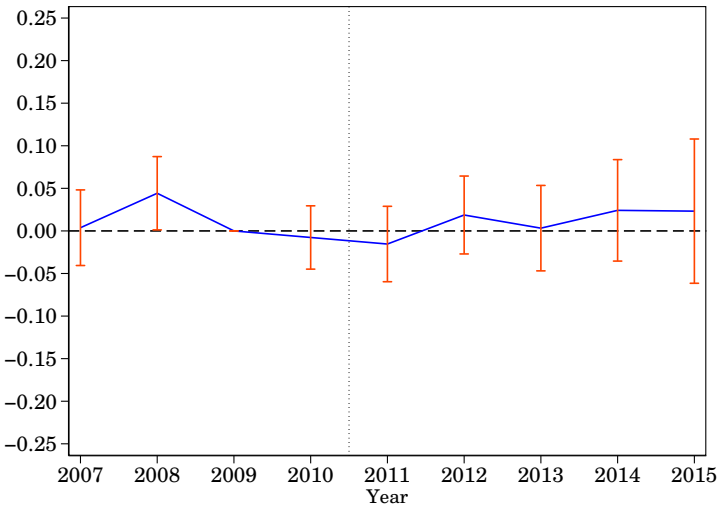
(b) Sample: Country-firm pairs with an intra-firm trade share between 95% and 105%



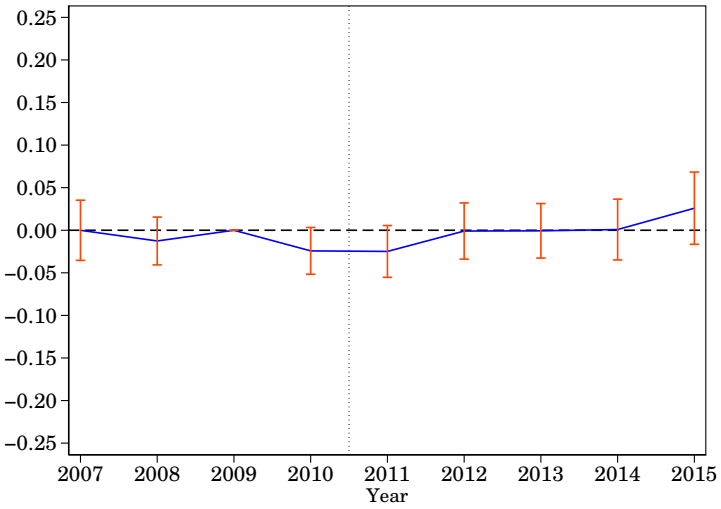
Notes: These figures examine the robustness of Figure 3 Panel (b), by considering different bandwidths for the definition of likely intra-group exports. These show the evolution of the log of unit prices of multinational firms' likely intra-group exports compared to domestic firms' trade of the same product, controlling for firm and product-quarter fixed effects, based on the event-study specification of Equation 5. The dotted vertical line indicates the start of the reform. 2009 q4 is normalized to zero, and 2010 serves as a placebo year. Likely intra-group exports are defined as those in firm-country combinations for which the amount of intra-group exports in the tax data is between 90% and 110% and 95% and 105% of the amount exports in the trade data (see Section 3.2 for details). Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. Dashed lines represent 90% confidence intervals. Table 4 Columns (2) and (3) show the same analysis in regression form.

Figure A4: 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 Tax Payments



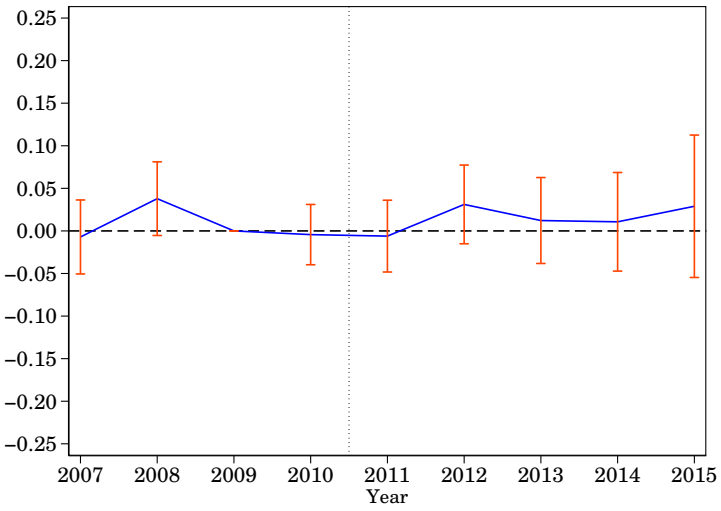
(b) Impact on Domestic Sales



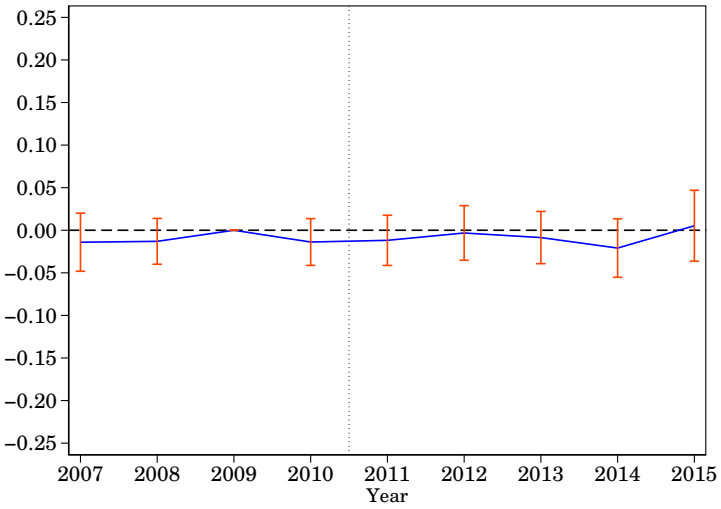
Notes: These figures examine the robustness of Figures 5 and 4, restricting the sample for common support in pre-treatment average sales. They show impact estimates of the reform on corporate income tax/payroll and the placebo test for impact estimates of the reform on domestic sales/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 6, 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^{th} percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Table A15 shows the same analysis in regression form.

Figure A5: 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 Tax Payments



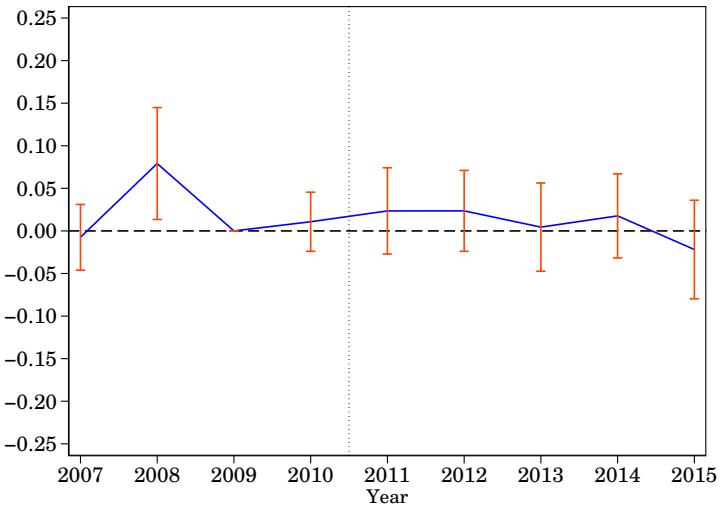
(b) Impact on Domestic Sales



Notes: These figures examine the robustness of Figures 5 and 4, restricting the sample for common support in pre-treatment average assets. They show impact estimates of the reform on corporate income tax/payroll and the placebo test for impact estimates of the reform on domestic sales/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 6, 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^{th} percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Table A16 shows the same analysis in regression form.

Figure A6: Impact of the Reform on Corporate Income Tax
and Placebo Test on Domestic Sales
Robustness Check III: Scaling by Lagged Payroll

(a) Impact on Tax Payments

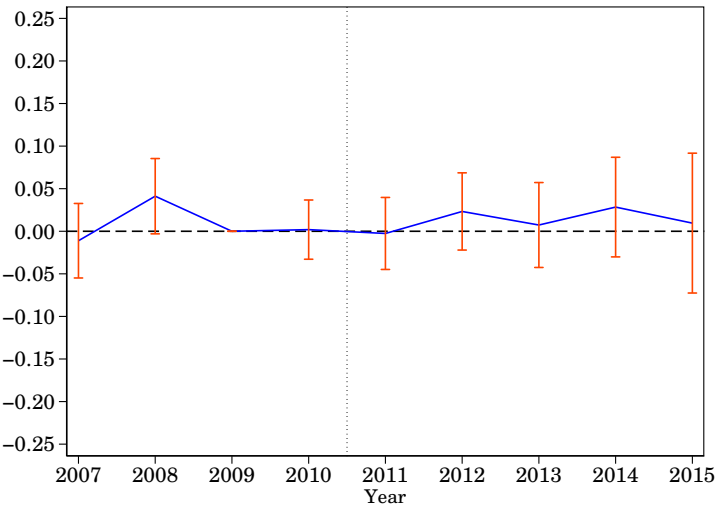


(b) Impact on Domestic Sales

Notes: These figures examine the robustness of Figures 5 and 4, scaling the outcomes by lagged payroll. They show impact estimates of the reform on corporate income tax/payroll and the placebo test for impact estimates of the reform on domestic sales/payroll, respectively, expressed in standard deviations, following the event study specification of Equation 6, 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. Vertical bars represent 90% confidence intervals. Table A17 shows the same analysis in regression form.

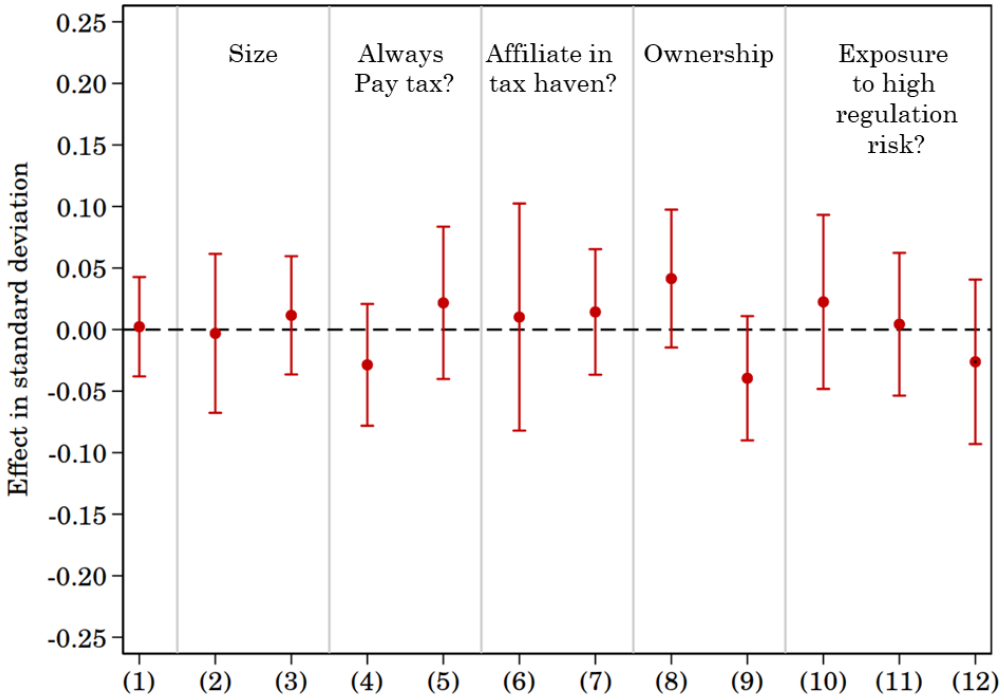
Figure A7: Impact of the Reform on Corporate Income Tax, Including Audits

Multinational vs. Domestic Firms



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 6, 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$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals. Table A18 shows the same analysis in regression form.

Figure A8: Impact of the Reform on Corporate Income Tax: Subgroup Analysis
Robustness Check I: 2007-2014

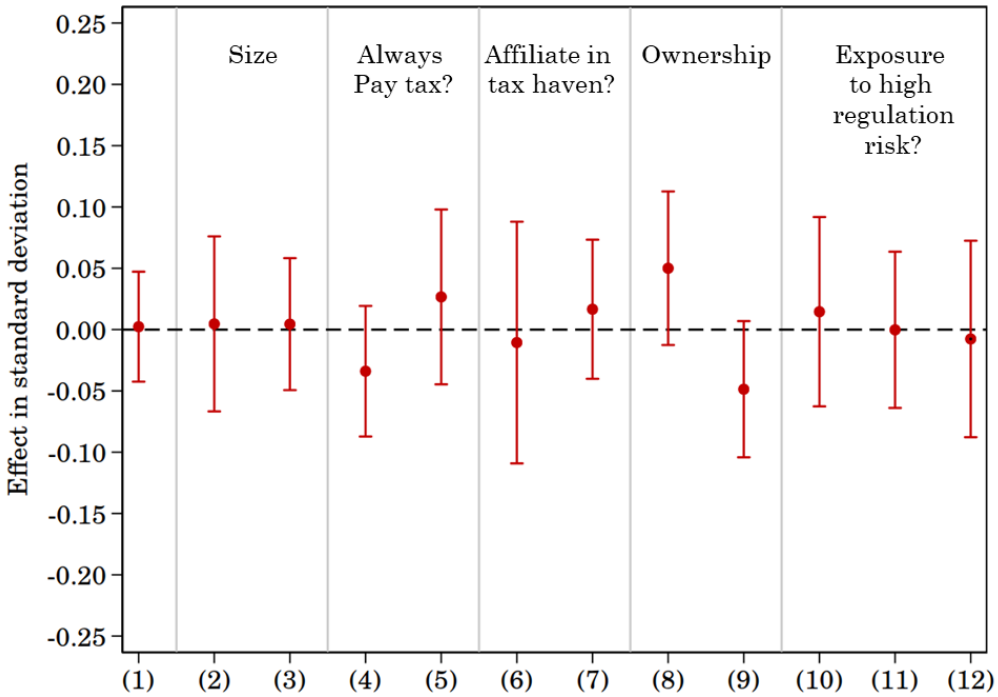


(1) All
(2) Large
(3) Medium
(4) Regularly paid taxes > 0 in the pre-treatment period
(5) Paid no tax multiple years in the pre-treatment period

(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

Notes: This figure examines the robustness of Figure 6, 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 6, which compares multinationals to internationally active domestic firms. Column (1) shows the estimate for the full sample (as in Table 5). 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 is identified as multinationals based on external sources, as described in Section 4.4. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals.

Figure A9: 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

Notes: This figure examines the robustness of Figure 6, 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 6, 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 5). 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 is identified as multinationals based on external sources, as described in Section 4.4. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. Vertical bars represent 90% confidence intervals.

Table A1: 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 Brazaville	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 A2: Sensitivity of International Payments to Changes 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 × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in the difference between destination country and Chile's tax rates following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A3: Sensitivity of International Payments to Changes in Destination Country Tax Rates, Robustness Check II: Firm-Year-Affiliation Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year × affiliate	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-affiliation status fixed effects. It shows the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A4: Sensitivity of International Payments to Changes in Destination Country Tax Rates, Robustness Check III: Destination Country-Year FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	Yes	Yes	Yes	Yes	Yes
Destination country FE × year	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 changes in destination country tax rates following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A5: Sensitivity of International Payments to Changes in Destination Country Tax Rates, Robustness Check IV: Firm-Destination Country FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 2, by adding firm-destination country fixed effects. It shows the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 3 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A6: Sensitivity of International Payments to Changes in Destination Country Tax Rates, Robustness Check V: IHS Transformation of Outcome Variables

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-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 × affiliate	-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 × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in destination country tax rates following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Outcomes in $\log(Y + sqrt(1 + Y^2))$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A7: Sensitivity of International Payments to Changes in Destination Country Tax Rates, Robustness Check VI: Extensive Margin

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate	-0.00487***	-0.00231***	-0.00298***	-0.00072*	-0.00042
	(0.00094)	(0.00059)	(0.00077)	(0.00037)	(0.00027)
Tax rate	0.00096	-0.00024	0.00128	0.00015	-0.00043
	(0.00133)	(0.00085)	(0.00117)	(0.00057)	(0.00044)
Observations	45,248	45,248	45,248	45,248	45,248
Panel B: Up to 2014					
Tax rate × affiliate	-0.00461***	-0.00226***	-0.00284***	-0.00079**	-0.00046*
	(0.00091)	(0.00055)	(0.00075)	(0.00036)	(0.00025)
Tax rate	0.00129	-0.00100	0.00282**	0.00009	-0.00083*
	(0.00128)	(0.00087)	(0.00117)	(0.00050)	(0.00044)
Observations	51,712	51,712	51,712	51,712	51,712
Panel C: Up to 2015					
Tax rate × affiliate	-0.00468***	-0.00226***	-0.00292***	-0.00089**	-0.00052**
	(0.00088)	(0.00053)	(0.00072)	(0.00035)	(0.00023)
Tax rate	0.00191	-0.00053	0.00299***	0.00000	-0.00081*
	(0.00129)	(0.00085)	(0.00115)	(0.00047)	(0.00045)
Observations	58,176	58,176	58,176	58,176	58,176
Log(GDPpc) in destination country	Yes	Yes	Yes	Yes	Yes
Firm FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in destination country tax rates following Equation 3, 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-affiliation 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. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is an affiliate of firm i. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A8: Impact of the Reform on the Sensitivity of International Payments to Changes 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 × affiliate × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × affiliate	-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 × affiliate × post	-0.007	-0.009	-0.001	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × affiliate	-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 × affiliate × post	-0.009	-0.008	-0.003	-0.003	-0.006*
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate diff × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in the difference between destination country and Chile's tax rates following Equation 4. 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. × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Tax rate diff.* indicates the difference between the statutory tax rate in the destination country and Chile's tax rate. *Affiliate* 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 $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A9: Impact of the Reform on the Sensitivity of International Payments to Changes in Destination Country Tax Rates,
Robustness Check II: Firm-Year-Affiliation Status FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	0.000	-0.006	0.002	-0.002	-0.005
	(0.014)	(0.009)	(0.011)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	0.009	-0.004	0.009	-0.003	-0.004
	(0.013)	(0.008)	(0.011)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	0.008	-0.004	0.008	-0.004	-0.005
	(0.013)	(0.009)	(0.011)	(0.004)	(0.004)
Tax rate × affiliate	-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 FE × year × affiliate	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 adding firm-year-affiliation status fixed effects. It shows the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Tax rate* indicates the statutory tax rate in the destination country. *Affiliate* 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 $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A10: Impact of the Reform on Sensitivity of International Payments to Changes in Destination Country Tax Rate,
Robustness Check III: Destination Country-Year FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	-0.013	-0.011	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.010	-0.009	-0.003	-0.002	-0.007*
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	Yes	Yes	Yes	Yes	Yes
Destination country FE × year	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 adding destination country-year fixed effects. It shows the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A11: Impact of the Reform on Sensitivity of International Payments to Changes in Destination Country Tax Rate,
Robustness Check IV: Firm-Destination Country FE

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	-0.013	-0.011*	-0.004	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.006	-0.009	-0.000	-0.001	-0.004
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.010	-0.009	-0.003	-0.002	-0.007**
	(0.010)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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	2.178	2.178	2.178	2.178

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 changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y+1)$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A12: Impact of the Reform on Sensitivity of International Payments to Changes in Destination Country Tax Rate,
Robustness Check V: IHS Transformation of Outcome Variables

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	-0.014	-0.012*	-0.005	-0.001	-0.004
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.006	-0.010	-0.001	-0.001	-0.004
	(0.011)	(0.007)	(0.008)	(0.005)	(0.004)
Tax rate × affiliate	-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 × affiliate × post	-0.010	-0.010	-0.003	-0.002	-0.008*
	(0.011)	(0.007)	(0.008)	(0.004)	(0.004)
Tax rate × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 using the inverse hyperbolic sine (IHS) transformation of the outcome variables. It shows the semi-elasticity of international payments with respect to changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Outcomes in $\log(Y + sqrt(1 + Y^2))$. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A13: Impact of the Reform on Sensitivity of International Payments to Changes in Destination Country Tax Rate, Robustness Check VI: Extensive Margin

	(1) All	(2) Royalties	(3) Services	(4) Interests	(5) Other
Panel A: Up to 2013					
Tax rate × affiliate × post	-0.00127	-0.00095*	-0.00053	-0.00019	-0.00020
	(0.00090)	(0.00058)	(0.00073)	(0.00039)	(0.00031)
Tax rate × affiliate	-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 × affiliate × post	-0.00060	-0.00076	-0.00020	-0.00020	-0.00027
	(0.00088)	(0.00054)	(0.00070)	(0.00039)	(0.00031)
Tax rate × affiliate	-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 × affiliate × post	-0.00094	-0.00078	-0.00045	-0.00028	-0.00051
	(0.00087)	(0.00054)	(0.00070)	(0.00037)	(0.00033)
Tax rate × affiliate	-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 FE × year	Yes	Yes	Yes	Yes	Yes
Firm FE × affiliate	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 changes in destination country tax rates following Equation 4. 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 × affiliate 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-affiliation status, i.e., payments by firm i in year t to affiliates vs. non-affiliates in country j. Data start in 2007. *Post* is a dummy equal to 1 from 2011 onward. *Tax rate* indicates the statutory tax rate in the destination country. *Affiliate* is a dummy equal to 1 when the recipient firm of the payment is a foreign affiliate of a Chilean firm. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1

Table A14: 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 6, which compares multinationals to internationally-active domestic firms. Standard errors clustered at the firm level. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. These results correspond to those in Figure 4.

Table A15: Impact of the Reform on Tax Payments 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 5 and A14, 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 6, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99th percentile of non-zero values. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure A4.

Table A16: Impact of the Reform on Tax Payments 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 5 and A14, 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 6, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure A5.

Table A17: Impact of the Reform on Tax Payments 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 5 and A14, scaling by lagged payroll. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 6, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99$^{\text{th}}$ percentile of non-zero values. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure A6

Table A18: Impact of the Reform on Tax Payments, 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 5, but including tax payments resulting from audits. It shows impact estimates of the reform on corporate income tax/payroll, expressed in standard deviations, following Equation 6, which compares multinationals to internationally active domestic firms. All continuous variables in levels are winsorized at the 99^{th} percentile of non-zero values. Standard errors clustered at the firm level. ***p<0.01, **p<0.05, *p<0.1. These results correspond to those in Figure A7.

B Identifying Likely Intra-group Trade Using Tax and Customs Data

To identify trade that is likely to be intra-group, we proceed as follows: 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). We then compare these amounts to reported intra-group imports and exports by country, which firms are required to provide in tax annexes starting in 2012 as part of the reform.[48]

Matching these two sources, we compare a firm's total amount of trade by country from the customs data with the total amount of trade with affiliates in that country from the tax data. We consider imports to be likely intra-group in firm-country cases where the amount of intra-group imports in the tax data is close to the amount of total imports in the customs data (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. This can lead to the amount of trade recorded in the tax data exceeding the amounts 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.

[48]These tax annex data provide information on the affiliation of the trading partner but no information about products or prices.

C Qualitative Interviews: Methods

This appendix contains further information on the qualitative interviews discussed in Section 3.1. 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 conference 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.

In line with common sample selection criteria for qualitative research, we aimed to reach interviewees who span the range of key experts related to the transfer pricing reform. We identified potential respondents through publicly available information on company websites and LinkedIn and a partial snowball sample 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 (for a long enough duration each), 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 nonprobability) 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 with an average duration of about an hour. At the time of the interviews, 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. 37% 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.

A roadmap guiding the conversation formed the basis for the 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 (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 (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 interview 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 5.

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 list additional quotes from the interviews by topic:

Growth in the Tax Advisory Industry

- "For the tax advisors, this whole thing is great. In 2011, we were a team of two. Now, we are 26."

- "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."

- "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 was that there was no of risk in this area. 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."

- "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."

- "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."

- "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."

Demand for Compliance Support

- "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."

- "A consulting firm helps us with the comparables. They have to find the best form in which we need to report to the tax authority, as it keeps changing."

- "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 KPMG for compliance services or 10k and more to the SII in penalties."

- "The external support helps a lot with the new requirements."

- "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."

- "The internal person in our company collects all the internal information, while the consultancy assures that the transactions are compliant."

- "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."

Complementarity of Compliance Support and Tax Planning Services

Supply Side

- "In the beginning, the firms were focused on complying. Later we started selling more products. We tell them every year about the opportunity of tax planning, for example, 'you are losing a lot of money in this transaction.' Sooner or later, they start to be

motivated to look at their transfer prices. The consulting firm grows with tax planning. Therefore, we focus on selling planning."

- "Approximately 15% of our clients do not want planning. Around 25% come directly to us for planning, while the remaining 60% 'graduate' to planning."

- "Often, a firm is newly a client of the consulting firm with the goal of compliance, and then they start learning about strategies."

- "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."

- "I really like providing transfer pricing services when it relates to planning. Compliance is a little less interesting."

- "I totally agree with the hypothesis that the increased availability of expert consultants in Chile helped firms optimize their tax strategies such that even though there is more monitoring, they don't end up paying more taxes. This is exactly what I see with my clients, too. This one company came for compliance, but we detected an ineffciency. It's common sense. I see it in my work."

- "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."

Demand Side

- "In Chile, the reform was a beginning of a change in thinking. Before, it was something very particular, and nobody talked about it. 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."

- "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. "

- "Under the old system, the firms didn't pay much attention to transfer pricing. Now they do pay attention and do much more planning for transfer pricing."

- "Advisors came from abroad from countries that knew about transfer pricing. New bosses in the companies understood this, and they changed the incentives. Many firms went to consulting firms as a result of the reform. Due to this change, firms realized that there is a whole methodology and opportunity there."

- "We learned that for our company, the reform is an opportunity, not just an issue of tax compliance. We have to see transfer pricing as a strategy. For example, in the case of royalties, we learned that we can be smarter than we were before. Often, it makes sense to charge subsidiary for using the brand, if it is profitable in the destination country. But when the subsidiary is making losses, it can be justified to actually pay the subsidiary to introduce the brand in another country, rather than charging it. Before we learned about this possibility, the subsidiary had losses. But now it doesn't, while the Chilean firm has more expenses, which is efficient from a tax point of view. Before, most firms would charge the same fees to all branches, which was terrible and resulted in fiscal inefficiency."

- "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."

- "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. This may a criticism of the reform, it may lead to more awareness of the issue. 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."'

- "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."

Supply Response of Consulting Services

- "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."

- "Given that the OECD standards are general, there is a lot of mobility."

- "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."

- "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."

Centralization of Cost Centers

- "Many times, we advise companies to determine a country where all payments are concentrated, such as the United States, Mexico, or the Netherlands."

- "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."

Revolving doors

- "I am originally from Colombia, where I learned about transfer pricing. Then I joined a Big Four in Chile before working for the Chilean tax authority for a couple of years. I helped the tax authority with the creation of the new form and with the first round of audits they conducted."

- "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."

- "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."

- "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."

- "Moving from consulting to the tax authority and vice versa happens a lot. For example, one consultant from a Big Four company in Columbia 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 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."

- "Often when there is a very good person [in the SII], the private sector snatches that person away."