Minority shareholders and tax avoidance

Minority Shareholders and Tax Avoidance

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Abstract

This paper examines whether and how external country-level corporate governance devices affect corporate tax avoidance. Using a panel of public firms across 33 countries, I show that laws empowering minority shareholders hinder corporate tax avoidance, consistent with shareholder protection laws spilling over to tax avoidance through reduced income diversion. I corroborate the validity of these findings using a major corporate governance reform in Italy. In cross-sectional tests, I further document that firms in countries with stricter transfer pricing rules and stronger tax enforcement reduce tax avoidance to a larger extent. Finally, through path analysis, I provide evidence consistent with firms shifting less income to foreign countries in response to stronger minority shareholder rights. Overall, these findings suggest that minority shareholder protection laws can safeguard outside investors and the government against expropriation by insiders.

Keywords: Government policy, related-party transactions, anti-avoidance rules, tax avoidance, tax enforcement, minority shareholder rights

JEL classification: G28; G32; G33; H26; K34; M41

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1. Introduction

Comparative corporate governance research has advanced considerably over the last three decades, showing that investor protection matters for crucial issues in economics, finance, and accounting. For example, corporate ownership structures are less concentrated in countries with higher shareholder protection (La Porta et al. 1998, 1999; Morellec et al. 2018). The breadth and depth of capital markets are greater in countries with stronger investor protection (La Porta et al. 1997; La Porta et al. 2002; Brockman and Chung 2003). Moreover, there is evidence that better shareholder protection allows capital accumulation and improves the efficiency of its allocation, with significant effects on economic growth (McLean et al. 2012). Among these effects, however, much less is known about the role of investor protection in government financing and corporate tax avoidance. This constitutes an important gap in the literature, especially in the context of growing concerns over harmful tax practices (OECD 2020). This paper adds to this literature by examining the effect of minority shareholder rights on corporate tax avoidance.

The theoretical foundation for integrating the role of investor protection into the analysis of taxes is grounded in the seminal works of Jensen and Meckling (1976) and Hart (1995). These authors propose an agency framework where outside investors have a claim on the corporate cash flow. In this setting, the principal delegates the agent to perform tasks on their behalf. However, if the agent is a utility maximizer, he may not always act in the principal's best interest. For example, self-interested managers may use non-market value transfer prices in related transactions to exploit private benefits for themselves at the expense of investors' cash flow rights. Viewed in this light, the government, due to its tax claims on a firm's cash flow, may also be considered an interested party likely concerned with preventing wealth extraction and preserving its share of firm value since these transactions, by their nature, may serve the twofold purpose of diverting income and avoiding taxes (Desai et al. 2007).

Countries typically rely upon external corporate governance devices, such as minority shareholder protection laws, to protect outside investors against expropriation by insiders (Dyck and Zingales 2004; La Porta et al. 2000a). However, if such external country-level governance devices effectively prevent insiders from shrinking corporate resources through related-party transactions (RPTs) at the expense of outside investors, one could arguably expect these laws to seemingly benefit the government's tax coffers, with positive externalities on corporate tax revenue. This paper aims to shed light on this externality by examining the effect of minority

shareholder rights on corporate tax avoidance in a large cross-section of countries with time-series changes in shareholder protection.

To answer the research question, I start by exploiting changes in minority shareholder rights across 33 countries from 2002 to 2013. Specifically, I rely on the minority shareholder protection index compiled by Guillén and Capron (2015). This index ranges from zero to 10, with higher scores indicating stronger minority shareholder rights. I then employ a first-difference specification to absorb any time-invariant characteristics associated with tax avoidance and minority shareholder protection and to accommodate multiple changes in minority shareholder rights per country. I choose a fixed effects structure that ensures I compare firms in the same industry and clusters of countries with similar legal origins and economic conditions. I also take multiple steps to account for unobserved economic conditions as best as possible.

Using a sample of 17,512 listed firms, I empirically document a negative effect of minority shareholder rights on tax avoidance. Specifically, I find that firms in countries with stronger minority shareholder rights have significantly higher effective tax rates (ETRs) than firms in countries with weaker minority shareholder rights. This effect is economically sizable: the analyses indicate that a 1% increase in the minority shareholder rights index increases the ETR by around 0.14%, and this elasticity is generally higher than those of the other control variables for the average firm in the sample. Furthermore, I perform a battery of robustness tests to mitigate identification concerns. First, I run a dynamic test and find that treated and control firms exhibit similar trends in tax avoidance before the change in minority shareholder rights, supporting the parallel trends assumption. Second, I investigate the possibility that concurrent shocks coincide with changes in minority shareholder protection, leading to a spurious correlation between minority shareholder protection changes and tax avoidance. I show that the observed tax avoidance effect is not due to economic or financial crises. Moreover, the results are robust to controlling for adopting IFRS, corporate governance changes within the same cluster of countries, and changes in legal provisions intended to protect other suppliers of capital, such as creditors.

Next, I analyze two sources of cross-sectional variation in country characteristics to strengthen the main inferences and exploit heterogeneity in minority shareholder rights responsiveness across firms. These tests enable me to shed light on the institutional interaction between minority shareholder rights changes and other provisions in a country's corporate tax code and to show that the reduction in tax avoidance is due not only to the protection granted to minority shareholders

but also to the incentives provided by the combination of minority shareholder rights with other sets of rules. For example, I explore cross-country differences in transfer pricing rules. While intra-group transactions are widely used techniques to divert income and avoid taxes across jurisdictions (Heckemeyer and Overesch 2017), firms in countries with stricter transfer pricing rules should have fewer opportunities to siphon corporate funds cross-jurisdictionally at the expense of minority shareholders and the government. I rely on the transfer pricing score compiled by Mescall and Klassen (2018) to evaluate the effect of a broad set of tax law items (e.g., disclosure on related-party transactions, transfer pricing documentation, or mandatory transfer pricing methods) that *jointly* target tax avoidance through transfer pricing and related-party transactions. I find that the effect of minority shareholder rights on tax avoidance is stronger in countries with stricter transfer pricing rules. Interestingly, I also find that the tax avoidance response to minority shareholder rights is stronger in countries with stronger tax enforcement, which indicates that the tax authority scrutiny can make it difficult for insiders to divert firm value to themselves. Furthermore, consistent with a positive externality, I run aggregate country-level analyses and find a positive relation between the strength of minority shareholder protection and corporate tax revenue. Overall, these findings suggest that, by curbing tunneling transactions, the interaction between stronger minority shareholder protection and tax system features benefits both outside investors and the government's tax coffers.

While the prior analyses are valuable in assessing the relationship between minority shareholder rights and tax avoidance, there is a potential limitation in relying solely on an international sample. Common to most cross-country studies, this limitation arises from the possibility of confounding events and omitted variables biasing the results, leading to a less explicit link between minority shareholder rights and tax avoidance. To address this limitation, the second set of analyses exploits a major corporate governance reform that strengthened the minority shareholder rights of Italian-listed firms in 1998. I use this reform because it allows me to make more precise inferences about the effect of minority shareholder rights on tax avoidance for the following reasons. First, in the 1990s, Italy had a weak system of investor protection and systemic income diversion (Shleifer and Vishny 1997; Dyck and Zingales 2004). Second, the ownership structures of Italian-listed firms were characterized by high concentration, crossholdings, and pyramidal group structures, which made it easier for insiders to extract private benefits for themselves through related-party transactions and transfer pricing schemes (Zingales 1994; Volpin

2002; Enriques and Volpin 2007). Third, the law was motivated by the desire to make the Italian equity market more attractive to outside investors and was unrelated to the business cycle or other macroeconomic trends (Enriques 2009). Fourth, the reform was very comprehensive to ensure minority shareholders' adequate protection against the risk of expropriation by insiders. The law i) increased minority shareholders' representation on the board, ii) required the approval of minority shareholders for RPTs carried out with insider-affiliated entities, and iii) gave minority shareholders the right to sue directors derivatively.

To assess the effect of the reform, I proceed in two steps. First, I carefully select a group of firms that are not subject to the law change but are subject to similar economic conditions and legal origins against which to compare the tax avoidance of Italian-listed firms. After applying several selection criteria, I find that French-listed firms could serve as a suitable control group in the analysis because France did not enact significant corporate or tax law reform around the 1998 Italian reform (Fauver et al. 2017; Bruehne et al. 2023). Second, I partition the sample into treatment group firms (Italian-listed firms) and control group firms (French-listed firms) and employ a matching difference-in-differences (DiD) research design over the period 1995–2000. I thus effectively compare the tax avoidance response around the 1998 Italian reform (first difference) of Italian vis-à-vis French listed firms (second difference).

Consistent with the prior findings, I find that Italian firms have significantly higher ETRs than French firms after the reform. To put this result into perspective, an increase of 6.62% in ETRs translates into an increase in income taxes of USD 15 million for the average Italian firm in the sample. Importantly, I observe a parallel trend in ETRs before the 1998 reform. The difference in ETRs between Italian and French firms in each pre-reform year is nonsignificant. After the reform, Italian firms avoid significantly fewer taxes than French firms, and this effect persists over time. Next, I follow Shevlin et al. (2020) and employ a path analysis to corroborate this interpretation and to shed light on the channel through which minority shareholder rights reduce tax avoidance after the reform. I assess whether operational complexity arising from transfer pricing and related-party transactions mediates the relationship between minority shareholder rights and tax avoidance. In line with Omer et al. (2006) and Blouin and Krull (2016), I measure operational complexity based on the number of business or geographic segments. I find operational complexity is significantly lower for Italian firms than for French firms after the reform. This association, in turn, plays a mediating role in the relationship between minority shareholder protection and tax

avoidance. Collectively, these results point to a positive externality of minority shareholders on tax avoidance and suggest that when minority shareholder rights are stronger, and insiders' expected costs of income diversion are higher, firms avoid fewer taxes.

By examining the effect of minority shareholder protection laws on tax avoidance, this paper contributes to the law and finance and tax avoidance lines of research, arguing that minority shareholder protection laws deter corporate tax avoidance. Prior literature suggests that minority shareholders and the government (via tax authority scrutiny) may have similar incentives to monitor managers and controlling shareholders due to their claims on a firm's cash flow (Desai et al. 2007). This paper shows that by curbing income diversion and making it difficult for insiders to shrink the corporate cash flow, the protection granted to minority shareholders negatively impacts tax avoidance and generates a positive externality that benefits government tax revenue. The key message is that, by strengthening investor protection, a country can safeguard investors (Dyck and Zingales 2004; La Porta et al. 2000a) and the government's cash flow rights (Desai et al. 2007) against expropriation by insiders.

This work also adds broadly to the literature that studies the corporate governance implications of tax avoidance. Prior studies mainly analyze firm-level (*internal*) governance mechanisms and focus on the United States, where the most prominent agency conflicts are those between managers and a diffused group of shareholders (e.g., Robinson et al. 2010; Rego and Wilson 2012; Gaertner 2014; Powers et al. 2016; Chi et al. 2017). In contrast, this paper examines country-level (*external*) governance institutions and focuses on a broader setting, which includes Asian and European countries, where companies are usually controlled by large blockholders (e.g., La Porta et al. 1999; Claessens et al. 2000, 2002; Faccio and Lang 2002) and the primary agency problem is the risk of controlling shareholder expropriation of minority shareholders, that is, self-dealing or tunneling transactions (Johnson et al. 2000; Djankov et al. 2008). In this regard, by adopting a comparative cross-country approach, this paper is also related to studies that examine the effect of different legal institutions on accounting policies (e.g., Leuz et al. 2003) and the costs of external financing (e.g., Laeven and Majnoni 2005; Hail and Leuz 2006; Bae and Goyal 2009).

Finally, this paper is closest to the literature investigating how the regulatory environment, particularly the tax system, shapes firms' tax avoidance (e.g., Atwood et al. 2012; Shevlin et al. 2017). Compared to the prior literature, I contribute by examining the effect of minority shareholder protection rights on tax avoidance while taking a holistic perspective that considers

corporate and tax provisions in a country's legal framework. The findings are noteworthy for regulators and policymakers since they demonstrate the deterrent effect of minority shareholder rights on corporate tax avoidance. Hence, these laws should be featured more prominently in the ongoing debate among OECD/G20 countries over tackling corporate tax avoidance (OECD 2020) since improving a country's corporate governance system could curb harmful tax practices.

2. Theoretical background and hypothesis development

The fundamental basis for connecting the corporate governance dimension to the analysis of taxes is grounded in the seminal works of Jensen and Meckling (1976) and Hart (1995). These authors propose an agency framework where outside investors have a claim on the corporate cash flow. In this framework, outside investors (the *principal*) delegate decision-making authority to the management (the *agent*) to run the business on their behalf and undertake any action that maximizes their wealth. However, if the agent is a utility maximizer, he may not always act in the principal's best interest and thus fail to maximize their wealth. In other words, the corporate governance theory suggests that self-interested managers may exploit private benefits at the expense of investors' cash flow rights.

In this setting, the principal can limit divergences from their interest by relying on corporate governance devices that align the principal and the agent's interests and prevent the latter from shrinking corporate resources. Among the many corporate governance devices that guarantee such alignment are the *external* country-level tools known as minority shareholder protection laws, whose objective is to safeguard outside investors against the risk of expropriation by insiders (Dyck and Zingales 2004; La Porta et al. 2000a). For example, in the 2000s, after the Enron, Parmalat, and WorldCom scandals, many countries worldwide enacted minority shareholder rights reforms with the aim of curtailing insiders' rent extraction behavior (Morellec et al. 2018).

However, while countries typically implement such laws to protect minority shareholders from insiders' malfeasance, one could also expect these corporate governance tools to provide valuable side effects to other interested parties. In line with this reasoning, prior research suggests that the government, due to its tax claims on a firm's cash flow, may also be considered an interested party likely concerned with preventing insiders from shrinking corporate resources and securing its share of firm value through tax collection (Desai et al. 2007). In this paper, I argue that, in addition to protecting outside investors against expropriation by insiders, minority shareholder protection laws can also benefit the government's tax coffers by reducing corporate

tax avoidance and generating a positive externality of increasing tax revenue. The rationale here is that when minority shareholder rights are stronger, and the expected costs of income diversion are higher, insiders will have fewer opportunities to siphon corporate resources at the expense of minority shareholders and the government. Specifically, stronger minority shareholder rights can, on the one hand, curtail tunneling transactions toward insiders and, on the other hand, increase corporate tax liabilities since insiders' wealth expropriation often entails engaging in similar transactions with related entities at non-market value transfer prices, which, by their nature, can serve two purposes of diverting income at the expense of outside investors and avoid taxes at the expense of the government. More formally, I state the central hypothesis as follows:

H: *Stronger minority shareholder protection laws negatively impact tax avoidance.*

3. Research design and data

3.1 Minority shareholder rights around the world

To draw inferences about the effect of minority shareholder rights on corporate tax avoidance, I start by collecting the minority shareholder rights index compiled by Guillén and Capron (2015). This index ranges from zero (poor minority shareholder rights) to 10 (strong minority shareholder rights) as the number of mandatory legal provisions that grant protection to minority shareholders against the actions of controlling shareholders and management. A value of up to one is added to the index for any of the ten following provisions: 1) the presence of independent board members, 2) the feasibility of director dismissal, 3) the private enforcement of directors' duties (derivative lawsuits), 4) the general meeting's power to make de facto changes, 5) agenda-setting power, 6) the prohibition of multiple voting rights, 7) facilitation of the anticipation of shareholder decisions, 8) the disclosure of significant share ownership, 9) mandatory bids, and 10) shareholder action against general meeting resolutions.[1] Hence, the minority shareholder rights index (*Shareholder rights*^{GC}) ranges from zero to 10, with higher scores indicating stronger minority shareholder rights.

Table 1 summarizes the sample countries and the average minority shareholder rights index for each country from 2002 to 2013.[2] The minority shareholder rights index ranges from 7.75 in

[1] The index is highly granular, with each legal provision ranging between zero and one, depending on the nature and strength of the specific legal provisions contemplated in the national corporate code of the country under examination. See Table 1 of Guillén and Capron (2015) for additional details on the coding procedure.

[2] The sample starts in 2002, because, along with the passage of the Sarbanes–Oxley Act of 2002 in the United States after the Enron scandal, many countries reformed their corporate codes, introducing several regulatory changes in shareholder protection. The sample ends in 2013 because of tax enforcement data availability.

Korea to about three in Denmark, with an average of 6.65 across all countries. There is significant variation in minority shareholder rights both across and within the countries in the sample, with a cross-country standard deviation of 0.85 and a maximum (minimum) within-country standard deviation of 1.57 (zero) in the Netherlands (Argentina, Australia, Brazil, Canada, Chile, Denmark, Japan, Korea, Malaysia, Philippines, Singapore, and Spain). This result suggests meaningful variation across and within countries for gauging the relationship between minority shareholder rights and tax avoidance. Panel A of Fig. 1 shows the evolution of the index of minority shareholder rights between 2002 and 2013. There is an increasing trend in protecting minority shareholders across countries and over time. Panel B of Fig. 1 breaks up the minority shareholder rights index into the four legal traditions proposed by La Porta et al. (1998). Two observations are worth noting. First, the protection of minority shareholders is relatively stable in English common law countries over the sample period. In contrast, countries belonging to the French and Scandinavian legal traditions have experienced a consistent rise in the protection of minority shareholders over time. Second, regardless of the legal tradition and extent of protection, all countries have reformed their corporate codes by granting additional rights to minority shareholders (Morellec et al. 2018).[3]

The main concern in my cross-country analysis is that the strength of minority shareholder rights could systematically correlate with changes in legal or economic conditions. Before proceeding with the analyses, I verify in Table A.1 of the Online Appendix whether country-level macroeconomic variables or tax changes correlate with changes in the protection of minority shareholders. These variables are measured up to three years before the change in *Shareholder rights*^{GC}. I estimate panel regression models with country and year-fixed effects. None of the legal and economic variables covaries with changes in *Shareholder rights*^{GC}. While I cannot entirely rule out the endogeneity of *Shareholder rights*^{GC}, these results reassure me that the minority shareholder rights index does not systematically vary with macroeconomic trends or coincide with other law changes. Nevertheless, in the next section, I control for several country-level variables to ensure that observable legal and economic conditions are not spuriously driving the results (e.g., La Porta et al. 1997, 1998, 2000a, 2008).

[3] Figure A.1 of the Online Appendix displays the average minority shareholder rights index for each country over the sample period in the form of a world heat map, further corroborating the variation in minority shareholder rights across countries.

3.2 Estimation strategy

I now turn to the cross-country analysis and estimate the relation between minority shareholder rights and tax avoidance using the following first-differences equation:

$$\Delta y_{i,j,k,t} = \alpha_0 + \beta_1 \Delta Shareholder\ rights_{k,t}^{GC} + \beta_2 \Delta X_{i,j,k,t} + \beta_3 \Delta \prod_{k,t} + \varphi_k + \varphi_j * \omega_t + \varphi_l * \omega_t + \varepsilon_{i,t} \quad (1)$$

where $\Delta y_{i,j,k,t}$ is the change in *ETR* from year $t-1$ to t for firm i in industry j in country k. Following prior literature (e.g., Dyreng et al. 2008, 2010), I define the ETR as income taxes divided by pretax income minus special items and winsorize it at zero and one.[4] The primary variable of interest is the change in Δ*Shareholder rights*^{GC}, a continuous minority shareholder rights index ranging from zero to 10, as defined above. Consistent with the theoretical hypothesis in Section 2, I expect a positive sign for β_1, indicating that stronger minority shareholder rights are associated with a decrease in tax avoidance (i.e., higher ETRs).

Moreover, I follow prior studies on tax avoidance and include a vector ($\Delta X_{i,j,k,t}$) with changes in several firm-level determinants of a firm's tax avoidance decision (e.g., Rego 2003; Armstrong et al. 2012; Chyz et al. 2013)[5] and a vector ($\Delta \prod_{k,t}$) with changes in the country-level determinants of minority shareholder rights.[6] I winsorize all the non-indicator variables, except for country-level variables, at the first and 99th percentiles. All the variables are defined in the Appendix.

I estimate equation (1) in the first-differenced form to absorb all time-invariant firm-, industry-, and country-specific characteristics.[7] Another advantage of a first-differenced specification over a level specification with firm fixed effects is that first differencing can better accommodate repeated treatments—that is, firms experiencing several minority shareholder rights changes over time—and treatment reversals—that is, increases in minority shareholder rights

[4] In the analyses, I cannot use *CASH ETR* as the dependent variable since many countries do not require firms to disclose taxes paid in their financial statements. However, in untabulated analyses, I find that the results are robust to using *CASH ETR* for the few countries covered. In those countries, I also note that *CASH ETR* and *ETR* are highly correlated (with a correlation of 0.39 and a *p*-value below 0.01).

[5] Specifically, I control for changes in size, leverage, the market to book, intangible assets, research and development (R&D), the return on assets (ROA), capital intensity, cash, accruals, and the Z-score.

[6] I control for changes in *Control of corruption* as a measure of a country's general enforcement and risk of political expropriation. I also add macroeconomic controls correlated with a country's level of economic development (i.e., changes in the GDP per capita and in the inflation rate). Since shareholder taxes could also affect tax avoidance (Amiram et al. 2019), I evaluate the joint effect of corporate and personal taxes on tax avoidance by adding the change in the Miller tax index, which is not subject to the concern that multiple types of taxes could be highly correlated with each other. However, in untabulated tests, I find that the results are robust to the inclusion of the change of each tax rate separately. Furthermore, I find that measuring the changes in firm- and country-level controls from year $t-2$ to year $t-1$ does not affect the economic or statistical significance of the results.

[7] Note that the results do not depend on the model specification. In Panel A of Table A.2 of the Online Appendix, I estimate equation (1) in levels with firm fixed effects and find similar results.

followed by decreases at a later time (Heider and Ljungqvist 2015; Ljungqvist et al. 2017). Furthermore, I include country fixed effects (φ_k) and compare firms not only in the same two-digit Standard Industrial Classification (SIC) industry and year ($\varphi_j * \omega_t$) but also in comparable countries with respect to the legal origin and economic development ($\varphi_l * \omega_t$). While the industry-year fixed effects absorb industry shocks that could affect firms' tax avoidance, the legal origin and economic development fixed effects eliminate the impact of time-varying economy-wide shocks within the same economic and legal cluster by narrowing the treatment and control groups to countries with the same legal origin that follow similar GDP growth paths (for an overview of these country clusters, see Table A.3 of the Online Appendix).[8] However, I note that the results are robust to variations and combinations of fixed effects (untabulated for brevity). I follow Hsu et al. (2014) and cluster standard errors at the country–industry level to avoid small cluster bias from a limited number of countries.[9]

3.3 Data and descriptive statistics

The main data source is Compustat Global and Compustat North America for firms incorporated and headquartered in a country[10] with non-missing data for the main variables of interest from 2002 to 2013.[11] To avoid the impact of exchange rate fluctuations biasing the results, I retrieve exchange rates from Datastream and convert each variable into real U.S. dollars. I obtain data on country-level variables from the World Bank, the International Monetary Fund (IMF), and the OECD. Consistent with prior tax avoidance literature (e.g., Dyreng et al. 2008), I exclude utility firms (SIC codes 4900–4999) and financial firms (SIC codes 6000–6999). I also exclude countries with fewer than 30 listed firms to draw meaningful inferences from the analyses. I further exclude loss-making firms and firms with negative equity, cash holdings, or total assets. These restrictions result in a sample size of 17,512 unique firms and 98,834 observations distributed across 33

[8] Comparing firms within the same economic and legal cluster is important because, for example, a German firm could be different from a U.S. firm, even if they are in the same industry, but could be similar in many aspects to an Austrian firm.

[9] In untabulated analyses, I further test the robustness of the results to different clustering methods. I follow Bertrand and Mullainathan (2003) and Bertrand et al. (2004) and rerun equation (1) while employing the most conservative clustering method (i.e., at the country level). I also correct the standard errors for clustering standard errors by country-year and firm or by country–industry using the 48 Fama–French (FF48) industries. Across all the specifications, the minority shareholder rights indicator is still positive and statistically different from zero at conventional levels. This suggests that the main findings are not sensitive to the clustering method.

[10] Requiring the incorporation and headquarters countries to be the same is crucial to ensure that firms are subject to the same laws of the country in which they are incorporated and operate.

[11] Note that, because the firm- and country-level variables are defined in terms of changes, I use accounting and macro-level data for the fiscal years 2001 to 2013.

countries from lower-middle to upper-middle and high-income regions, according to the World Bank's income classification. In total, the sample countries cover about 90% of the world's market capitalization over the sample period, in line with prior law and finance studies (e.g., La Porta et al. 2000b).[12] Thus, these countries represent a very comprehensive slice of the global economy.

Table 2 presents descriptive statistics for key firm and country characteristics. The average level of *ETR* is 29.04%, indicating that the typical firm pays taxes below the statutory corporate tax rate (about 33%). The mean value of the minority shareholder rights indicator, *Shareholder rights*^{GC}, is equal to 6.65. Table 2 also shows that the control variables are similar in most important respects to those used in the literature. For example, the average firm has a logarithm of total assets of 5.90, similar to the result of Kanagaretnam et al. (2018). In line with Atwood et al. (2012), average R&D expenses are about 1.06% of total sales. Finally, the average enforcement level is about 1.10, which compares favorably to the control of corruption (0.736) in Shevlin et al. (2019).

4. Results

4.1 Baseline results

Panel A of Table 3 reports the baseline results based on equation (1). Column (1) includes the minority shareholder rights indicator, the country, industry, and legal origin–economic development–year fixed effects. Consistent with my theoretical hypothesis and the negative effect of minority shareholder protection on tax avoidance, the coefficient of minority shareholder rights is positive and statistically different from zero at the 5% level. This result also holds after including the control variables (columns (2) and (3)).[13] Note that the empirical identification of these results is from comparing the change in tax avoidance in firms subject to a minority shareholder rights change (treated firms) with the change in tax avoidance in firms that do not experience such a change (control firms). One concern with this approach could be that the estimated effect is due to pretreatment differences in the characteristics of treated and control firms. To address this concern, I augment equation (1) with country-fixed effects interacted with the minority shareholder rights indicator to control whether countries follow different pretreatment trends in tax avoidance. Column (4) shows that the results are robust to such a trend variable.

[12] The data on market capitalization (as a percentage of the GDP) are from the World Bank's IBRD–IDA database (available at https://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS, last accessed February 8, 2023).

[13] The signs of the coefficient estimates associated with the control variables are generally consistent with prior studies. For example, the coefficients of the changes in leverage, accruals, the ROA, and R&D are negative and mostly significant (see also Gupta and Newberry 1997; Graham and Tucker 2006; Edwards et al. 2016).

Panel B of Table 3 presents the lead–lag analysis. Specifically, I re-estimate equation (1) and allow past and future changes in minority shareholder rights (around the current change in minority shareholder rights) to impact tax avoidance. This test enables me to examine whether a change in minority shareholder rights is anticipated and whether firms delay their tax avoidance response. Column (1) shows that, for future changes in minority shareholder rights ($t > 0$), the estimates of minority shareholder rights are both smaller in economic magnitude and statistically nonsignificant. This result rejects any support of pretreatment trends and reverse causality. Column (2) allows for potential delays and reversals in firms' tax avoidance responses to stronger minority shareholder rights by including two-year lags. In addition to observing a positive relationship between minority shareholder rights and tax avoidance in the same year as the change in minority shareholder rights, I find similar statistical significance in lagged minority shareholder rights, indicating that firms do not subsequently reverse the reduction in tax avoidance following a change in minority shareholder rights at t. Hence, the effect of minority shareholder rights appears to persist in subsequent years. These conclusions remain similar when I combine all lead–lag indicators in the last column. Figure 2 presents a visualization of this test. I plot the cumulative differences in tax avoidance from year $t - 2$ to year $t + 2$ around the year of the minority shareholder rights change ($t = 0$). I observe a parallel trend between the treated and control groups before the minority shareholder rights change, rejecting the conjecture that firms anticipate minority shareholder rights changes. Once minority shareholder rights become stronger, the treated firms decrease tax avoidance significantly relative to the control firms. More importantly, this reduction in tax avoidance does not reverse in the following years. The cumulative differences remain statistically significant in years $t + 1$ and $t + 2$. This observation stresses the long-term importance of the minority shareholder rights effect since the reduction in the tax avoidance of treated firms appears persistent.

Finally, I assess the economic significance of the results following the approach of Faccio and Xu (2015) and De Vito and Jacob (2023). Specifically, I use the ex-post observed summary statistics to compute the *elasticity* of corporate tax avoidance to changes in minority shareholder rights. I calculate the elasticity as $(dy/dx)\times(x/y)$, where dy/dx consists of the coefficient estimates in column (3) of Panel A of Table 3 and (x/y) consists of the mean values of x (i.e., the minority shareholder rights index) and y (i.e., the ETR). Figure 3 presents the results. A 1% increase in the minority shareholder rights indicator is associated with a 0.14% increase in a firm's ETR. Notably,

the only variables that appear to be of similar importance are firm size and profitability. This result suggests that, in this sample, minority shareholder rights are an economically important driver of tax avoidance choices beyond the traditional firm-level determinants.

4.2 Robustness tests

In Table 4, I undertake several additional tests to confirm the robustness of the results. First, I verify the possibility that contemporaneous economic shocks, such as economic or financial crises, drive the reduction in tax avoidance.[14] Second, I probe the robustness of the results to other reforms concurrent with changes to minority shareholder rights. The results show that the baseline findings are robust to controlling for the adoption of IFRS, to corporate governance changes within the same cluster (*Shareholder rights*$^{Other\ countries}$)—which could make firms anticipate such changes in their own countries and reduce tax avoidance accordingly—and to changes in legal provisions intended to protect other suppliers of capital, such as creditors.[15] Third, in the Online Appendix, (a) I investigate whether a specific country is driving the main results,[16] (b) I assess the robustness of the results by using alternative definitions of tax avoidance and extending the analyses to a larger sample of 66 countries from 2002 to 2016, the last year available with a minority shareholder rights index; (d) I also examine the link between minority shareholder rights and tax avoidance through path analysis.[17] Across all tests, the main conclusion remains unaffected.

4.3 Heterogeneity in the tax avoidance effect: The role of transfer pricing risk and tax enforcement

In this section, I exploit heterogeneity in minority shareholder rights responsiveness across firms. This analysis has the key benefit of shedding light on the interactions between minority shareholder rights and tax system characteristics. In this regard, I show that the reduction in tax

[14] Table A.4 of the Online Appendix presents the list of the excluded firm–year observations due to economic or financial crises. Moreover, I rely on Asonuma and Trebesch (2016) and exclude firm–year observations from countries experiencing a sovereign debt crisis over the sample period (i.e., Argentina, Greece, Portugal, and Spain). In untabulated tests, I find results consistent with the main findings.

[15] In untabulated analyses, I find that the results are qualitatively the same if I restrict the sample to firm–year observations after IFRS adoption.

[16] In untabulated analyses, I also exclude more than one country at a time based on their legal origin, and the results continue to be robust.

[17] Similar to the tests conducted in the Italian and French settings in Section 5.4, in Figure A.3 of the Online Appendix, I test the theoretical channel through path analysis. Specifically, I rely on the Datastream database to construct an industry-level measure of foreign operations because firms with higher levels of foreign activities can engage in RPTs to siphon corporate funds at the expense of minority shareholders and the government. Moreover, I investigate whether stronger minority shareholder rights reduce insiders' ability to extract private benefits of control by using the percentage of closely held shares. In Panel A (B), I find that foreign operations (the percentage of shares closely held by insiders) are significantly lower for firms in countries with stronger minority shareholder rights. This association, in turn, plays a mediating role in the relationship between minority shareholder protection and tax avoidance.

avoidance is due not only to the higher protection granted to minority shareholders but also to the incentives provided by combining minority shareholder rights with other rules. While stronger minority shareholder rights constrain insiders from siphoning corporate resources at the expense of outside shareholders, other provisions in a country's tax code can complement minority shareholder protection, further limiting the possibility of diverting resources for private benefit and avoiding taxes.

I operationalize the notion that insiders could find it harder to engage in tax avoidance when binding tax code provisions are in place in two ways. First, firms in countries with stricter anti-avoidance rules would find it harder to divert income and avoid taxes at the expense of minority shareholders and the government. I measure the strictness of anti-avoidance rules using the transfer pricing score of Mescall and Klassen (2018).[18] This continuous index ranges between one and 5, with higher scores indicating greater transfer pricing risk. The index combines several country-specific regulations that limit multinationals' ability to deviate from the "fair transfer price" in internal, related-party transactions and divert income across jurisdictions (e.g., disclosure on RPTs, transfer pricing documentation, or mandatory transfer pricing methods). While firms can implement several tax avoidance strategies, I focus on internal transfer-pricing transactions because they are arguably the most widely used tax planning techniques to avoid taxes and divert income across jurisdictions (Heckemeyer and Overesch 2017). Compared to arm's length transactions in which the buyer and seller are independent, intra-group transactions occur between two related parties, such as a firm and its controlling shareholders or managers, at a given transfer price (Jian and Wong 2010). Crucially, the transfer price and the terms and conditions of the transaction are usually not disclosed, and often they differ from what would have been charged by unrelated parties dealing at arm's length. The lack of mandatory disclosure on RPTs conveniently allows insiders to conceal income at the expense of minority shareholders and the tax authority (e.g., Bushman and Smith 2001; McNichols and Stubben 2008; OECD 2012). In contrast, requiring firms to disclose RPTs and prepare transfer pricing documentation increases the likelihood of detecting tunneling activities, thereby increasing the expected cost of expropriation.

[18] Consistent with prior literature, I measure the strictness of transfer pricing rules at the parent country level because of the strategic role of the parent company in setting up tax avoidance and profit-shifting strategies within the group (Dischinger et al. 2014).

I then categorize countries based on the level of transfer pricing risk to sort them according to high versus low levels of risk, with *High-transfer pricing risk.* This indicator variable is equal to one if the transfer pricing score is above the yearly industry median and zero otherwise. In countries with low transfer pricing risk, stronger minority shareholder rights decrease tax avoidance, as suggested by the positive and statistically significant coefficient of Δ*Shareholder rights*^{GC} in column (1) of Table 5. However, this effect is significantly stronger in high-transfer pricing risk countries since the interaction between Δ*Shareholder rights*^{GC} and Δ*High-transfer pricing risk* is positive and statistically significant at the 1% level. In line with this result, I also find the joint coefficients of Δ*Shareholder rights*^{GC} and Δ*Shareholder rights*^{GC}×Δ*High-transfer pricing risk* to be significant at the 1% level.[19] In Panel A of Fig. 4, I illustrate these results using the coefficient estimates from column (1) of Table 5. I plot the joint Δ*Shareholder rights*^{GC} coefficient (*y*-axis) as a function of the minority shareholder rights index (*x*-axis) for firms with low transfer pricing risk (*High-transfer pricing risk* = 0) and with high transfer pricing risk (*High-transfer pricing risk* = 1). The figure shows that the two groups are indistinguishable for the lowest value of *Shareholder rights*^{GC}. As the minority shareholder rights index increases, the difference between the two groups increases. In countries with the strongest minority shareholder protection, the difference in *ETR* is about one percentage point. Importantly, the differences between the two groups are also significantly different from each other.

The second variable proxying for whether a firm could find it harder to divert income and avoid taxes is the strength of a country's tax enforcement. As Dyck and Zingales (2004) argue, the government is the largest minority shareholder in all corporations due to its tax claim on a firm's cash flows. Therefore, the government (via the tax authority scrutiny) plays a crucial role in monitoring wealth diversion. Hence, firms located in countries with stronger tax enforcement would have fewer tax avoidance opportunities (Hoopes et al. 2012), and insiders would find it harder to engage in wealth diversion by, for example, deviating from the "fair transfer price" in RPTs. To test this prediction, I rely on the 2006 OECD Tax Administration Guide coupled with the 2013 update and collect the ratios of citizens to tax staff at the central government tax agency per 1,000 inhabitants in 2003 and 2011 and use this ratio as a measure of tax enforcement

[19] Note that the number of observations slightly decreases due to missing transfer pricing data.

(Goncharov and Jacob 2014).[20] Because tax enforcement is relatively sticky over time, I follow Beuselinck et al. (2015) and replace the missing tax enforcement data over 2002–2010 with the 2003 value. Similarly, I replace the missing tax enforcement data over 2011–2012 with the updated 2011 value. I then split countries at the yearly industry median to sort them according to low versus high levels of tax enforcement, with *High Tax Enforcement*.

Column (2) of Table 5 presents the regression results from estimating equation (1) with the Δ*High tax enforcement* proxy and its interaction with Δ*Shareholder rights*^{GC}. The main coefficient on Δ*Shareholder rights*^{GC} is positive and statistically significant at the 5% level. This coefficient captures the tax avoidance response of firms with low tax enforcement. Although these firms face constraints in their engagement in income diversion and tax avoidance due to minority shareholder protection, the reduction in tax avoidance is less than that of their peers in high–tax enforcement countries, as suggested by the positively significant coefficient on Δ*Shareholder rights*^{GC} ×Δ*High tax enforcement*. This result indicates that the combination of stronger minority shareholder protection with higher tax enforcement results in the greatest reduction in tax avoidance, which is also consistent with the alignment of incentives between the government and minority shareholders. Panel B of Fig. 4 provides a graphical illustration of these results using the coefficient estimates from column (2) of Table 5. I plot the joint Δ*Shareholder rights*^{GC} coefficient (*y*-axis) as a function of the minority shareholder rights index (*x*-axis) for firms with low tax enforcement (*High Tax Enforcement* = 0) and high tax enforcement (*High Tax Enforcement* = 1). The panel shows that, for the lowest value of *Shareholder rights*^{GC}, there is no difference between the two groups. As the minority shareholder rights index increases, the difference between the two groups increases. In countries with the strongest minority shareholder protection, the difference in *ETR* is about 2.3 percentage points. Importantly, the differences between the two groups are also significantly different from each other.

Furthermore, to address the concern that transfer pricing risk and tax enforcement conceptually capture the same construct, I re-estimate equation (1) by including the two sets of interaction terms (i.e., Δ*Shareholder rights*^{GC} ×Δ*High-transfer pricing risk* and Δ*Shareholder*

[20] The 2006 OECD Tax Administration Guide is available from the OECD website (https://read.oecd-ilibrary.org/taxation/tax-administration-in-oecd-and-selected-non-oecd-countries_9789264064904-en#page117, last accessed February 8, 2023), as is the 2013 update (https://read.oecd-ilibrary.org/taxation/tax-administration-2013_9789264200814-en#page187, last accessed February 8, 2023). Note also that in neither version of the Tax Administration Guide (OECD 2006, 2013) are tax enforcement data noted for Peru, the Philippines, or Thailand, which, in my sample, correspond to about 3,456 firm–year observations.

rights^{GC}×Δ*High tax enforcement*) in the regression. The results in column (3) of Table 5 show that the two interaction terms have similar statistical significance and economic magnitudes to those reported in columns (1) and (2). This finding suggests that transfer pricing rules and tax enforcement complement each other and are equally responsible for reducing tax avoidance.

4.4 Additional evidence on firm value and corporate tax revenue

Finally, I extend the analysis to consider the implications of stronger minority shareholder rights on firm value and corporate tax revenue. In the spirit of Desai et al. (2007), I first test whether the alignment of incentives between the government and minority shareholders in monitoring insiders and preventing them from shrinking the corporate cash flow positively impacts firm value. To test this prediction, I compute two proxies for firm value (*Tobin's Q*) and use them as dependent variables.[21] I then augment equation (1) with Δ*High tax enforcement* and its interaction with Δ*Shareholder rights*^{GC}. Panel A of Table 6 presents the coefficient estimates of the main variables of interest. The Δ*Shareholder rights*^{GC} coefficient is positive and statistically significant at conventional levels. Furthermore, I find the interaction between Δ*Shareholder rights*^{GC} and Δ*High tax enforcement* to be positively related to firm value. In economic terms, the combined effects of stronger minority shareholder rights and tax enforcement increase firm value by about five to 8 percentage points for the average firm in the sample.[22]

Second, I test the revenue consequences of minority shareholder rights changes. In Panel B of Table 6, I find that increases in minority shareholder protection are positively associated with corporate tax revenue. Using the approach of Figure 3, I compute the elasticity and find that a 1% increase in the minority shareholder rights indicator is associated with a 0.55% increase in a country's corporate tax revenue relative to its GDP.

5. Exploiting the Italian 1998 minority shareholder rights reform

While the prior analyses are valuable in assessing how minority shareholder rights relate to tax avoidance, relying solely on an international sample can come at the cost of a less explicit relation between minority shareholder rights and tax avoidance due to potential confounding events and omitted variables biasing the results. The second set of analyses focuses on an Italian and a French setting around a major corporate governance reform in Italy in 1998. This test is

[21] Specifically, I compute two Tobin's Q variables that either include or exclude deferred taxes, because tax avoidance activity could be related to future tax liabilities.

[22] The calculation is as follows. I divide each joint coefficient of Panel A of Table 6 by the average Tobin's Q of the sample, to obtain the average increases in firm value.

essential to strengthen the identification and draw more precise inferences about the effect of minority shareholder rights on corporate tax avoidance.

5.1 Institutional framework and corporate governance system in Italy: The 1998 Draghi reform

Italy represents an ideal setting to further examine the negative effect of minority shareholder rights on tax avoidance because, in the 1990s, the country featured weak legal protection of minority shareholders and high ownership concentration, with cross-holdings and pyramidal group structures, which made it easier for insiders to engage in transactions with affiliated entities through transfer pricing to extract private benefits for themselves and avoid taxes (Zingales 1994; Volpin 2002; Enriques and Volpin 2007).[23] To illustrate, consider the case of Parmalat, a prominent example in which insiders extracted significant firm value through tunneling transactions.[24] The story begins when Calisto Tanzi, the controlling shareholder, inherited a small family business in the 1960s, which he took public on the Milan stock exchange in 1989. Parmalat was a fast-growing company that controlled 58 companies (33 based outside Italy) and mainly produced milk and dairy products worldwide. However, over the years, Parmalat also grew into a multinational company by diversifying outside the food industry, mainly into soccer, the pet project of Calisto Tanzi's son Stefano, and tourism, the pet project of Tanzi's daughter Francesca. Thus, the peculiar characteristic of Parmalat was the significant number of business and geographic segments, which allowed the Tanzis to systematically engage in RPTs at other than "fair" arm's length terms and to transfer firm resources to the other businesses directly owned by the Tanzis and located in tax haven countries, such as the Cayman Islands, Luxembourg, and Ireland. These complex transfer pricing schemes—which typically involved selling outputs to the other businesses owned by the Tanzis for below-market prices or purchasing inputs at above-market prices—allowed the Tanzis to siphon off about USD 3 billion from minority shareholders and the government in unpaid taxes from 1990 to December 2003, when Parmalat collapsed, and Calisto Tanzi was jailed (Enriques and Volpin 2007).

However, Parmalat is an extreme example of expropriation. Dyck and Zingales (2004) note that private benefits of control and minor expropriation were systemic in Italy in the 1990s,

[23] Shleifer and Vishny (1997, 742) state, "In many countries today, the law protects investors better than it does in Russia, Korea, or Italy." Similarly, Bianchi et al. (2001, 2) argue that "the institutional framework underlying this structure of corporate governance has been characterized by quite limited safeguards for minority shareholders … especially with regard to intra-group transactions."

[24] See the U.S. Securities and Exchange Commission's filings on the Parmalat's case (available at https://www.sec.gov/litigation/complaints/comp18803.pdf, last accessed February 8, 2023).

constraining the country's financial development. To make the Italian equity market more attractive to outside investors and to ensure minority shareholders greater protection against the risk of expropriation, in 1998, the first Prodi cabinet amended the corporate governance laws on public firms. The reform, known as the Draghi Law (Decree No. 58/1998), became effective on July 1, 1998, and disciplined minority shareholders' representation on the board and approval of RPTs conducted with affiliated entities, with a view of curbing tunneling transactions and strengthening the protection of outside investors. The law also granted previously unavailable governance remedies or subject to higher ownership thresholds. After the reform, even minority shareholders representing a very low fraction of a company's capital could sue directors derivatively. Moreover, the law required full disclosure of all shareholder agreements (i.e., a *voting syndicate*), which were used to enhance insiders' voting power.[25] Finally, the law broadened the powers of the Italian Security Exchange Commission (Consob) to request information and execute ad hoc inspections on governance- and disclosure-related issues on RPTs that could harm minority shareholders. In sum, the 1998 Italian reform significantly improved the corporate governance framework of listed firms in Italy and increased the cost of income diversion for insiders.

To study the effect of the reform on the tax avoidance of Italian firms, I implement a DiD research design. Specifically, I compare the tax avoidance of Italian-listed firms (*treatment* group) *before* and *after* the reform to a suitable set of *control* group firms that are not subject to the law change but are subject to similar economic and legal conditions. To this end, I apply several selection criteria. First, to mitigate concerns about confounding events and omitted variables, I test the effect of the 1998 reform on tax avoidance using the three years before the reform (pre-reform period) and the three years after it (post-reform period). This requirement also ensures that I have sufficient observations to preserve statistical power. Within the six-year window, I select listed firms from European countries that share similar economic conditions as Italy and have a French legal origin since the historical origin of a country's laws correlates with its corporate governance rules and regulations (La Porta et al. 2008). This process narrows down the counterfactual to firms from seven potential countries: Belgium, France, Greece, the Netherlands, Portugal, Spain, and Turkey. Third, I verify whether these selected countries undertook any corporate governance or

[25] Before the reform, shareholder agreements had to be reported within five days to the Consob and their *essential* content published in the press. After the reform, not only must they be reported to the Consob within five days and their *full* content published in the press, but also they must be deposited with the company register and made available to the general public.

tax reform during the six-year period that could affect a firm's tax avoidance strategy. According to Fauver et al. (2017), Belgium in 1998, Greece in 1999, the Netherlands in 1997, Portugal in 1999, Spain in 1998, and Turkey in 1999 all implemented corporate governance reforms, whereas France did not reform its corporate governance rules until 2001. Hence, I exclude firms from Belgium, Greece, the Netherlands, Portugal, Spain, and Turkey to avoid bias in the results. Fourth, I verify whether France enacted any significant tax reform over the entire sample period (e.g., changes in anti-avoidance rules or investment tax credits) that could affect tax avoidance strategies. Like Italy, France maintained a relatively high statutory tax rate and did not enact other significant tax reforms over the entire sample period (Bruehne et al. 2023). This sampling process leads me to conclude that French-listed firms could serve as a suitable *control* group in the DiD analysis.

5.2 Estimation strategy

I test the hypothesis of Section 2 in a DiD framework that compares the tax avoidance of Italian and French-listed firms around the 1998 minority shareholder rights reform in Italy. The estimation equation is as follows:

$$ETR_{i,t} = \alpha_0 + \beta_1 Treatment_i \times Post_t + \beta_2 X_{i,t} + \beta_3 \prod_{k,t} + \upsilon_i + \varphi_j * \omega_t + \varepsilon_{i,t} \quad (2)$$

where the dependent variable is the tax avoidance outcome of firm *i* in year *t* (*ETR*). Following prior literature (e.g., Dyreng et al. 2008, 2010), I define *ETR* as income taxes divided by pre-tax income minus special items and winsorize this measure at zero and one. The independent variable of interest is the interaction between *Treatment* and *Post*, where *Post* is a dummy variable equal to one for all the years after the reform (1998–2000). I assign a firm to the treatment group (*Treatment*) if it is incorporated and headquartered in Italy in the pre-reform year.

The DiD approach identifies the tax avoidance effects of the reform on Italian vis-à-vis French listed firms. Thus, the interaction of *Treatment* and *Post* captures differences in the level of tax avoidance between Italian and French companies after the 1998 reform. Consistent with my prior findings, I expect a positive sign for β_1, indicating that Italian firms have higher ETRs than French firms after the reform.

One could expect potential differences in economic activities between the treatment group (Italian firms) and the control group (French firms) to bias the results. To alleviate this concern, before estimating equation (2), I apply entropy balancing matching to find matched French firms

that operate in the same industry and have similar characteristics in the pre-reform year.[26] This approach has two key advantages. First, the reform does not alter the assignment to the treatment or control group because sorting and matching are based on pre-reform characteristics. Second, firms cannot enter the sample after the reform. This ensures that the results are not driven by new firms and their tax avoidance strategies after the 1998 reform. Following this approach, I thus obtain two groups of firms that are comparable in the most important respects but differ in their incorporation and headquarters countries. Moreover, while the matching strategy eliminates differences in observable firm characteristics, the DiD approach accounts for time-invariant differences between the treatment and control groups, thereby providing confidence that the analysis around the 1998 reform effectively captures the tax avoidance effect and is not driven by other differences between the compared firms.

I add the vector ($X_{i,t}$) of firm-level variables, which includes size, leverage, the market-to-book ratio, intangible assets, R&D, ROA, capital intensity, cash, accruals, the Z-score, and a dummy variable proxying for whether a firm reports under domestic accounting standards. Furthermore, I control for the country's economic development with the GDP per capita and the country's corporate tax rate ($\prod_{k,t}$). All variables are described in the Appendix. The specification also controls for firm fixed effects (υ_i) and industry–year fixed effects defined at the two-digit SIC code level ($\varphi_j * \omega_t$). While the former set of fixed effects captures time-invariant firm-specific influences on levels of tax avoidance, the latter set of fixed effects accounts for time-varying industry shocks that could affect firms' tax avoidance. Note that including firm fixed effects captures the main effect of *Treatment*, which is time-invariant. Similarly, industry–year fixed effects capture the main effect of *Post*. Therefore, I cannot report *Treatment* and *Post* in my specification. I base the statistical inference on robust standard errors clustered at the firm level.

5.3 Data and descriptive statistics

I use firm-level data from the Compustat Global database for firms incorporated and headquartered in Italy or France. I exclude i) firms offering financial (SIC codes 6000–6999) or utility services (SIC codes 4900–4999), ii) loss-making firms, and iii) firms with negative equity, cash holdings, or total assets. The final sample consists of data from 481 companies from 1995 to 2000, a total of 2,078 firm–year observations. All the financial data are converted into real U.S.

[26] Specifically, I match on all observable firm characteristics included in equation (2) in 1997. Table A.5 of the Online Appendix provides information on the matching procedure.

dollars. Table 7 presents the summary statistics. Firms have an ETR of 36%, below the average statutory corporate tax rate (about 40%). Firms also have an average leverage ratio of 22%, a cash-to-assets ratio of 14%, and a ROA of 14%. In the regression model, I further include the natural logarithm of total assets (with an average of 6.30) as a measure of firm size and a dummy variable for domestic accounting standards (with an average of 84%).

5.4 Results

Table 8 presents the coefficient estimates from testing equation (2), which regresses the ETR on the interaction of *Treatment* and *Post*. Columns (1) and (2) of Table 8 use the unmatched sample, whereas columns (3) and (4) use the matched sample. The estimated coefficient of *Treatment*×*Post* is positive and significant in all specifications. In line with the prior findings and my theoretical hypothesis, this result indicates that stronger minority shareholder protection negatively impacts tax avoidance. The coefficient estimates are also very similar when I include control variables, suggesting that firm- or country-level characteristics do not affect the results. For the matched sample, which accounts for differences in the economic activities of Italian and French firms, the coefficient is 0.0662 and statistically significant at the 5% level. To put this figure into perspective, the increase of 6.62% in the ETR of Italian firms compared to French firms is equivalent to an increase in income taxes of USD 15 million for the average sample firm.[27]

Next, I examine whether treated and control firms follow parallel trends absent the reform. Table 9 includes interaction terms with the pre-reform and post-reform dummy variables. The point estimates for the pre-reform and post-reform years are not statistically different from zero. This result suggests that treated and control firms follow parallel trends before the reform and do not delay their tax avoidance response. Fig. 5 plots the ETR for each group over 1995–2000 to corroborate this interpretation. I observe a parallel trend in the ETRs of Italian and French firms before the reform. Following the reform, the ETRs of these two groups diverge, with the ETR of Italian firms significantly exceeding that of French firms.

Motivated by the evidence that stronger minority shareholder rights decrease tax avoidance, I then implement a path analysis to assess the underlying mechanism. Because transfer pricing schemes and RPTs are inherently difficult to observe, I investigate whether firms changed their operational complexity after the 1998 reform and whether such a change led to reduced tax

[27] The calculation is as follows. I multiply the average pre-tax income of the sample by the coefficient estimate in column (4) of Table 8 (= USD 226.03 million×0.0662), to obtain USD 15 million.

avoidance. As in the Parmalat case, the operational complexity, i.e., the business and geographic segments the firm operates in, could be induced by transfer pricing schemes and RPTs.[28] Following Omer et al. (2006) and Blouin and Krull (2016), I use two mediating variables to measure operational complexity based either on the number of business segments (*Business concentration*) or on the number of geographic segments (*Geographic segments*). I expect *Business concentration* (*Geographic segments*) to increase (decrease) after the reform. I then operationalize the path analysis by estimating a structural equation model as in Shevlin et al. (2020):

$$Channel_{i,t} = \beta_0 + \beta_1 Treatment_i \times Post_t + \beta_2 X_{i,t} + \beta_3 \prod_{k,t} + \upsilon_i + \varphi_j * \omega_t + \varepsilon_{i,t} \quad (3)$$

$$ETR_{i,t} = \alpha_0 + \alpha_1 Treatment_i \times Post_t + \alpha_2 X_{i,t} + \alpha_3 \prod_{k,t} + \alpha_4 Channel_{i,t} + \upsilon_i + \varphi_j * \omega_t + \varepsilon_{i,t} \quad (4)$$

in equation (3), the dependent variable, *Channel*, is either *Business concentration* or *Geographic segments*, while in equation (4) the dependent variable is the firm's *ETR*. The path coefficient in equation (4), α_1, is the magnitude of the direct path from the minority shareholder protection reform to tax avoidance after including each mediating variable. The path coefficient $\beta_1 \times \alpha_4$ gives the total magnitude of the indirect (mediated) path, where β_1 is an estimate of the association between the reform coefficient and the mediating variable, and α_4 is the association between the mediating variable and tax avoidance. Table 10 reports the results.[29] Both columns show that after including each mediating variable, the direct path, α_1, remains significantly positive.[30] The indirect path, β_1, is significantly positive (negative), suggesting that business (geographic) complexities are significantly lower for Italian firms than French firms after the reform. Moreover, the path coefficients between the mediating variables and tax avoidance, α_4, are statistically significant. Hence, I find a net positive indirect effect by combining the two paths, $\beta_1 \times \alpha_4$. Collectively, the tax avoidance response in the baseline analysis of Table 8, along with the results on the path analysis of Table 10, are consistent with a negative effect of minority shareholder rights on tax avoidance and suggest that when minority shareholder rights are stronger, insiders have fewer opportunities to extract private benefits through transfer pricing schemes and RPTs and avoid taxes.

[28] Bushman et al. (2004, 175) argue that "operational complexities can arise as firms act to arbitrage institutional restrictions such as tax codes and financial restrictions…. For example, firms may employ complex transfer pricing schemes to shift profits to low tax jurisdictions that can complicate efforts by shareholders and board members to understand firms' foreign operations."

[29] The table displays standardized path coefficients to allow for interpretation and comparison (Chen et al. 2021).

[30] This result also suggests that other *potential* mediating paths may exist (see, also, Shevlin et al. (2020) for a similar interpretation).

Finally, because I cannot entirely rule out intrinsic differences between Italian and French firms, in Table A.6 of the Online Appendix, I try to mitigate identification concerns by estimating equation (2) using Italian unlisted firms from Orbis as an alternative matched control group (i.e., 4,386 unique firms and 16,141 firm-year observations from 1995 to 2000). Reassuringly, the main conclusion remains unaffected.

6. Conclusion

In this paper, I examine whether minority shareholder protection meaningfully reduces tax avoidance by exploiting changes in minority shareholder rights in an international panel across 33 countries from 2002 to 2013. I strengthen the identification using a minority shareholder rights reform in Italy from 1995 to 2000. The analyses show that firms reduce tax avoidance when minority shareholder rights become stronger, consistent with a negative spillover effect. These findings are also economically significant, with the elasticity of ETR to changes in minority shareholder rights being generally higher than those of the other control variables for the average firm in the international sample.

Further analyses suggest that minority shareholder protection negatively impacts tax avoidance by reducing a firm's business and geographic complexities, undermining insiders' ability to siphon corporate resources at the expense of the government and minority shareholders. I also find that the reduction in tax avoidance is due not only to the higher protection granted to minority shareholders but also to the incentives provided by other rules. While stronger minority shareholder rights constrain insiders from siphoning corporate funds at the expense of outside investors, stricter transfer pricing rules and stronger tax enforcement further limit the possibility of diverting resources for personal benefit and avoiding taxes. Overall, these findings support the notion that minority shareholder protection has a deterring effect on tax avoidance—which is critical for policymakers and regulators concerned with curbing harmful tax practices—as well as the theoretical hypotheses put forth by prior literature on the alignment of incentives between the government and minority shareholders in monitoring insiders and preventing wealth extraction.

References

Amiram, D., Bauer, A.M., Frank, M.M., 2019. Tax avoidance at public corporations driven by shareholder taxes: Evidence from changes in dividend tax policy. *The Accounting Review* 94(5), 27–55.

Armstrong, C.S., Blouin, J.L., Larcker, D.F., 2012. The incentives for tax planning. *Journal of Accounting and Economics* 53, 391–411.

Asonuma, T., Trebesch, C., 2016. Sovereign debt restructurings: Preemptive or post-default. *Journal of the European Economic Association* 15(1), 175–214.

Atwood, T.J., Drake, M.S., Myers, J.N., Myers, L.A., 2012. Home country tax system characteristics and corporate tax avoidance: International evidence. *The Accounting Review* 87, 1831–1860.

Bae, K., Goyal, V., 2009. Creditor rights, enforcement and bank loans. *Journal of Finance* 64(2), 823–860.

Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust difference-in-differences estimates? *Quarterly Journal of Economics* 119, 249–275.

Bertrand, M., Mullainathan, S., 2003. Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy* 111, 1043–1075.

Beuselinck, C., Deloof, M., Vanstraelen, A., 2015. Cross-jurisdictional income shifting and tax enforcement: Evidence from public versus private multinationals. *Review of Accounting Studies* 20(2), 710–746.

Bianchi, M., Bianco, M., Enriques, L., 2001. Pyramidal groups and the separation between ownership and control in Italy, in: Barca, F., Becht, M. (Eds.), *The Control of Corporate Europe*, Oxford University Press, pp. 154–186.

Blouin, J., Krull, L., 2016. Does organizational form affect firms' foreign operations? The role of check-the-box on multinational tax planning. Working paper, University of Pennsylvania.

Brockman, P., Chung, D. Y., 2003. Investor protection and firm liquidity. *Journal of Finance* 58(2), 921–937.

Bruehne, A.I., Jacob, M., Schütt, H.H., 2023. Technological changes and countries' tax policy design: Evidence from anti–tax avoidance rules. *Management Science*, forthcoming.

Bushman, R., Chen, Q., Engel, E., Smith, A., 2004. Financial accounting information, organizational complexity and corporate governance systems. *Journal of Accounting and Economics* 37(2), 167–201.

Bushman, R.M., Smith, A.J., 2001. Financial accounting information and corporate governance. *Journal of Accounting and Economics* 32(1–3), 237–333.

Chen, F., Li, Q., Xu, L. 2021. Universal demand laws and the monitoring demand for accounting conservatism. *Journal of Business Finance & Accounting* 48(7–8), 1246–1289.

Chi, S., Huang, S., Sanchez, J.M., 2017. CEO inside debt incentives and corporate tax sheltering. *Journal of Accounting Research* 55 (4), 837–876.

Chyz, J.A., Leung, W.S. C., Li, O.Z., Rui, O.M., 2013. Labor unions and tax aggressiveness. *Journal of Financial Economics* 108, 675–698.

Claessens, S., Djankov, S., Fan, J., Lang, L., 2002. Disentangling the incentive and entrenchment effects of large shareholders. *Journal of Finance* 57, 2741–2771.

Claessens, S., Djankov, S., Lang, L., 2000. The separation of ownership and control in East Asian corporations. *Journal of Financial Economics* 58, 81–112.

Desai, M., Dyck, I., Zingales, L., 2007. Theft and taxes. *Journal of Financial Economics* 84, 591–623.

De Vito, A., Jacob, M., 2023. The role of creditor protection in lending and tax avoidance. *Journal of Financial and Quantitative Analysis*, 58(5), 2096–2130.
Dischinger, M., Knoll, B., Riedel, N., 2014. The role of headquarters in multinational profit shifting strategies. *International Tax and Public Finance* 21(2), 248–271.
Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2008. The law and economics of self-dealing. *Journal of Financial Economics* 88, 430–465.
Dyck, I., Zingales, L., 2004. Private benefits of control: An international comparison. *Journal of Finance* 59, 537–600.
Dyreng, S.D., Hanlon, M., Maydew, E.L., 2008. Long-run corporate tax avoidance. *The Accounting Review* 83, 61–82.
Dyreng, S.D., Hanlon, M., Maydew, E.L., 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85, 1163–1189.
Edwards, A., Schwab, C., Shevlin, T., 2016. Financial constraints and cash tax savings. *The Accounting Review* 91, 859–881.
El Ghoul, S., Guedhami, O., Pittman, J., 2011. The role of IRS monitoring in equity pricing in public firms. *Contemporary Accounting Research* 28(2), 643–674.
Enriques, L., 2009. Corporate governance reforms in Italy: What has been done and what is left to do. *European Business Organization Law Review* 10, 477–513.
Enriques, L., Volpin, P., 2007. Corporate governance reforms in continental Europe. *Journal of Economic Perspectives* 21(1), 117–140.
Faccio, M., Lang, L., 2002. The ultimate ownership of Western European corporations. *Journal of Financial Economics* 65, 365–395.
Faccio, M., Xu, J., 2015. Taxes and capital structure. *Journal of Financial and Quantitative Analysis* 50(3), 277–300.
Fauver, L., Hung, M., Li, X., Taboada, A.G., 2017. Board reforms and firm value: Worldwide evidence. *Journal of Financial Economics* 125, 120–142.
Gaertner, F.B., 2014. CEO after-tax compensation incentives and corporate tax avoidance. *Contemporary Accounting Research* 31(4), 1077–1102.
Goncharov, I., Jacob, M., 2014. Why do countries mandate accrual accounting for tax purposes? *Journal of Accounting Research* 52, 1127–1163.
Graham, J.R., Tucker, A.L., 2006. Tax shelters and corporate debt policy. *Journal of Financial Economics* 81, 563–594.
Guedhami, O., Pittman, J., 2008. The importance of IRS monitoring to debt pricing in private firms. *Journal of Financial Economics* 90(1), 38–58.
Guillén, M.F., Capron, L., 2015. State capacity, minority shareholder protections, and stock market development. *Administrative Science Quarterly* 61(1), 125–160.
Gupta, S., Newberry, K., 1997. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16(1), 1–34.
Hail, L., Leuz, C., 2006. International differences in cost of capital: Do legal institutions and securities regulation matter? *Journal of Accounting Research* 44, 485–531.
Hanlon, M., Hoopes, J.L., Shroff, N., 2014. The effect of tax authority monitoring and enforcement on financial reporting quality. *Journal of the American Taxation Association* 36(2), 137–170.
Hart, O., 1995. Corporate governance: some theory and implications. *The Economic Journal*, 105(430), 678-689.
Heckemeyer, J. H., Overesch, M., 2017. Multinationals' profit response to tax differentials: Effect size and shifting channels. *Canadian Journal of Economics*, 50(4), 965–994.

Heider, F., Ljungqvist, A., 2015. As certain as debt and taxes: Estimating the tax sensitivity of leverage from state tax changes. *Journal of Financial Economics* 118, 684–712.
Hoopes, J.L., Mescall, D., Pittman, J.A., 2012. Do IRS audits deter corporate tax avoidance? *The Accounting Review* 87, 1603–1639.
Hsu, P., Tan, X., Xu, Y., 2014. Financial development and innovation: Cross-country evidence. *Journal of Financial Economics* 112(1), 116–135.
Jensen, M. C., and Meckling, W. H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
Jian, M., Wong, T., 2010. Propping through related party transactions. *Review of Accounting Studies* 15, 70–105.
Johnson, S., La Porta, R., Shleifer, A., Lopez-de-Silanes., F., 2000. Tunneling. *American Economic Review Papers and Proceedings* 90, 22–27.
Kanagaretnam, K., Lee, J., Lim, C.Y., Lobo, G., 2018. Societal trust and corporate tax avoidance. *Review of Accounting Studies* 23, 1588–1628.
Laeven, L., Majnoni, G., 2005. Does judicial efficiency lower the cost of credit? *Journal of Banking and Finance* 29, 1791–1812.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. *Journal of Finance* 54, 471–517.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2008. The economic consequences of legal origins. *Journal of Economic Literature* 46, 285–332.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1997. Legal determinants of external finance. *Journal of Finance* 52, 1131–1150.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1998. Law and finance. *Journal of Political Economy* 106, 1113–1155.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000a. Investor protection and corporate governance. *Journal of Financial Economics* 58, 3–27.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000b. Agency problems and dividend policies around the world. *Journal of Finance* 55(1), 1–33.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2002. Investor protection and corporate valuation. *Journal of Finance* 57(3), 1147–1170.
Leuz, C., Nanda, D., Wysocki, P.D., 2003. Earnings management and investor protection: An international comparison. *Journal of Financial Economics* 69(3), 505–527.
Ljungqvist, A., Zhang, L., Zuo, L., 2017. Sharing risk with the government: How taxes affect corporate risk taking. *Journal of Accounting Research* 55(3), 669–707.
McLean, R. D., Zhang, T., Zhao, M., 2012. Why does the law matter? Investor protection and its effects on investment, finance, and growth. *Journal of Finance* 67(1), 313–350.
McNichols, M.F., Stubben, S.R., 2008. Does earnings management affect firms' investment decisions? *The Accounting Review* 83(6), 1571–603.
Mescall, D., Klassen, K. J., 2018. How does transfer pricing risk affect premiums in cross-border mergers and acquisitions? *Contemporary Accounting Research*, 35(2), 830–865.
Morellec, E., Nikolov, B., Schürhoff, N., 2018. Agency conflicts around the world. *Review of Financial Studies* 31(11), 4232–4287.
OECD, 2006. *Tax administration in OECD and selected non-OECD countries*. OECD Publishing, Paris.
OECD, 2012. *Related party transactions and minority shareholder rights*. OECD Publishing, Paris.

OECD, 2013. *Tax Administration 2013. Comparative Information on OECD and Other Advanced and Emerging Economies*. OECD Publishing, Paris.

OECD, 2020. *Tax Policy Reforms 2020. OECD and Selected Partner Economies*. OECD Publishing, Paris.

Omer, T. C., Bedard, J. C., Falsetta, D., 2006. Auditor-provided tax services: The effects of a changing regulatory environment. *The Accounting Review* 81(5),1095–1117.

Powers, K., Robinson, J.R., Stomberg. B., 2016. How do CEO incentives affect corporate tax planning and financial reporting of income taxes? *Review of Accounting Studies* 21(2), 672–710.

Rego, S.O., 2003. Tax-avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research* 20(4), 805–833.

Rego, S.O., Wilson, R., 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research* 50(3), 775–810.

Robinson, J.R., Sikes, S.A., Weaver, C.D., 2010. Performance measurement of corporate tax departments. *The Accounting Review* 85(3), 1035–1064.

Shevlin, T., Urcan, O., Vasvari, F. P., 2020. Corporate tax avoidance and debt costs. *Journal of American Taxation Association* 42(2), 117–143.

Shevlin, T., Shivakumar, L., Urcan, O., 2019. Macroeconomic effects of corporate tax policy. *Journal of Accounting and Economics* 68(1), 101233.

Shevlin, T., Thornock, J., Williams, B., 2017. An examination of firms' responses to tax forgiveness. *Review of Accounting Studies* 22, 577–607.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. *Journal of Finance* 52(2), 737–783.

Volpin, P.F., 2002. Governance with poor investor protection: Evidence from top executive turnover in Italy. *Journal of Financial Economics* 64, 61–90.

Yost, B.P., Shu, S., 2022. Does tax enforcement deter managers' self-dealing? *Journal of Accounting and Economics* 74, 101512.

Zingales, L., 1994. The value of the voting right: A study of the Milan stock exchange. *Review of Financial Studies* 7(1), 125–148.

Appendix: Variable definitions

Variable	Definition
Firm-level variables	
ETR	Income taxes (*TXT*) divided by pretax income minus special items (*PI* − *SPI*). The variable ranges between 0 and 1. (Source: Compustat)
Corporate tax revenue	Corporate tax revenue scaled by the GDP for each of the 33 countries from 2002 to 2013. (Source: World Bank)
Business concentration	The revenue-based Herfindahl-Hirschman index calculated as the sum of the squares of each business segment's sales as a percentage of the total firm sales. (Source: Datastream)
Geographic segments	Natural logarithm of the firm's number of geographic segments plus 1. (Source: Datastream)
Tobin's Q (no deferred taxes)	Total assets (*AT*) plus the market value of equity minus deferred taxes (*TXDB*) divided by total assets minus 0.1 times common equity (*CEQ*), plus the market value of equity. This definition limits the variable to a maximum value of 10. (Source: Compustat and Datastream)
Tobin's Q (with deferred taxes)	Total assets (*AT*) plus the market value of equity divided by total assets minus 0.1 times common equity (*CEQ*), plus the market value of equity. This definition limits the variable to a maximum value of 10. (Source: Compustat and Datastream)
Firm size	Natural logarithm of the firm's total assets (*AT*). (Source: Compustat)
Leverage	Long-term debt (*DLTT*) relative to total assets (*AT*). (Source: Compustat)
Accruals	The sum of changes in net non-cash working capital (Δ*WC*), net noncurrent operating assets (Δ*NCO*), and net financial assets (Δ*FIN*). (Source: Compustat)
Market-to-book	Common shares outstanding (*CSHO*) multiplied by the stock price at the fiscal year-end (*PRCCF*), divided by total common equity (*CEQ*). (Source: Compustat)
R&D	R&D expenses (*XRD*) relative to total sales (*SALE*). I replace missing values with 0 (Dyreng et al. 2010). (Source: Compustat)
Intangible assets	Intangible assets (*INTAN*) relative to total assets (*AT*). (Source: Compustat)
ROA	Earnings before interest, taxes, depreciation, and amortization relative to the prior year's total assets (*AT*). (Source: Compustat)
Capital intensity	Ratio of property, plant, and equipment (*PPEGT*) relative to the prior year's total assets (*AT*). (Source: Compustat)
Cash	Cash and short-term investments (*CHE*) scaled by lagged total assets (*AT*). (Source: Compustat)
Z-score	The firm's Altman (1968) Z-score calculated as [3.3(*EBIT*/*AT*)] + [1.2*(*WCAP*/*AT*)] + [0.999*(*SALE*/*AT*)] + [1.4*(*RE*/*AT*)] + [0.4*(*CEQ*/*AT*)]. (Source: Compustat)
Domestic accounting standards	Indicator variable that takes the value of 1 if a firm reports under the domestic accounting standards, and 0 otherwise. (Source: Datastream)
Country-level variables	
Treatment	Indicator variable that takes the value of 1 if a firm is incorporated and headquartered in Italy, and 0 otherwise.
Post	Indicator variable that takes the value of 1 for all the years after the minority shareholder rights reform in Italy (1998 to 2000), and 0 otherwise.
$Shareholder\ rights^{GC}$	Minority shareholder rights index. (Source: Guillén and Capron 2015)
$Shareholder\ rights^{Other\ countries}$	Average minority shareholder rights index for the countries within the same legal origin and economic development clusters. (Source: Guillén and Capron 2015)

High-transfer pricing risk	Indicator variable that takes the value of 1 if the transfer pricing score is above the yearly industry (two-digit SIC code) median, and 0 otherwise. (Source: Mescall and Klassen 2018).
High tax enforcement	Indicator variable that takes the value of 1 if the ratio of the number of citizens to full-time employees at the central government tax agency per 1,000 inhabitants in country *k*, industry *j* (two-digit SIC code), and year *t* is below the median, and 0 otherwise. (Source: OECD 2006, 2013)
IFRS implementation	Indicator variable that takes one if a country *k* in year *t* has adopted IFRS, and 0 otherwise. (Source: IFRS Foundation)
Corporate tax rate	The top marginal corporate tax rate in country *k* in year *t*. (Source: KPMG and E&Y corporate tax guides)
Miller tax index	[1− (1− corporate tax rate) × (1 – dividend tax) / (1 – personal income tax)]. (Source: KPMG and Ernst & Young)
GDP per capita	Natural logarithm of the GDP per capita in 2005 U.S. dollars. (Source: IMF)
Inflation	Rate of price change in country *k*, as measured by the annual growth rate of the GDP implicit deflator. (Source: IMF)
Creditor protection	For 2002–2003, I use the creditor rights index of La Porta et al. (1997, 1998). For the period 2004–2013, I use the strength of the legal rights index from the World Bank Doing Business reports and normalize it to the range of 0 to 4. (Source: La Porta et al. 1997, 1998; World Bank)
Enforcement	Control of corruption from the World Bank governance variables. (Source: World Bank)

Fig. 1. Trends in minority shareholder rights around the world

This figure displays the trends in minority shareholder rights across 33 countries from 2002 to 2013.

Panel A: General trend in shareholder rights *Panel B: Trend in shareholder rights by legal*

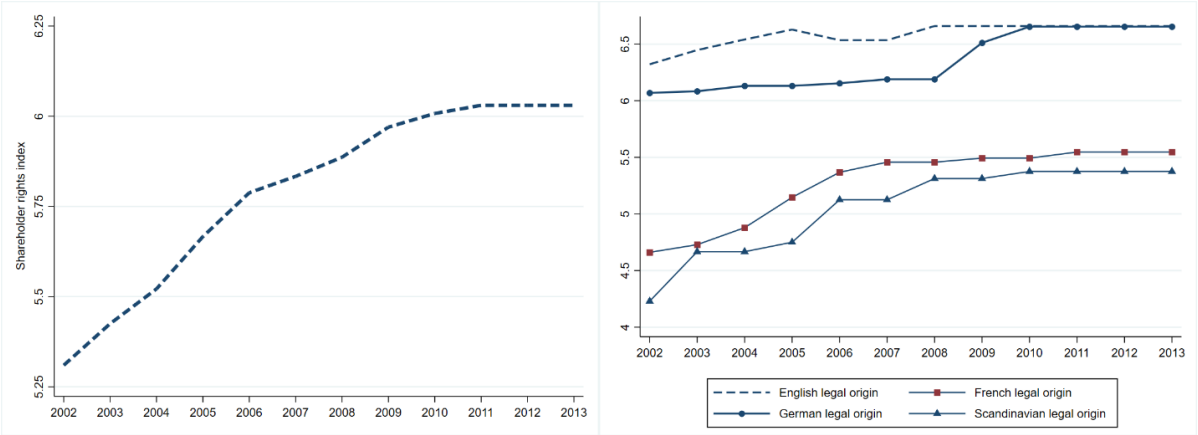


Fig. 2. Cumulative changes in tax avoidance: Cross-country setting

This figure plots the cumulative differences in the *ETR* values of treated firms relative to counterfactual firms from year $t-2$ to year $t+2$. Treated firms are in countries with minority shareholder rights changes in year t_0 across the 33 countries between 2002 and 2013. The counterfactual firms are from countries in the same industry and year with similar legal origins and economic development. I estimate the cumulative treatment effects using equation (1). The connected line indicates the 95% confidence interval.

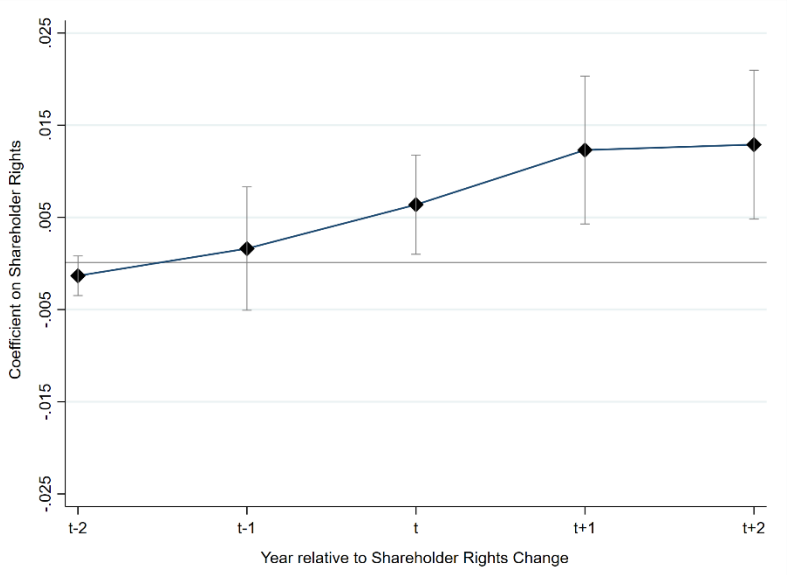


Fig. 3. Minority shareholder rights and tax avoidance: Economic magnitude

This figure shows the economic significance of the association between minority shareholder rights and tax avoidance across countries based on the regression coefficients from column (3) of Panel A of Table 3. The economic significance is assessed by computing the elasticity of *ETR* vis-à-vis each independent variable. The connected line indicates the 95% confidence interval.

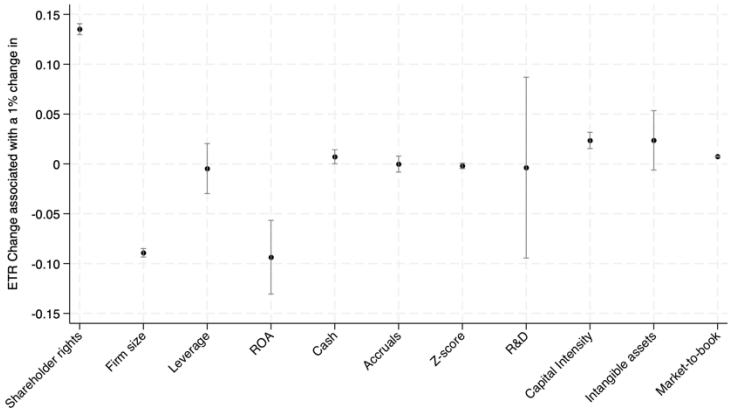
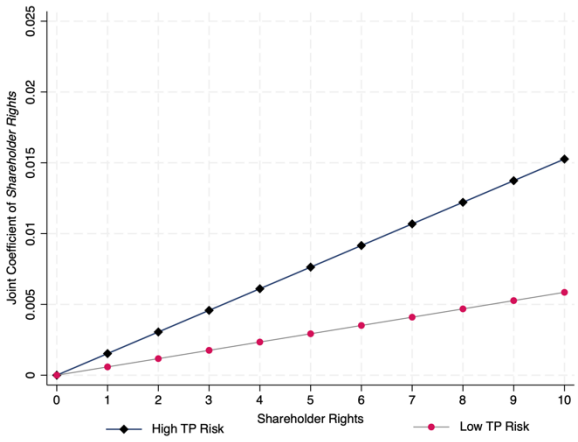


Fig. 4. Role of transfer pricing risk and tax enforcement in minority shareholder rights and tax avoidance

This figure illustrates the results in columns (1) and (2) of Table 5. The model specification in first differences includes firm controls, country controls, and country, industry–year and legal origin–economic development–year fixed effects.

Panel A: Shareholder rights, tax avoidance, and transfer pricing risk



Panel B: Shareholder rights, tax avoidance, and tax enforcement

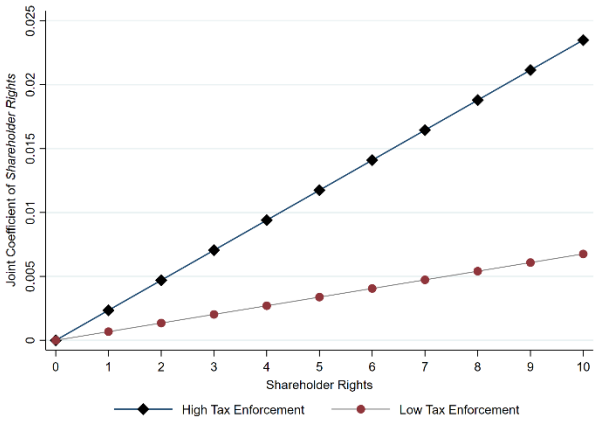


Fig. 5. Minority shareholder rights and tax avoidance: Italian and French settings

This figure plots the variable *ETR* for treated firms relative to counterfactual firms from 1995 to 2000. Treated firms are Italian-listed firms. Counterfactual firms are French-listed firms. I separately present the trends in ETR for treated firms (continuous line) and counterfactual firms (dotted line). The gray dotted line separates the pre-reform period from the post-reform years.

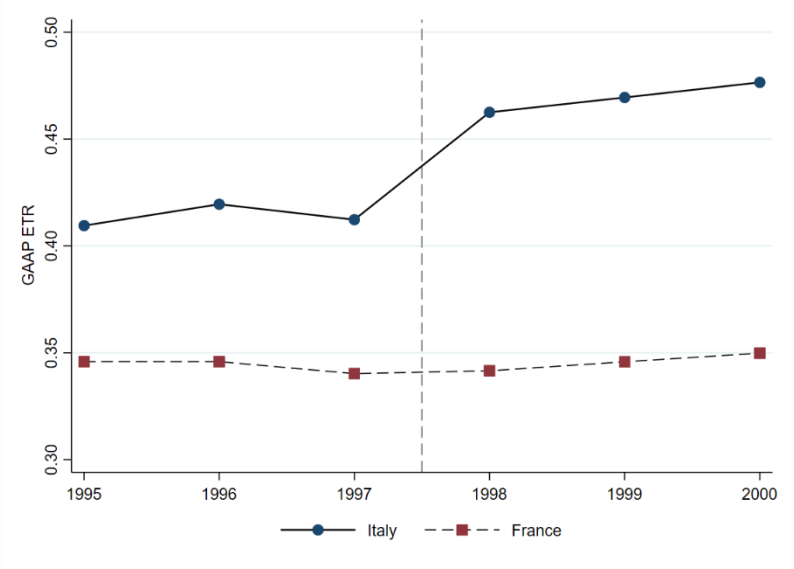


Table 1. Sample composition and country-specific statistics

This table provides an overview of the 33 sample countries and the strength of minority shareholder rights over 2002–2013. The Appendix provides the variable definitions.

Country	*Shareholder rights*^{GC}	Country	*Shareholder rights*^{GC}	Country	*Shareholder rights*^{GC}
Argentina	5.75	Germany	6.22	Philippines	3.15
Australia	6.75	Greece	5.02	Poland	7.15
Austria	5.27	Hong Kong	6.69	Portugal	5.94
Belgium	5.27	Italy	6.58	Singapore	7.25
Brazil	5.50	Japan	7.00	Spain	4.75
Canada	6.75	Korea	7.75	Sweden	5.85
Chile	4.25	Malaysia	6.25	Switzerland	4.50
China	6.63	Mexico	4.82	Thailand	5.07
Denmark	3.00	Netherlands	4.32	Turkey	6.10
Finland	6.00	Norway	5.49	United Kingdom	6.75
France	7.23	Peru	5.36	United States	7.23

Table 2. Summary statistics: Cross-country setting

This table reports summary statistics for the main variables in the regression models. The sample comprises 17,512 industrial firms (excluding financials and utilities) from Compustat North America and Compustat Global from 2002 to 2013. All non-indicator variables, except country-level variables, are winsorized at the first and 99th percentiles. The Appendix provides the variable definitions.

Variables	Obs.	Mean	Std. dev.	25th percentile	Median	75th percentile
Dependent variables						
ETR	98,834	0.2904	0.1816	0.1757	0.2869	0.3795
Country legal variables						
Shareholder rights^{GC}	98,834	6.6470	0.8540	6.5000	7.0000	7.2500
Firm-level controls						
Firm size	98,834	5.8993	1.8327	4.6816	5.7548	6.9889
Leverage	98,834	0.1034	0.1264	0.0006	0.0573	0.1663
ROA	98,834	0.1424	0.0974	0.0778	0.1220	0.1813
Cash	98,834	0.1875	0.1970	0.0578	0.1309	0.2519
Accruals	98,834	0.0029	0.1386	-0.0563	0.0032	0.0622
Z-score	98,834	1.8582	1.5978	1.2583	1.8238	2.4528
R&D	98,834	0.0160	0.0442	0.0000	0.0000	0.0094
Capital intensity	98,834	0.6089	0.4373	0.2692	0.5309	0.8601
Intangible assets	98,834	0.1011	0.1582	0.0031	0.0211	0.1337
Market-to-book	98,834	2.2115	2.7829	0.8926	1.5564	2.6835
Country-level controls						
Enforcement	98,834	1.0983	0.8756	0.3887	1.3533	1.7554
GDP per capita	98,834	10.1667	0.9480	9.5854	10.6845	10.7709
Miller tax index	98,834	0.0415	0.1550	-0.0676	0.0216	0.1941
Inflation	98,834	0.0203	0.0196	0.0070	0.0207	0.0302

Table 3. Minority shareholder rights and tax avoidance: Cross-country setting

This table examines the association between minority shareholder rights and tax avoidance across countries. The dependent variable is Δ*ETR*. The minority shareholder rights indicator is Δ*Shareholder rights*^{GC}. Panel A estimates the baseline analysis, whereas Panel B presents the lead-lag analysis. The model specifications in first differences include country, industry–year, and legal origin–economic development–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country–industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

Panel A: Baseline analysis

	Δ*ETR*			
	(1)	(2)	(3)	(4)
Δ*Shareholder rights*^{GC}	0.0060**	0.0069**	0.0059**	0.0065**
	(2.124)	(2.462)	(2.121)	(2.107)
Country controls	No	Yes	Yes	Yes
Firm controls	No	No	Yes	Yes
Δ*Shareholder rights*^{GC}×country fixed effects	No	No	No	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes
Obs.	98,834	98,834	98,834	98,834
Adj. R^2	0.002	0.003	0.008	0.009

Panel B: Lead-lag analysis

		Δ*ETR*		
		(1)	(2)	(3)
Δ*Shareholder rights*$^{GC}_{t+2}$	*Response before the change in minority shareholder rights*	-0.0060		-0.0050
		(-1.495)		(-1.254)
Δ*Shareholder rights*$^{GC}_{t+1}$		0.0007		0.0016
		(0.207)		(0.466)
Δ*Shareholder rights*$^{GC}_{t}$	*Immediate response*	0.0056**	0.0067**	0.0064**
		(2.015)	(2.411)	(2.320)
Δ*Shareholder rights*$^{GC}_{t-1}$	*Delayed response*		0.0062*	0.0059*
			(1.939)	(1.882)
Δ*Shareholder rights*$^{GC}_{t-2}$			0.0006	0.0006
			(0.993)	(0.961)
Country and firm controls		Yes	Yes	Yes
Country fixed effects		Yes	Yes	Yes
Industry–year fixed effects		Yes	Yes	Yes
Legal origin–economic development–year fixed effects		Yes	Yes	Yes
Obs.		98,834	98,834	98,834
Adj. R^2		0.008	0.008	0.008

Table 4. Minority shareholder rights and tax avoidance: Robustness tests

This table examines the robustness of the results reported in Panel A of Table 3. The dependent variable is Δ*ETR*. The minority shareholder rights indicator is Δ*Shareholder rights*^{GC}. The model specifications in first differences include country, industry–year, and legal origin–economic development–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country–industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	Δ*ETR*					
	Excluding economic crisis	*Excluding financial crisis*	*Sample period 2002–2006*	*Controlling for IFRS implementation*	*Controlling for other minority shareholders reforms*	*Controlling for creditor protection reforms*
	(1)	(2)	(3)	(4)	(5)	(6)
Δ*Shareholder rights*^{GC}	0.0046**	0.0086***	0.0105***	0.0060**	0.0095***	0.0061**
	(2.047)	(2.836)	(3.106)	(2.145)	(3.142)	(2.194)
Country and firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	85,602	94,365	39,069	98,834	98,834	98,834
Adj. R^2	0.008	0.009	0.009	0.008	0.009	0.008

Table 5. Role of transfer pricing risk and tax enforcement in minority shareholder rights and tax avoidance

This table examines the association between minority shareholder rights and tax avoidance, conditional on transfer pricing risk and tax enforcement. The dependent variable is Δ*ETR*. The minority shareholder rights indicator is Δ*Shareholder rights*^{GC}. The model specifications in first differences include country, industry–year, and legal origin–economic development–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country–industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

		Transfer pricing risk	*Tax enforcement*	*All*
	Expected Sign		**Δ*ETR***	
		(1)	(2)	(3)
Δ*Shareholder rights*^{GC}	+	0.0059**	0.0068**	0.0064**
		(2.006)	(2.323)	(2.109)
Δ*Shareholder rights*^{GC}×Δ*High-transfer pricing risk*	+	0.0094***		0.0079**
		(2.976)		(2.534)
Δ*Shareholder rights*^{GC}×Δ*High tax enforcement*	+		0.0167***	0.0174***
			(4.509)	(4.719)
Joint Significance	+	0.0338***	0.0172***	0.0407***
∂f( )/∂Shareholder rights^{GC}		(3.61)	(4.96)	(4.18)
Controls for main effects		Yes	Yes	Yes
Country and firm controls		Yes	Yes	Yes
Country fixed effects		Yes	Yes	Yes
Industry–year fixed effects		Yes	Yes	Yes
Legal origin–economic development–year fixed effects		Yes	Yes	Yes
Obs.		92,204	95,378	92,204
Adj. R^2		0.009	0.008	0.009

Table 6. Additional analyses on firm value and corporate tax revenue

This table presents additional analyses. Panel A examines the association between minority shareholder rights and firm value, conditional on tax enforcement. Panel B examines the association between minority shareholder rights and corporate tax revenue. The dependent variables are Δ*Tobin's Q (no deferred taxes)* and Δ*Tobin's Q (with deferred taxes)* in Panel A and *Corporate tax revenue* in Panel B. The minority shareholder rights indicator is (Δ)*Shareholder rights*^{GC}. In Panel A (B), the model specifications are in first differences (levels) and include country, year, industry–year, and legal origin–economic development–year fixed effects where indicated. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country–industry (country) level in Panel A (B). ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

Panel A: Minority shareholder rights, tax enforcement, and firm value

	Δ*Tobin's Q (no deferred taxes)*		Δ*Tobin's Q (with deferred taxes)*	
	(1)	(2)	(3)	(4)
Δ*Shareholder rights*^{GC}	0.0709***	0.0336***	0.0714***	0.0336***
	(4.689)	(2.755)	(4.743)	(2.789)
Δ*Shareholder rights*^{GC}×Δ*High tax enforcement*	0.0739***	0.0548**	0.0740***	0.0550**
	(3.147)	(2.335)	(3.189)	(2.380)
Joint Significance	0.1167***	0.0676***	0.1173***	0.0677***
∂f( )/∂Shareholder rights^{GC}	(5.95)	(3.81)	(6.02)	(3.87)
Controls for main effects	Yes	Yes	Yes	Yes
Country and firm controls	No	Yes	No	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes
Obs.	82,153	82,153	83,256	83,256
Adj. R^2	0.147	0.178	0.148	0.179

Panel B: Minority shareholder rights and corporate tax revenue

	Corporate tax revenue	
	(1)	(2)
Shareholder rights^{GC}	0.0032**	0.0026**
	(2.053)	(2.239)
Country and aggregate firm controls	No	Yes
Country fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Obs.	396	396
Adj. R^2	0.805	0.880

Table 7. Summary statistics: Italian and French settings

This table reports summary statistics for the main variables in the regression models. The sample comprises 481 Italian and French industrial firms (380 and 101, respectively, excluding financials and utilities) from Compustat Global from 1995 to 2000. All non-indicator variables, except country-level variables, are winsorized at the first and 99th percentiles. The Appendix provides the variable definitions.

Variables	Obs.	Mean	Std. dev.	25th percentile	Median	75th percentile
Dependent variable						
ETR	2,078	0.3648	0.1984	0.2690	0.3640	0.4318
Independent variables						
Treatment	2,078	0.1973	0.3981	0.0000	0.0000	0.0000
Firm size	2,078	6.2995	1.9274	4.8632	5.9798	7.5492
Leverage	2,078	0.2185	0.1358	0.1107	0.2120	0.3132
ROA	2,078	0.1424	0.0835	0.0900	0.1259	0.1808
Cash	2,078	0.1435	0.1522	0.0485	0.1035	0.1907
Accruals	2,078	0.0076	0.1130	-0.0419	0.0055	0.0566
Z-score	2,078	1.5592	0.6613	1.1283	1.5319	1.9372
R&D	2,078	0.0055	0.0226	0.0000	0.0000	0.0000
Capital intensity	2,078	0.5833	0.3896	0.2987	0.5316	0.7688
Intangible assets	2,078	0.1102	0.1225	0.0187	0.0670	0.1584
Market-to-book	2,078	2.3086	2.7640	0.8974	1.5640	2.7563
Domestic accounting standards	2,078	0.8417	0.3651	1.0000	1.0000	1.0000
Country-level controls						
GDP per capita	2,078	10.2101	0.1390	10.1007	10.2042	10.3830
Corporate tax rate	2,078	0.4045	0.0438	0.3700	0.4000	0.4166

Table 8. Minority shareholder rights and tax avoidance: Italian and French settings

This table examines the effect of minority shareholder rights on tax avoidance of Italian and French-listed firms around the 1998 reform in Italy. The dependent variable is *ETR*. *Treatment* is a dummy variable equal to one if the firm is incorporated and headquartered in Italy, and zero otherwise. *Post* is a dummy variable equal to one for all the years after the minority shareholder rights reform (1998 to 2000), and zero otherwise. The model specifications include firm and industry–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	ETR			
	Unmatched sample		*Matched sample*	
	(1)	(2)	(3)	(4)
Treatment×*Post*	0.0601**	0.0583**	0.0679***	0.0662**
	(2.204)	(2.034)	(2.668)	(2.534)
Controls	No	Yes	No	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Obs.	2,078	2,078	2,078	2,078
Adj. R^2	0.312	0.318	0.397	0.418

Table 9. Minority shareholder rights and tax avoidance: Dynamic analysis, Italian and French settings

This table examines the effect of minority shareholder rights on the tax avoidance of Italian and French-listed firms around the 1998 reform in Italy. The dependent variable is *ETR*. *Treatment* is a dummy variable equal to one if the firm is incorporated and headquartered in Italy, and zero otherwise. The variables $Post_{1998}$ and $Post_{1999\text{-}2000}$ ($Post_{1995}$, $Post_{1996}$, and $Post_{1997}$) are dummy variables equal to one for all the years after (before) the minority shareholder rights reform. The model specifications include firm and industry–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	ETR	
	Matched sample	
Treatment×$Post_{1999\text{-}2000}$	0.0469	0.0476
	(1.145)	(1.162)
Treatment×$Post_{1998}$	0.0596**	0.0620**
	(2.221)	(2.292)
Treatment×$Post_{1997}$	-0.0356	-0.0370
	(-1.140)	(-1.162)
Treatment×$Post_{1996}$	0.0414	0.0484
	(1.138)	(1.295)
Treatment×$Post_{1995}$	0.0300	0.0371
	(0.565)	(0.670)
Controls	No	Yes
Firm fixed effects	Yes	Yes
Industry–year fixed effects	Yes	Yes
Obs.	2,078	2,078
Adj. R^2	0.399	0.417

Table 10. Minority shareholder rights and tax avoidance: Path analysis, Italian and French settings

This table examines the direct and mediated paths through which minority shareholder rights impact tax avoidance. Minority shareholder rights indirectly impact tax avoidance through the mediated channels of *Business concentration* and *Geographic segments.* The variable *Treatment* is a dummy equal to one if the firm is incorporated and headquartered in Italy, and zero otherwise. The variable *Post* is a dummy equal to one for all the years after the minority shareholder rights reform (1998 to 2000), and zero otherwise. The model specifications include firm and industry–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	Business concentration (y_{M1})	*Geographic segments* (y_{M2})
<u>*Direct Path*</u>	0.0644**	0.0627**
p (*Treatment*×*Post*, *ETR*) $\boldsymbol{\alpha_1}$	(2.10)	(2.36)
<u>*Mediated Path*</u>		
p (*Treatment*×*Post*, y_{M1}) $\boldsymbol{\beta_1}$	0.0451**	
	(1.97)	
p (y_{M1}, *ETR*) $\boldsymbol{\alpha_4}$	0.0403**	
	(2.39)	
<u>*Mediated Path*</u>		
p (*Treatment*×*Post*, y_{M2}) $\boldsymbol{\beta_1}$		-0.0823*
		(-1.86)
p (y_{M2}, *ETR*) $\boldsymbol{\alpha_4}$		-0.0241*
		(-1.65)
<u>*Total mediated path*</u> $\boldsymbol{\beta_1 \times \alpha_4}$	0.0018	0.0020
Controls	Yes	Yes
Firm and industry–year fixed effects	Yes	Yes
Obs.	2,078	2,078
Equation (2) R^2	0.181	0.564
Equation (3) R^2	0.846	0.301

Minority Shareholders and Tax Avoidance

Antonio De Vito

Online Appendix

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Fig. A.1. Variation in minority shareholder rights around the world

This figure displays the variation in minority shareholder rights across 33 countries from 2002 to 2013. Darker shading corresponds to stronger minority shareholder rights.

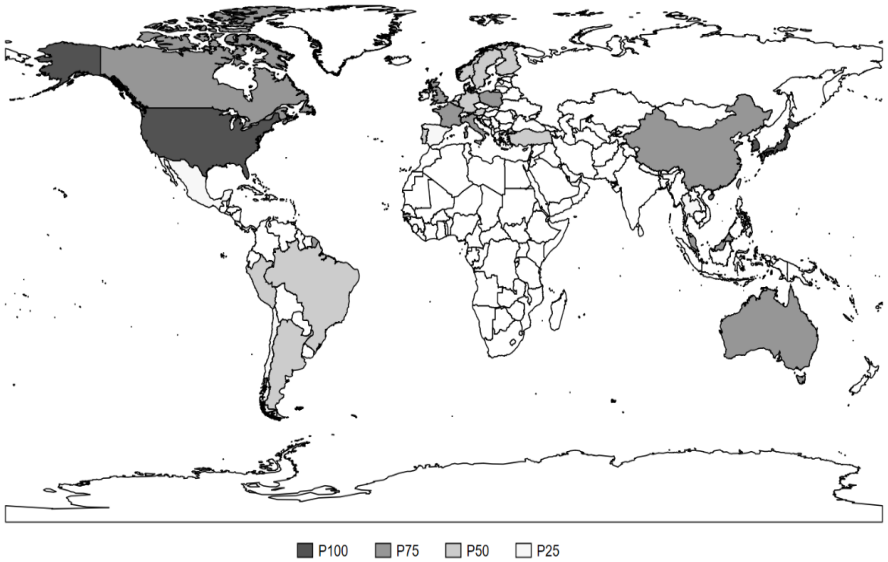


Fig. A.2. Minority shareholder rights and tax avoidance: Robustness tests, cross-country setting

This figure shows the coefficients on minority shareholder rights from the regression in equation (1), excluding one country at a time. The model specification in first differences includes country controls, firm controls, and country, industry–year and legal origin–economic development–year fixed effects. The gray line represents the 95% confidence interval.

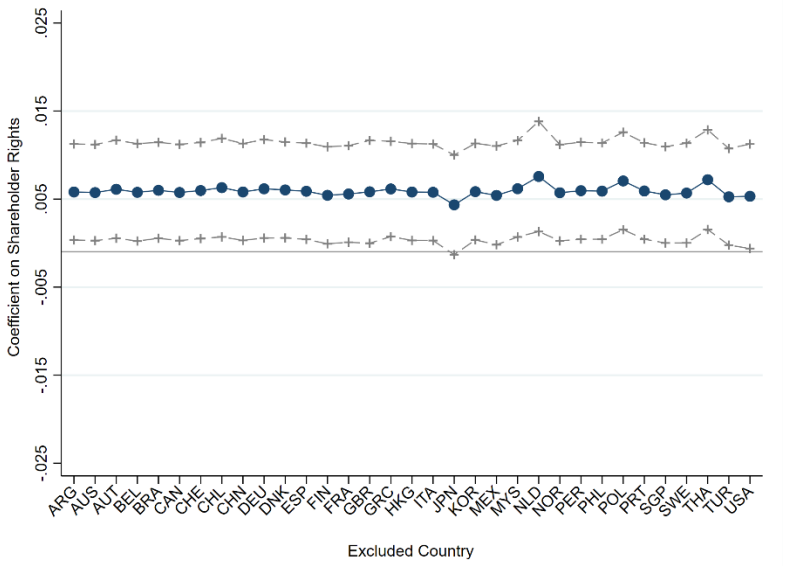
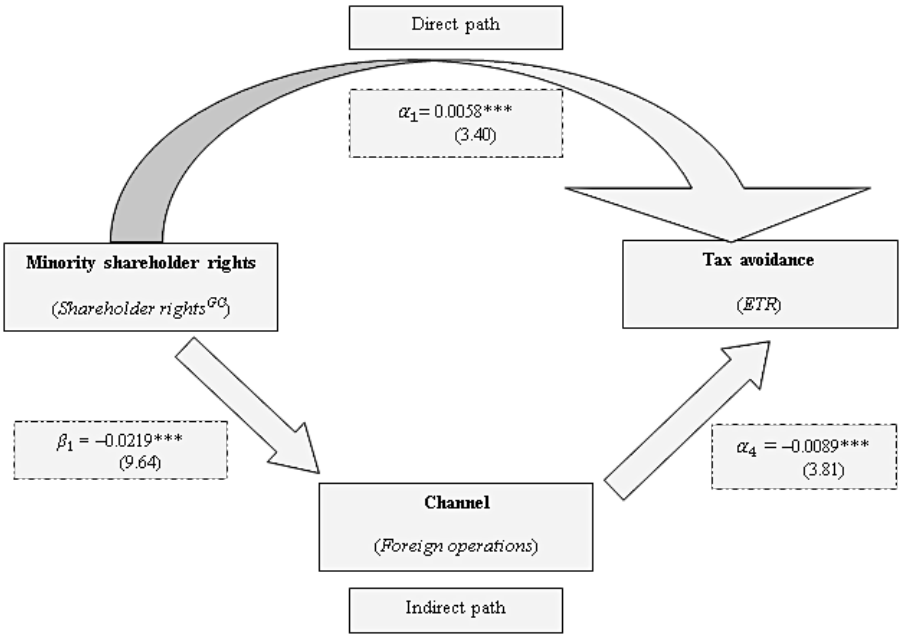


Fig. A.3. Minority shareholder rights and tax avoidance: Path Analysis, cross-country setting

This figure describes the direct and indirect paths through which minority shareholder rights impact tax avoidance. Minority shareholder rights indirectly impact tax avoidance through the mediated channels of *Foreign operations* (Panel A) and *Closely held ownership* (Panel B). *Foreign operations* are the average ratio of foreign sales to total sales at the country–industry–year level. *Closely held ownership* is the firm-level percentage of closely held shares measured as shares owned by insiders divided by shares outstanding. Both variables are from the Datastream database. The path analysis estimates a system of two equations with control variables and country, industry–year, and legal origin–economic development–year fixed effects. The path coefficient α_1 is the magnitude of the direct path from minority shareholder rights to tax avoidance. The path coefficient β_1 is the magnitude of the path from minority shareholder rights to *foreign operations* (Panel A) or *closely held ownership* (Panel B). The path coefficient α_4 is the magnitude of the path from *foreign operations* or *closely held ownership* to tax avoidance. The product of path coefficients $\beta_1 \times \alpha_4$ measures the magnitude of the indirect path from minority shareholder rights to tax avoidance mediated through *foreign operations* or *closely held ownership*. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

Panel A: Minority shareholder rights, tax avoidance, and foreign operations.



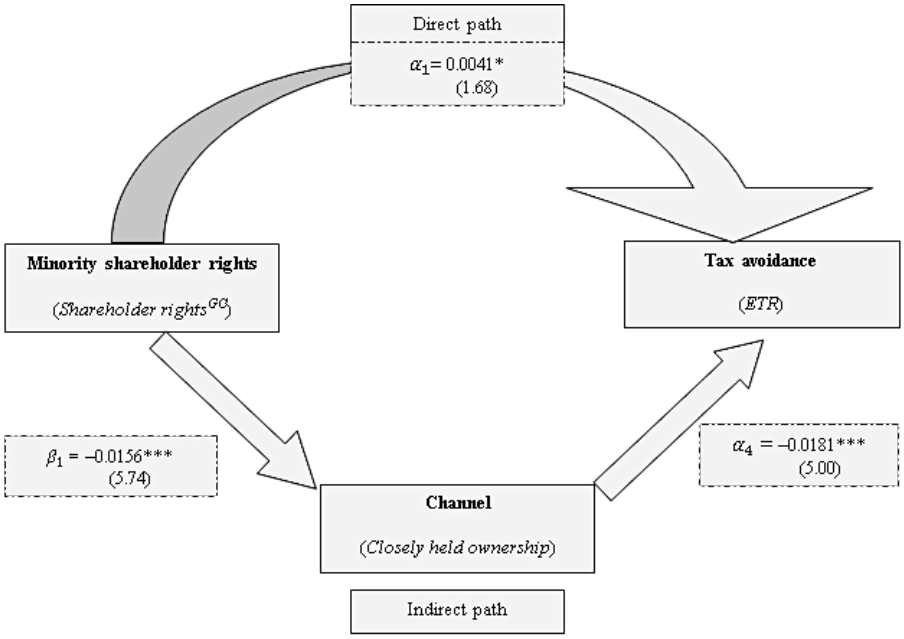
The path analysis is based on the following system of equations:

$$Foreign\ operations_{i,j,k,t} = \beta_0 \quad + \beta_1 Shareholder\ rights_{k,t}^{GC} + \beta_2 X_{i,j,k,t} + \beta_3 \prod_{k,t} + \varphi_k + \ \varphi_j * \omega_t + \varphi_l * \omega_t + \varepsilon_{i,t} \quad \text{(A.1.a)}$$

$$ETR_{i,j,k,t} = \alpha_0 + \alpha_1 Shareholder\ rights_{k,t}^{GC} + \alpha_2 X_{i,j,k,t} + \alpha_3 \prod_{k,t} + \alpha_4 Foreign\ operations_{i,j,k,t} + \varphi_k + \ \varphi_j * \omega_t + \varphi_l * \omega_t + \varepsilon_{i,t} \quad \text{(A.1.b)}$$

Fig. A.3. Minority shareholder rights and tax avoidance: Path Analysis, cross-country setting (*continued*)

Panel B: Minority shareholder rights, tax avoidance, and closely held ownership.



The path analysis is based on the following system of equations:

$$Closely\ held\ ownership_{i,j,k,t} = \beta_0 \quad + \beta_1 Shareholder\ rights_{k,t}^{GC} + \beta_2 X_{i,j,k,t} + \beta_3 \Pi_{k,t} + \varphi_k + \varphi_j * \omega_t + \varphi_l * \omega_t + \varepsilon_{i,t} \quad \text{(A.2.a)}$$

$$ETR_{i,j,k,t} = \alpha_0 + \alpha_1 Shareholder\ rights_{k,t}^{GC} + \alpha_2 X_{i,j,k,t} + \alpha_3 \prod_{k,t} + \alpha_4 Closely\ held\ ownership_{i,j,k,t} + \varphi_k + \varphi_j * \omega_t + \varphi_l * \omega_t + \varepsilon_{i,t} \quad \text{(A.2.b)}$$

Table A.1. Determinants of minority shareholder rights around the world

This table examines the determinants of minority shareholder rights changes. The dependent variable is *Shareholder rights*^{GC}. The model specifications include country and year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	Shareholder rights$^{GC}_t$		
	(1)	(2)	(3)
GDP per capita$_{t-1}$	1.2289		-0.3932
	(1.095)		(-0.474)
Inflation$_{t-1}$	1.1669		0.6669
	(0.990)		(0.536)
Enforcement$_{t-1}$	-0.0470		-0.0143
	(-0.088)		(-0.031)
GDP per capita$_{t-2}$	-0.0506		1.5600
	(-0.033)		(1.176)
Inflation$_{t-2}$	-0.3959		0.5143
	(-0.615)		(1.153)
Enforcement$_{t-2}$	-0.0664		0.1636
	(-0.264)		(1.293)
GDP per capita$_{t-3}$	-2.1254		-1.3169
	(-1.399)		(-0.966)
Inflation$_{t-3}$	0.0979		0.8675
	(0.093)		(1.185)
Enforcement$_{t-3}$	0.0065		-0.0037
	(0.028)		(-0.020)
Corporate tax rate$_{t-1}$		1.2052	0.8068
		(1.117)	(0.657)
Personal income tax rate$_{t-1}$		-1.3354	-1.4619
		(-1.063)	(-1.158)
Dividend tax rate$_{t-1}$		-0.8166	-0.6796
		(-1.493)	(-1.251)
Transfer pricing score$_{t-1}$		-0.0092	-0.0143
		(-0.241)	(-0.362)
Corporate tax rate$_{t-2}$		0.9892	0.6146
		(1.275)	(0.680)
Personal income tax rate$_{t-2}$		0.9354	0.9262
		(1.378)	(1.328)
Dividend tax rate$_{t-2}$		0.6427	0.6588
		(1.623)	(1.589)
Transfer pricing score$_{t-2}$		0.0147	0.0243
		(0.514)	(0.804)
Corporate tax rate$_{t-3}$		-1.6064	-1.8711
		(-0.840)	(-1.081)
Personal income tax rate$_{t-3}$		0.0906	0.1371
		(0.090)	(0.139)
Dividend tax rate$_{t-3}$		0.1098	0.1509
		(0.402)	(0.626)
Transfer pricing score$_{t-3}$		-0.0669	-0.0716
		(-1.283)	(-1.414)
Country & Year fixed effects	Yes	Yes	Yes
Obs.	363	363	363
Adj. R^2	0.884	0.815	0.838

Table A.2. Minority shareholder rights and tax avoidance: Robustness tests, cross-country setting

This table examines the association between minority shareholder rights and tax avoidance across countries. The dependent variables are *ETR*, *ΔETR spread, ΔBook-tax difference*, *ΔNo. of Tax havens,* and *ΔTax haven use*. *ΔETR spread* is the difference between the statutory corporate tax rate for the firm and its *ETR*. *ΔBook-tax difference* is the firm's pretax income minus special items (*PI − SPI*) times the statutory corporate tax rate minus current taxes paid (*TXC − ΔTXP*), relative to pretax income minus special items (*PI − SPI*). *ΔNo. of Tax havens* is the natural logarithm of the firm's number of tax havens subsidiaries plus 1. The number of tax haven subsidiaries is from the Orbis database. I classify countries as tax havens if they are on the OECD's list of uncooperative tax havens. *ΔTax haven use* is an indicator variable taking the value of 1 if the firm has tax haven subsidiaries in a year, and zero otherwise. The minority shareholder rights indicator is (Δ)*Shareholder rights*^{GC}. In Panel A (B), the model specifications in levels (first differences) include firm, country, industry–year, and legal origin–economic development–year fixed effects where indicated. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the country–industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

Panel A: Firm fixed effects models

	ETR			
	(1)	(2)	(3)	(4)
Shareholder rights^{GC}	0.0084***	0.0049*	0.0053*	0.0072**
	(2.655)	(1.663)	(1.804)	(2.361)
Country controls	No	Yes	Yes	Yes
Firm controls	No	No	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Shareholder rights^{GC} × country fixed effects	No	No	No	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes
Obs.	97,764	97,764	97,764	97,764
Adj. R^2	0.403	0.404	0.408	0.408

Panel B: Alternative dependent variables

	ΔETR spread	*ΔBook-tax difference*	*ΔNo. of Tax havens*	*ΔTax haven use*
	(1)	(2)	(3)	(4)
Δ*Shareholder rights*^{GC}	-0.0056**	-0.0384***	-0.0085***	-0.0034***
	(-1.970)	(-2.939)	(-4.599)	(-3.413)
Country controls	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes
Obs.	98,834	95,443	45,384	45,384
Adj. R^2	0.009	0.036	0.014	0.013

Table A.2. Minority shareholder rights and tax avoidance: Robustness tests, cross-country setting (*continued*)

Panel C: Extended sample (from 2002 to 2016 across 66 countries)

	ΔETR			
	(1)	(2)	(3)	(4)
Δ*Shareholder rights*^{GC}	0.0112***	0.0091**	0.0089**	0.0089**
	(2.747)	(2.251)	(2.160)	(2.160)
Country controls	No	Yes	Yes	Yes
Firm controls	No	No	Yes	Yes
Δ*Shareholder rights*^{GC}×country fixed effects	No	No	No	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Industry–year fixed effects	Yes	Yes	Yes	Yes
Legal origin–economic development–year fixed effects	Yes	Yes	Yes	Yes
Obs.	168,610	168,610	168,610	168,610
Adj. R^2	0.013	0.014	0.030	0.030

Table A.3. Clusters of countries' combinations of legal origin and economic development

This table shows clusters of countries' combinations of legal origin and economic development over the sample period from 2002 to 2013.

Legal origin	*English*	*English*	*French*	*French*	*German*	*Scandinavian*
	Cluster 1	**Cluster 2**	**Cluster 3**	**Cluster 4**	**Cluster 5**	**Cluster 6**
	Australia	Malaysia	Belgium	Argentina	Austria	Denmark
	Canada	Thailand	Chile	Brazil	China	Finland
	Hong Kong		France	Mexico	Germany	Norway
	Singapore		Greece	Peru	Japan	Sweden
	United Kingdom		Italy	Philippines	Korea	
	United States		Netherlands	Turkey	Poland	
			Portugal		Switzerland	
			Spain			

Table A.4. Countries experiencing an economic or financial crisis between 2002 and 2013

This table shows countries experiencing an economic or financial crisis between 2002 and 2013.

Country	Type of crisis	Crisis years	Excluded observations
Argentina	Economic	2002, 2009, 2012	37
	Financial	2002, 2013	17
Austria	Economic	2009	22
	Financial	2008	31
Belgium	Economic	2009	41
	Financial	2008	41
Brazil	Economic	2009	77
Canada	Economic	2009	243
Chile	Economic	2009	56
Denmark	Economic	2008, 2009	84
	Financial	2008	46
Finland	Economic	2009, 2012, 2013	167
France	Economic	2009	266
	Financial	2008	301
Germany	Economic	2003, 2009	454
	Financial	2008	308
Greece	Economic	2008, 2009, 2011, 2012, 2013	343
	Financial	2008, 2012	124
Hong Kong	Economic	2009	43
Italy	Economic	2008, 2009, 2012, 2013	284
	Financial	2008	83
Japan	Economic	2008, 2009, 2011	5,042
Malaysia	Economic	2009	417
Mexico	Economic	2009	42
Netherlands	Economic	2009, 2012, 2013	158
	Financial	2008	67

Norway	Economic	2009	43
Portugal	Economic	2003, 2009, 2011, 2012, 2013	87
	Financial	2008	16
Singapore	Economic	2009	257
Spain	Economic	2009, 2011, 2012, 2013	180
	Financial	2008	61
Sweden	Economic	2008, 2009, 2012	439
	Financial	2008	150
Switzerland	Economic	2009	91
	Financial	2008	107
Thailand	Economic	2009	205
United Kingdom	Economic	2008, 2009	1,110
	Financial	2007	598
United States	Economic	2008, 2009	2,988
	Financial	2007	1,509

Table A.5. Covariates balance: Italian and French settings

This table presents the covariates balance after entropy balance matching. The treatment (control) group comprises Italian (French) listed firms.

	Treatment	Control	Standardized difference	Variance ratio
Before matching	Mean			
Firm size	6.7809	6.1812	0.3250	0.7805
Leverage	0.2221	0.2176	0.0334	0.9606
ROA	0.1373	0.1436	-0.0732	1.2078
Cash	0.1415	0.1440	-0.0150	1.9737
Accruals	0.0027	0.0088	-0.0548	0.9018
Z-score	1.3655	1.6069	-0.3795	0.8248
R&D	0.0011	0.0066	-0.2974	0.1519
Capital intensity	0.7376	0.5454	0.4744	1.4465
Intangible assets	0.0704	0.1200	-0.4292	0.7200
Market-to-book	2.2424	2.3248	-0.0298	1.0037
Domestic accounting standards	0.9024	0.8267	0.2225	0.6158
After matching				
Firm size	6.7809	6.8015	-0.0107	0.6637
Leverage	0.2221	0.1988	0.1755	1.0250
ROA	0.1373	0.1303	0.0836	1.3757
Cash	0.1415	0.1422	-0.0039	1.8737
Accruals	0.0027	0.0119	-0.0836	0.9451
Z-score	1.3655	1.4841	-0.1831	0.7732
R&D	0.0011	0.0029	-0.1801	0.7538
Capital intensity	0.7376	0.6482	0.2120	1.2048
Intangible assets	0.0704	0.0781	-0.0787	1.4212
Market-to-book	2.2424	1.9399	0.1243	1.8330
Domestic accounting standards	0.9024	0.9054	-0.0100	1.0297

Table A.6. Minority shareholder rights and tax avoidance: Italian listed and unlisted firms

This table examines the effect of minority shareholder rights on the tax avoidance of Italian listed and unlisted firms around the 1998 reform in Italy. The dependent variable is *ETR*. *Treatment* is a dummy variable equal to one if the firm is listed, and zero otherwise. *Post* is a dummy variable equal to one for all the years after the minority shareholder rights reform (1998 to 2000), and zero otherwise. The model specifications include controls for firm size, leverage, ROA, cash, Z-score, R&D, capital intensity, intangible assets, and firm and industry–year fixed effects. The table reports *t*-statistics (in parentheses), with heteroskedasticity-robust standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Appendix provides the variable definitions.

	ETR	
	Matched sample	
Treatment×Post	0.0711***	0.0705**
	(2.706)	(2.482)
Controls	No	Yes
Firm fixed effects	Yes	Yes
Industry–year fixed effects	Yes	Yes
Obs.	16,141	16,141
Adj. R^2	0.614	0.619