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Do foreign firms cater to American investors' dividend desires?

Tat-kei Lai [a], Travis Ng [b,*], Kwok Ping Tsang [c]

[a] IESEG School of Management, Univ. Lille, CNRS, UMR 9221, LEM - Lille Economie Management, Lille, France
[b] The Chinese University of Hong Kong, Sha Tin, Hong Kong
[c] Virginia Tech, Blacksburg, USA

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ABSTRACT

Will foreign firms alter their dividend policies to cater to minority American investors' tax preferences? Conceptually, in the context of foreign controlling shareholders making the tunneling-and-dividend decisions, foreign firms will not do so unless they value a broad American shareholder base. During a U.S. tax cut that increases American investors' dividend desires only from qualified foreign corporations (QFCs), the dividend policies of those QFCs domiciled in low withholding tax jurisdictions exhibit a significantly stronger catering pattern than others. The conceptual framework and the empirical results jointly suggest that some foreign firms see the value of a broad American shareholder base.

1. Introduction

This study examines whether foreign firms cater their dividend policies to minority American investors' dividend desires as measured by their tax preferences. Why will foreign firms cater to them? Foreign firms will not do so unless the presence of American investors is valuable to at least some of them for various reasons.

To understand this insight, we first examine a conceptual framework, à la Doidge et al. (2004), about the foreign controlling shareholders' tunneling-and-dividend decision which involves the agency conflicts between the controlling shareholders and prospective American investors who will only form a minority in the foreign firm. Controlling shareholders are aware that American investors decide to hold their firm's shares on the basis of their after-tax returns. All else being equal, paying additional dividends broadens their firm's American shareholder base. However, dividends are a form of nonexclusive income that all shareholders enjoy, whereas income from tunneling is a form of exclusive income that only controlling shareholders enjoy (Shleifer and Vishny, 1997). Increasing dividends by reducing tunneling for the sake of a broad American shareholder base decreases the exclusive income of controlling shareholders.

Conceptually, we can contrast two different cases.

- In the baseline case (which is our null hypothesis, H_0), the foreign firm's value does not depend on the American shareholder base, or put another way, American investors do not create value for foreign firms.
- In the alternative case (which is our alternative hypothesis, H_1), a broad American shareholder base increases the foreign firm's value.

* Corresponding author.
Email addresses: t.lai@ieseg.fr (T.-k. Lai), TravisNg@cuhk.edu.hk (T. Ng), byront@vt.edu (K.P. Tsang).

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Under H_0, increasing dividends yields only *one* marginal benefit, namely, the mechanical reduction of the deadweight loss due to diversion. In this case, the effective foreign dividend tax rate faced by American investors does not affect the trade-off at the margin. Under H_1, increasing dividends yields *two* marginal benefits. First, it mechanically reduces the deadweight loss due to diversion. Second, as long as a higher fraction of dividends attracts more American investors, the controlling shareholders get to "cut a bigger pie" even though a smaller fraction is diverted to their own pocket. In this case, lower effective foreign dividend tax rate faced by American investors could make it profitable for the controlling shareholders to increase dividends.

The above simple conceptual framework suggests that foreign firms' dividend policies cater to American investors' increased dividend desires, as measured by a reduction in the foreign dividend income tax rate they face, only when a broad American shareholder base increases foreign firms' value. The main underlying mechanism is that the foreign firms are able to attract more American investors by increasing their dividends.

To link the above conceptual framework to the data, the baseline case (or H_0) suggests that foreign firms do not cater to Americans' dividend desires. A statistical test with a power to reject H_0 should have three factors: (i) a large enough sample of foreign firms, (ii) within a well-defined period, a subset of the sampled foreign firms experiences an exogenous and significant change in their American investors' dividend desires, and (iii) the change does not occur in the remaining subset of the sampled foreign firms.

The tax cut under the U.S. Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) offers these three factors. Between the third quarter of 2003 and the last quarter of 2012, American investors' foreign dividend income tax rate sharply reduces only for the foreign dividends they receive from foreign firms that the Internal Revenue Service (IRS) counts as qualified foreign corporations (QFCs).[1] Estimation-wise, the tax cut helps us get around the most formidable data limitation: the impossibility of identifying the fraction of a foreign firm's American shareholders using only publicly-available data. Specifically, compared to non-QFCs, during the tax cut (i.e., from the third quarter of 2003 to the last quarter of 2012), QFCs become more attractive for American investors due to the lower foreign dividend income tax rate. This is so even if both QFCs and non-QFCs do not alter their dividend policies or operations. But if we do want to detect whether QFCs do alter their dividend policies in response to their being more attractive to American investors, non-QFCs become a reasonable control group. Our test thus does not need to observe the identities of foreign firms' shareholders; we only need to detect whether QFCs' and non-QFCs' dividend policies have trended differently during the tax cut, but not before or after the tax cut.[2]

To operationalize this test, we assemble from the publicly-available datasets about 700,000 firm-by-quarter observations of around 14,661 foreign firms domiciled in 103 non-U.S. jurisdictions. We also take into account the foreign dividend withholding tax faced by American investors. We find that during the tax cut, the dividend policies of those QFCs domiciled in low withholding tax jurisdictions are significantly more generous relative to non-QFCs and those QFCs domiciled in high withholding tax jurisdictions. The pattern is as if they cater their payouts to Americans' increased dividend desires. This pattern survives under a battery of robustness checks and across nine different payout measures, alleviating our concern that errors are driving the pattern. We find that those QFCs domiciled in low withholding tax jurisdictions with a more realistic chance to attract American investors are driving the catering pattern. This mechanism conforms with our conceptual framework.

These findings are suggestive evidence that while American investors are unlikely to form a majority among most foreign firms in the sample, some foreign firms see value of their presence.

There are several caveats about our findings. First, our findings suggest that the "American investors" story is one of the plausible stories that is consistent with the empirical patterns. We anchor to the American investors interpretation because the driving force of the JGTRRA treatment is the U.S. domestic tax policies that affect their dividend preferences. To the best of our knowledge, this is the only policy we know of that spans so many years with a real potential to have an effect on a large sample of foreign firms. Second, we cannot single out a particular theoretical mechanism through which foreign firms find American investors of some value. Third, our results only hold for American investors; we have nothing to say about whether the results also hold for the investors from other countries. We cannot do so because we are unaware of similar tax cuts in another country of a comparable scale. It is not impossible for foreign firms to also cater to the dividend desires of non-American investors. We leave this empirical question to future research.

Section 2 documents individual- and aggregate-level responses suggesting that some American investors seem eager to take advantage of the 2003 tax cut by adjusting their foreign investment portfolios. In response to the cut and unclear definition of QFCs, some foreign firms proactively clarify to prospective American investors that IRS should count them as QFCs. Section 3 discusses the empirical implications of the conceptual framework described above. Section 4 contains our main empirical analysis. We describe the data, the categorization of foreign firms into treatment and control groups, and the identification assumption. We also present and discuss the estimation results. Section 5 concludes. We now discuss our contribution relative to literature.

1.1. Contribution to three strands of literature

1.1.1. Literature 1: do the identities of shareholders matter?

The Fisher separation theorem presents an ideal world in which the identities of shareholders are irrelevant to firms' optimal operational decisions. In such an ideal world, the differences in shareholder preferences do not matter, a setting that maximizes the

[1] Section 2 details how the IRS counts a foreign firm as QFC based on three tests.

[2] Precisely, we categorize the sampled firms into treated and control groups by also considering differences in withholding tax rates among different domiciles. The categorization reflects whether an American investor can fully benefit from JGTRRA. Therefore, it is not simply a comparison between QFCs and non-QFCs during the tax cut. Fig. 1 in Section 4.1 details our categorization.

transferability of shares. Studies have explained how in reality, the institutional arrangements of the capital market and the laws can be viewed as means to facilitate share transferability by making the identities of shareholders as irrelevant as possible.[3]

It remains an empirical question as to how close a particular capital market is to this theoretical ideal. In the U.S., although few base their trading decisions on who the other small shareholders are, who the large shareholders are in general matters (Cronqvist and Fahlenbrach, 2009).[4] The notion that certain small shareholders create value is less surprising in less sophisticated capital markets than in more sophisticated markets.

Kandel et al. (2011) hypothesize that if small shareholders are of similar ages, as a group, they can better exert pressure on controlling shareholders than small shareholders of different ages. This is because shareholders of similar ages can better coordinate their actions without necessarily knowing each other. Kandel et al. (2011) find that among the publicly traded Swedish firms, when small shareholders are of similar ages they exert a significant influence in their firms. In our study, small shareholders who are Americans also constitute a group with certain similarities. These investors are likely to gather information from more similar sources, are exposed to similar investment alternatives, and share similar tax and non-tax concerns. Therefore, the results of our study show that those of Kandel et al. (2011) have external validity beyond their Swedish sample.

But why would American investors add value to foreign firms? To be clear, our data does not allow us to single out any of the various possible theoretical mechanisms. Beyond the mechanism examined in Kandel et al. (2011), Merton (1987) builds a model in which not everyone is aware of a firm. Broadening the shareholder base can raise awareness and lower a firm's cost of capital. Not every foreign firm is familiar to Americans. To the extent that a foreign firm with more American shareholders attracts the attention of U.S. media and more analyst coverage, foreign firms benefit from attracting more American investors.

La Porta et al. (2000) suggest that the key corporate governance issue faced by many foreign firms is the conflict of interest between controlling and minority shareholders. If enough non-American investors believe that Americans would not invest in a foreign firm unless they believe its controlling shareholders are less likely to expropriate American investors, we can picture a self-fulfilling equilibrium in which foreign firms that do attract American investors indeed expropriate their minority shareholders less often. This in turn makes these firms attractive to all investors and lowers their financing costs. Our conceptual framework is in the same spirit as La Porta et al. (2000).

1.1.2. Literature 2: the performance of foreign investors

Curcuru et al. (2011) find that Americans overcome informational disadvantages abroad by reallocating investments to markets immediately prior to strong performance.

Studies show that foreign investors (not necessarily Americans) invest well in a number of markets. Using Finnish data, Grinblatt and Keloharju (2000) find that foreigners invest better than local investors. Froot et al. (2001) find that foreigners invest well in 44 countries. Seasholes (2004) finds that in Taiwan, foreign investors outperform local investors.

Our findings complement those of Curcuru et al. (2011) by suggesting a new explanation for their empirical findings. Americans invest well abroad not only because they are better at cherry-picking future winners but also probably because they "create" their own investment returns by creating value for the foreign firms in which they invest.

1.1.3. Literature 3: studies of the 2003 tax cut

A growing number of studies examine the effects of the 2003 tax cut on domestic firms' operations (Chetty and Saez, 2005, 2010; Hanlon and Hoopes, 2014; Yagan, 2015).[5]

Several studies examine the investment strategies of American investors (Desai and Dharmapala, 2011; Kawano, 2014). Desai and Dharmapala (2011) find that a larger aggregate amount of U.S. FPI goes to countries with QFCs and a smaller amount goes to

[3] This ideal world entails costless transferability of shares, which is essential for the Fisher separation theorem to hold; as Alchian and Woodward (1987) write:

> "differences in individual desires for consumption over time can be indulged, and changes in individual preferences, wealth, and beliefs can be accommodated by revisions of individual portfolios without disturbing the productive decisions of the firm itself."

Going public represents a crucial method of attaining the ideal outcome. Various market institutions and legal features of corporations emerge to facilitate ownership transfer, which helps make shareholders as irrelevant to firm value as possible. Many scholars discuss how limited liability prevents firms' creditors from reaching beyond the firm's assets to those of individual shareholders, rendering shareholder wealth irrelevant to firm value (Manne, 1967; Woodward, 1985; Alchian and Woodward, 1987). Hansmann et al. (2006), in contrast, stress that entity shielding is a more fundamental and universal legal feature than limited liability; it cannot be contracted on but requires corporate law for its existence. Entity shielding operates in the opposite direction stopping shareholders' personal creditors from reaching beyond the shareholders' personal assets to those of the firm. Hansmann (2012) argues that these two fundamental legal features of the organization "facilitate the transferability of shares by making the creditworthiness of the firm largely independent of the personal creditworthiness of the firm's owners." Numerous market institutions, such as specialized stock transfer agencies and standardized trading protocols, further lower the transaction costs of ownership transfer by facilitating stock trading.

[4] The irrelevance of small shareholders is partly reflected by the fact that most listed U.S. firms outsource their shareholder registration to third parties and do not keep track of shareholders in-house day by day. In addition, a substantial fraction of small shareholders hold shares in street names. When most transactions involve shares held in street names, the need to continuously trace the identity of ultimate individual owners is eliminated. This in turn tremendously reduces costs. Of course, occasionally (such as for dividend payments), every shareholder's identity must be traced.

[5] Chetty and Saez (2005) show that the 2003 tax cut induces U.S. publicly traded firms to pay more dividends. They argue that it is difficult to estimate the investment responses. To explain their findings that dividends are more likely to increase among firms whose managers hold a substantial fraction, Chetty and Saez (2010) formalize an agency theory that examines the strategic interactions between shareholders' dividend income tax and the conflict of interest between shareholders and management. Hanlon and Hoopes (2014) find that U.S. publicly traded firms respond to the tax cut by changing their dividend policies before the expiration of the tax cut. The difficulty of estimating investment responses, as described by Chetty and Saez (2005) is overcome by Yagan (2015), who exploits the differences in the dividend tax treatment between C- and S-corporations. Yagan (2015) finds that the tax cut changes neither firm investment nor employee compensation.

countries with non-QFCs. Kawano (2014) examines household investment portfolios and finds that a decrease in the dividend tax rate relative to the rate on long-term capital gains increases household portfolio dividend yields. This effect is particularly strong for high-income households.

We extend the literature by examining the effects of the 2003 tax cut on *non-U.S.* firms. While the theory proposed by Chetty and Saez (2010) focuses on the conflict of interest between shareholders and management, our conceptual framework focuses on the conflict of interest between majority and minority shareholders.[6]

2. Responses to the 2003 tax cut

JGTRRA cuts American investors' dividend taxes when they receive dividends from all U.S.-listed domestic firms and from some foreign firms designated by IRS as QFCs. To be counted by IRS as QFC, a foreign firm must satisfy one of the following three tests: (a) it is established in a U.S. possession (the "Possessions test"), (b) it is from a country with a tax treaty with the U.S. that satisfies certain criteria (the "Treaty test"), or (c) its stocks are readily tradable on an established U.S. securities market as ADRs or cross-listed (the "Market test").[7]

Before the JGTRRA, dividends were taxed at the marginal tax rate of individual investors, which could be as high as 38.6 %. The Act caps the qualified dividend income tax rate at 15 %, which is the same as tax on long-term capital gains. The tax cut benefits American investors who hold QFCs but not non-QFCs.[8] While originally planned to sunset earlier, JGTRRA eventually sunsets by the end of 2012.

Below we describe some observed responses that are potentially attributable to JGTRRA. Appendix A describes in more detail the legal challenges faced by American investors when they invest in foreign firms whose corporate governance issues can differ from those more commonly faced by U.S. domestic firms.

2.1. American investors' responses

2.1.1. Individual-level

Some American investors have shown their interest in taking advantage of the tax cut. In the beginning, IRS did not specify whether a foreign firm could qualify as a QFC and many investors were left hanging. A *Wall Street Journal* article revealed the eagerness of American investors for clarity; an investor asked journalist Eric Bellman how he could take advantage of the lower tax rate to benefit from Asian markets such as Hong Kong, with higher dividend yields.[9]

The source of confusion stemmed from a statement in the law: "non-U.S. traded stocks may be qualified if certain treaty requirements are met." However, this statement did not spell out which tax treaties were valid. Such an unclear statement spurred the delivery of advice through the media, which advocated taking advantage of the tax cut by investing only in American Depository Receipts (ADRs), and not in foreign stocks listed outside of the U.S.[10] It was not until October 20, 2003 that IRS eventually published a notice (IRS Notice 2003–69) that clarified the conditions to be met to qualify as a QFC.

2.1.2. Aggregate-level

The growth of American investors' holdings of foreign equity accelerated after 2003. A U.S. Treasury report, the Residents' Portfolio Holdings of Foreign Securities, shows that, as of the end of 1997, U.S. holdings of foreign securities were around US$1,208 billion. After 6 years, the figure increased to around US$2,079 billion by the end of 2003, which was a little short of double the 1997 figure. Over the next 4 years, the number more than doubled to around US$5,253 billion by the end of 2007.[11] These figures represent the sizable fraction of American investors investing abroad.

As a tax treaty is one of the criteria required to qualify as a QFC, one could expect that if the tax cut does indeed raise interest in investing abroad, Americans would favor foreign firms from countries with qualified tax treaties. Desai and Dharmapala (2011) validate this notion. Specifically, using country-level data from the Treasury International Capital (TIC) system, they find that the tax cut increases U.S. portfolio investment in tax treaty countries relative to non-tax treaty countries.

2.2. Foreign firms' responses

In response to the IRS's unclear statement concerning QFC in the tax cut, some foreign firms eagerly made public announcements to clarify their QFC status.

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[6] Extending Chetty and Saez (2010), Lai and Ng (2017) develop a theoretical model of jurisdictional competition. The model gives conditions under which the tax cut intensifies U.S. states' competition for corporate charters, incentivizing them to strengthen their corporate laws. They find that the responses of U.S. firms to the tax cut are consistent with the notion that their derived conditions hold.

[7] Sheppard and Harty (2005) details the three tests and the evolving treatment.

[8] The highest federal marginal tax rate after the tax cut was 35 %, which implies that American investors subject to the highest federal marginal tax rate paid 38.6 cents of tax per dollar of foreign dividends before the tax cut. After the tax cut, they pay only 15 cents of tax per dollar of foreign dividends obtained from QFCs, but 35 cents per dollar of foreign dividends obtained from non-QFCs.

[9] Bellman, Eric. 2003. "Your Money/Your Life – Pocket Watch: Question Time." Wall Street Journal. July 25, 2003.

[10] One Financial Times article gave such an advice: Taylor, Paul. 2003. "Dusting off those international treaties." Financial Times. August 28, 2003.

[11] The figure dropped by half in 2008 because of the financial crisis, but returned to around the 2007 level by the end of 2012. The U.S. Treasury's reports are obtained from https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/index.aspx.

2.2.1. Canadian firms

On November 19, 2003, a partner of Ernst & Young wrote in Canada's *National Post* urging Canadian firms to "educate themselves about this new U.S. tax reality. First, those with U.S. shareholders need to determine if they and their cash distributions are qualified under the new law" and that "it would serve well to make the fact known in a bid to retain and bolster its U.S. investor base."[12]

Perhaps taking his advice, some Canadian firms that traded only on the Toronto Stock Exchange but not in the U.S. started communicating with their current and potential investors about their QFC status after the U.S. 2003 tax cut. On February 28, 2005, Harvest Energy stated in a press release that "Harvest is of the view that 2004 distributions are 'qualified dividends' under the Jobs and Growth Tax Relief Reconciliation Act of 2003. These dividends are eligible for the reduced tax rate applicable to long-term capital gains and should be reported as such on Form 1040."

Harvest Energy also addressed the potentially conflicting information given by U.S. brokerage firms by stating that "Harvest, along with many other foreign entities that do not issue common shares, may not be listed as a 'qualified foreign corporation' on databases used by brokerage firms to prepare Form 1099-DIV for their clients. Accordingly, U.S. brokerage firms may report all or a portion of the Trust distributions received in 2004 as ordinary dividends. These databases do not contain an exhaustive list of qualified foreign corporations, meaning that intermediaries may incorrectly report Harvest distributions as ordinary dividends on Form 1099-DIV."[13]

In March 2005, Daylight Energy, Paramount Energy, and Advantage Energy, all Canadian firms traded only on the Toronto Stock Exchange, made a similar remark to inform their shareholders and potential investors that their dividends were "qualified dividends" from a U.S. investor's perspective.[14]

Freehold Royalty, in contrast, which also traded only on the Toronto Stock Exchange, explicitly communicated to its current and potential investors in 2004 and 2005 that its dividends did not appear to be "qualified dividends."[15]

2.2.2. European firms

Headquartered in Glasgow, Scottish Power, a constituent of the FTSE 100 Index before 2006, announced its 2003/04 third and fourth quarter financial results in February and May 2004, respectively. They explicitly stated their belief that the firm was a QFC. In the same year, London-based retail jewelry specialist Signet Group, with its primary listing on the London Stock Exchange, also explicitly stated that their dividends were "qualified dividends." It is interesting to note that both companies had ADRs traded in the U.S.

3. Empirical implications

The findings of the conceptual framework described in the Introduction can be expressed in the following logical statement:

> "**A** [H_0: American investors do not create value for foreign firms]" implies "**B** [Foreign firms' dividend policies do not cater to American investors' dividend desires]."

Given logical statement "**A** implies **B**," if **Not B** is established, then the logical conclusion is **Not A**. Therefore, when we relate our conceptual framework to the data, by examining whether foreign firms' dividend policies cater to American investors' dividend preferences, we can indirectly infer whether American investors create value for foreign firms.

To operationalize the above logic, we exploit the 2003 tax cut under JGTRRA that was signed into the law by President Bush on May 28, 2003. Repeating the key information in Section 2, before JGTRRA, *qualified* dividends were taxed at the marginal tax rate of the individual investors, which could be as high as 38.6 %. The Act caps the dividend tax rates at 15 %, which is the same rate as the long-term capital gains tax. The lower dividend tax rates were originally scheduled to expire on December 31, 2010. On December 17, 2010, however, the 15 % maximum dividend tax rate was extended for two more years (i.e., it eventually ended by the end of 2012).

Repeating the info in Section 2, dividends paid by a foreign firm are "qualified" if IRS counts it as a "qualified foreign corporation" (QFC). To be counted by IRS as QFC, it must satisfy one of the following three tests: (a) it is established in a U.S. possession (the "Possessions test"), (b) it is from a country with a tax treaty with the U.S. that satisfies certain criteria (the "Treaty test"), or (c) its stocks are readily tradable on an established U.S. securities market as ADRs or cross-listed (the "Market test").

Furthermore, whether the American investors can benefit from JGTRRA depends on the domicile country's withholding tax rates. Different countries adopt different withholding rules for dividends paid to American investors. The withholding tax rate and any exemptions available depend on the tax treaty signed by the U.S. and the firm's domicile country. Non-resident investors are usually subject to withholding tax levied by many governments. This tax is collected before dividends are paid to non-residents, effectively reducing the return rate. The American investors cannot fully benefit from the tax cut even though the investments are in firms in treaty countries if the withholding tax rate of a country is more than 15 %.

[12] Jackson, Steve. 2003. "Canadians frozen out of U.S. tax credit? Ask if your firm qualifies." National Post. November 19, 2003.

[13] All Canadian listed firms' official documents are extracted from sedar.com. Harvest Energy Trust – News Release (HTE.UN – TSX) Harvest Energy Trust announces year end 2004 reserves. Calgary, February 28, 2005

[14] Daylight Energy: Daylight Energy Trust (TSX:DAY.UN) – News Release Daylight Energy Trust provides 2004 tax information for U.S. unitholders. Calgary, March 31, 2005. Paramount Energy: Paramount Energy Trust (TSX:PMT.UN) advises on 2004 U.S. income tax reporting. Calgary, March 1, 2005. Advantage Energy: Advantage Energy Income Fund (TSX:AVN.UN) News Release: 2004 Tax Information 2004 Canadian Tax Information. Calgary, March 2, 2005.

[15] They announced publicly on August 11, 2004 and February 18, 2005.

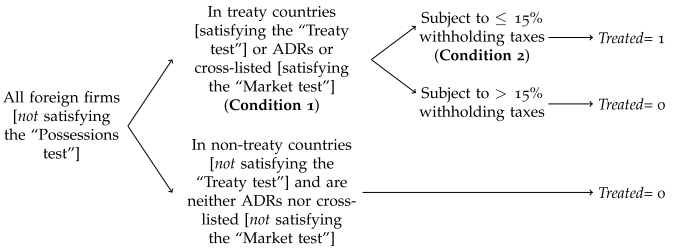


Fig. 1. Treatment classification.

Taken together, JGTRRA can potentially fully benefit an American investor if the foreign firms she invests in are QFCs, and these QFCs are domiciled in jurisdictions with the withholding tax rates of 15 % or below. We classify these firms as "treated" and the other firms as "non-treated."

Therefore, in a sample of "treated" firms and other "non-treated" firms, we can compare the dividend policies of these firms during JGTRRA. If we cannot detect any differences in the trends of their dividend policies, we cannot reject H_0 that American investors do not create value for foreign firms. Putting it in the above logical argument, their lack of differences means **Not B** *fails* to be established.

By contrast, if we find that treated firms have different dividend policies relative to the non-treated firms during JGTRRA, this can be viewed as the evidence against H_0. Putting it in the above logical argument, their differences mean **Not B** *is* established. If our conceptual framework does capture some of the real forces behind foreign firms' tunneling-and-dividend decisions, then the logical statement of "**A** implies **B**" holds true. The logical conclusion is **Not A.**

4. Empirical analysis

4.1. Baseline specification

In our baseline empirical analysis, we estimate the following equation:

$$y_{iq} = \alpha_i + \alpha_q + \alpha_{ct} + \beta\, Treated_i \times During JGTRRA_q + \gamma X_{it-1} + \varepsilon_{iq}. \tag{1}$$

The unit of analysis is a firm in a year-quarter. y_{iq} is a dividend outcome variable for firm i in quarter q (to be defined in the next section), $Treated_i$ is a dummy variable which equals 1 for treated firms (as described above and defined below), $During JGTRRA_q$ is a dummy variable which equals 1 for quarters during the JGTRRA, X_{it-1} is a vector of lagged firm-level control variables, α_i, α_q, and α_{ct} are respectively firm, quarter, and country-by-year fixed-effects,[16] and ε_{iq} is the error term.[17] Robust standard errors are clustered at the firm level to control for heteroskedasticity and serial correlation.

Using Fig. 1 which visualizes our discussion of the JGTRRA in Section 3, we describe the definition of $Treated_i$ more carefully as follows. Specifically, it equals 1 if firm i satisfies the following two conditions: **Condition 1**: IRS treats it as a QFC. **Condition 2**: The withholding tax rates of host countries are 15 % or lower.[18] Only when the foreign firm satisfies these two conditions can an American investor facing the highest federal marginal tax rate fully benefit from the tax cut under JGTRRA.[19] While the figure illustrates how a particular firm is classified as treated or non-treated, it is important to note that in the baseline regression model, each observation is a firm (which could be treated or non-treated) by a year-quarter (which could be before or after JGTRRA). We exploit variation among these firms within the same countries (when there are both treated and non-treated firms in the same country) and between different countries over time to estimate the impact of JGTRRA on the outcome variable.[20]

The country-by-year fixed effects deserve another separate note. Many tax policy changes (including some impossible to quantify) that occurred in the domicile countries during the sample period are relevant to their firms' payout policies. For instance, Finland abolished the full imputation system in 2005; it was replaced with a system of partial double taxation of corporate income that is likely to affect Finnish firms' payout policies. Italy replaced its full imputation system of dividend income in 2004 with partial imputation. Germany passed the Tax Reduction Act in 2002, under which only half of the dividends paid out to shareholders are counted as taxable income. A similar reform was introduced in France in 2005. Singapore introduced a single-tier corporate income

[16] The firm and quarter fixed-effects control for unobserved heterogeneity at the firm and quarter levels. Including both firm and quarter fixed effects precludes us from separately controlling for $Treated_i$ and $During JGTRRA_q$.

[17] One could also estimate a model similar to (1) (with firm fixed-effects and year fixed-effects but not country-by-year fixed effects) using *annual* data. Our unreported results are similar.

[18] We obtain these withholding tax rates from Ernst & Young's *Worldwide Corporate Tax Guide* (2004 version, which provides information valid for 2003).

[19] It is important to keep in mind that we do *not* have shareholder-level information in these firms. Besides, a firm can be considered by IRS as QFC even if it has no American investors.

[20] For instance, within a non-treaty country with withholding taxes less than or equal to 15 %, ADRs and cross-listed firms would be classified as treated while the other firms are classified as non-treated. Thus the difference in dividend policies before and after JGTRRA between these two groups of firms contributes to the identification of β in (1). On the other hand, within a non-treaty country with withholding taxes above 15 %, all firms are classified as non-treated. Thus, comparing these firms with other firms in a treaty country with withholding taxes less than or equal to 15 % (these firms are classified as treated) before and after JGTRRA, also contributes to the identification of β in (1).

Table 1
Variable definitions and summary statistics.

Variable	Frequency	Description	Observations	Mean	S.D.
$D_1 \equiv DIV/S$	Quarter	100 × (Cash dividends/Total sales)	686980	0.44	1.47
$D_2 \equiv DIV/A$	Quarter	100 × (Cash dividends/Total assets)	701840	0.33	1.01
$D_3 \equiv DIV/MC$	Quarter	100 × (Cash dividends/Market capitalization)	694600	0.45	1.26
$D_4 \equiv DIV/CF$	Quarter	100 × (Cash dividends/Cash flow)	687006	3.54	10.05
$D_5 \equiv DIV/E$	Quarter	100 × (Cash dividends/Earnings)	691690	6.14	18.01
$D_6 \equiv TOTAY/S$	Quarter	100 × ((Cash dividends + Share repurchase)/Total sales)	687392	0.49	1.67
$D_7 \equiv \log(1 + \$DPS)$	Quarter	log (1 + Cash dividends per share in USD)	702692	0.03	0.21
$D_8 \equiv \log(1 + \$DIV)$	Quarter	log (1 + Cash dividends in USD)	702720	0.37	1.02
$D_9 \equiv DIV\_INC$	Quarter	Dummy = 1 if cash dividends in the current quarter is higher than the previous quarter	701497	0.17	0.38
$Treated_i$		Dummy = 1 if the firm is a Qualified Foreign Corporation (QFC) in a domicile with a withholding tax rate of 15 % or lower	707084	0.73	0.44
$DuringJGTRRA_q$		Dummy = 1 for quarters between 2003Q3 and 2012Q4	707084	0.63	0.48
log (Total assets)	Annual	Total assets in logarithm	176771	7.61	3.15
Market-to-book ratio	Annual	Market capitalization/Total assets	176771	1.23	2.50
% change in total assets	Annual	(Total assets in year t/Total assets in year $t-1$) −1	176771	0.16	0.75
Profitability	Annual	Earnings before interest and taxes (EBIT)/Total assets	176771	0.02	0.18
Earned equity	Annual	Retained earnings/Common equity	176771	−0.15	2.76

tax system in 2003 that eliminates shareholders' dividend taxes. Japan reduced its dividend tax rate from 43.6 % in 2003 to 10.0 % in 2004.[21] Apart from these tax policy changes, there are other changes around our sample period that can potentially affect foreign firms' dividend policies.[22] We include country-by-year fixed effects to rule out these quantifiable and non-quantifiable changes as the driving force of our results. These country-by-year fixed effects also control for such other factors as annual aggregate U.S. FPI flows to foreign countries, which may be relevant to foreign firms' dividend policies.

The coefficient of interest is β; it indicates whether the dividend outcome is different for treated firms during JGTRRA, relative to the non-treated firms. A positive and statistically significant $\hat{\beta}$ would suggest that treated firms pay more dividends during JGTRRA relative to the non-treated firms. Based on the logical argument in Section 3, such trending differences in turn would be evidence *against* H_0, that American investors do not create value for foreign firms.

4.2. Data and variables

Our main data are obtained from Compustat North America (for Canadian firms) and Compustat Global (for other international firms) and span 2000Q1 to 2015Q4. Following Fama and French (2001), we exclude financial firms (with Standard Industrial Classification [SIC] codes 6000–6999) and utility firms (with SIC codes 4900–4999). Depending on the availability of the key outcome variables and control variables, our sample contains about 700,000 firm-by-quarter observations, covering 14,661 distinct firms in 103 non-U.S. jurisdictions.[23]

We follow Bae et al. (2021) to use the several different dividend outcomes (see their Table 2): Cash dividends (scaled by total sales, total assets, market capitalization, cash flow, or earnings), total payout scaled by total assets, cash dividends per share, cash dividends in level, and a dummy variable indicating an increase in current quarter's cash dividends relative to the previous quarter.[24] To compute cash dividends in a particular quarter, we use the daily Compustat files and aggregate all the cash dividends to the quarterly level. Additionally, we use the average exchange rate from 2000 to 2002 to convert dividends denominated in foreign currencies to USD. Table 1 summarizes the definitions of these dividend outcomes (and other variables) as well as some summary statistics.

Finally, in the estimation model we include several annual-level control variables which are standard in the literature (see, for example, Fama and French 2001 and Denis and Osobov 2008). First, we use the log of total assets as a proxy for firm size.[25] We use the market-to-book ratio (defined as total market capitalization scaled by total assets) and the percentage change in total assets in a

[21] See Becker et al. (2013) for a comprehensive overview of the tax regimes of 25 countries from 1990 to 2008.

[22] See, for example, Bae et al. (2021) (board reforms) and Glendening et al. (2016) (enactment of takeover laws).

[23] These jurisdictions include Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Bahrain, Belgium, Bermuda, Botswana, Brazil, British Virgin Islands, Bulgaria, Canada, Cayman Islands, Chile, China, Colombia, Côte d'Ivoire, Croatia, Curaçao, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Gabon, Germany, Ghana, Gibraltar, Greece, Guernsey, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Jersey, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Latvia, Lebanon, Liberia, Lithuania, Luxembourg, Malawi, Malaysia, Malta, Marshall Islands, Mauritius, Mexico, Monaco, Morocco, Namibia, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Palestinian Territory, Panama, Papua New Guinea, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, Venezuela, Vietnam, Zambia, and Zimbabwe. Note that in the baseline sample, some countries have very few observations. We obtain similar results if we exclude countries with fewer than 100 observations (84 countries remain) or with fewer than 500 observations (64 countries remain).

[24] The ratios are winsorized at the 1 % and 99 % tails. Besides, observations with negative cash flow or earnings are dropped.

[25] We also use the average exchange rate from 2000 to 2002 to convert total assets to USD.

Table 2
Baseline estimation.

	(1)	(2)	(3)
$Treated_i \times DuringJGTRRA_q$	0.009	0.022**	0.116**
	(0.011)	(0.010)	(0.048)
$Treated_i$	−0.253***	−0.250***	
	(0.016)	(0.015)	
$DuringJGTRRA_q$	0.017*	−0.006	
	(0.010)	(0.009)	
log (Total assets)		−0.009***	0.016***
		(0.002)	(0.005)
Market-to-book ratio		0.074***	0.037***
		(0.004)	(0.002)
% change in total assets		−0.022***	−0.018***
		(0.004)	(0.003)
Profitability		1.437***	0.592***
		(0.038)	(0.022)
Earned equity		0.009***	0.005***
		(0.001)	(0.001)
Firm fixed-effects	No	No	Yes
Quarter fixed-effects	No	No	Yes
Country × year fixed-effects	No	No	Yes
Observations	686980	686980	686980
R^2	0.006	0.041	0.247

Note: The dependent variable is D_1 (which is 100 × (Cash dividends/Total sales)). $Treated_i$ is a dummy variable equal to 1 if the firm is a Qualified Foreign Corporation (QFC) in a domicile with a withholding tax rate of 15 % or lower. $DuringJGTRRA_q$ is a dummy variable equal to 1 for quarters between 2003Q3 and 2012Q4. Sample period is 2000Q1-2015Q4. Standard errors, clustered at the firm level, are reported in parentheses. *: significance at 10 % level; **: significance at 5 % level; ***: significance at 1 % level.

given year as proxies for a firm's growth opportunities. We also control for a firm's profitability (defined as earnings before interest and taxes [EBIT] scaled by total assets) and earned equity (defined as retained earnings scaled by common equity).[26]

4.3. Empirical results

4.3.1. Baseline estimation

Table 2 shows the estimation results for the model in (1). As in Bae et al. (2021), we use D_1 (100 × cash dividends scaled by total assets) as our baseline dividend outcome. In Column (1), we regress D_1 on $Treated_i$, $DuringJGTRRA_q$, and their interaction without other controls or fixed-effects. The coefficient of $Treated_i \times DuringJGTRRA_q$ is positive but not significant. In Column (2), we include other firm-level controls; the coefficient of $Treated_i \times DuringJGTRRA_q$ becomes positive and significant. Including firm fixed-effects, quarter fixed-effects, and country-by-year fixed-effects in Column (3) yields similar results.

Note that in the above model, $DuringJGTRRA_q$ becomes 1 for the period from 2003Q3 to 2012Q4. The purpose is to take into account the sunset of JGTRRA.[27] Alternatively, we could focus on the introduction of the policy by limiting our sample to, e.g., 2000Q1 to 2007Q4. We also obtain similar results in unreported estimations.

These results suggest that the dividend policies of treated firms and non-treated firms have trended differently during JGTRRA. Specifically, the treated firms pay more dividends during JGTRRA relative to the non-treated firms. Therefore, relative to the non-treated firms', the treated firms' dividend policies exhibit a stronger catering pattern to the American investors' increased dividend desires during JGTRRA. This pattern is unlikely to be driven by any specific payout measure.

Does JGTRRA generate a meaningful difference between the treated firms and the non-treated firms? Based on the results in column (3), the treated firms' dividends to sales ratios are about 0.12 percentage points higher than those of the non-treated firms during the JGTRRA quarters.[28] To put this number in perspective, we calculate that, before the tax cut and for the treated firms, the mean of D_1 is about 0.32 percentage points. Thus, the 0.12 percentage points increase of dividends to sales ratio can be translated into an increase of about 37.5 % ($\approx 0.12/0.32 \times 100$ %) relative to the pre-tax cut level. Alternatively, we could also understand the economic significance in terms of dividend payment. Specifically, among the firms in the baseline sample that pay dividends, the overall median cash dividend payment per year is about 4.03 M USD; *among the treated firms that pay dividends before the tax cut*, the median cash dividend payment per year is about 3.42 M USD. If the treated firms maintain similar sales levels after the tax cut, then a back-of-the-envelope calculation implies that the 37.5 % increase in dividends to sales ratio is equivalent to an increase of about

[26] The financial ratios are winsorized at the 1 % and 99 % tails.

[27] In an unreported analysis, we also examine foreign firms' responses to the sunset of JGTRRA by shifting cash dividends from the next quarter to the current quarter. We find that during 2012Q4, foreign firms are more likely to engage in cash dividend shifting.

[28] Recall that to construct D_1, the ratio "cash dividends scaled by total assets" is multiplied by 100.

1.28 M USD ($\approx 3.42\text{M} \times 37.5\ \%$) in cash dividend payment per year. This increase is about 31.8 % ($\approx 1.28/4.03 \times 100\ \%$) of the overall median. Thus, the responses of the treated firms also seem to be economically significant.

We would like to be especially careful in stating the take-home message. The catering pattern is a piece of evidence *against* the null hypothesis that American investors do not create value for foreign firms only when our model does capture some real forces behind foreign firms' tunneling-and-dividend decisions.

4.3.2. Dynamic difference-in-differences

We also estimate a dynamic version of the baseline difference-in-differences model as follows:

$$y_{iq} = \alpha_i + \alpha_q + \alpha_{ct} + \sum_{\substack{\tau=2000Q1 \\ \tau \neq 2003Q2}}^{\tau=2015Q4} \beta_\tau \times \Big(Treated_i \times \mathbb{1}\{\text{Quarter} = \tau\} \Big) + \gamma X_{it-1} + \epsilon_{iq}, \tag{2}$$

where $\mathbb{1}\{\text{Quarter} = \tau\}$ is a dummy variable indicating a certain quarter τ, and as in (1), X_{it-1} is a vector of lagged firm-level control variables, α_i, α_q, and α_{ct} are respectively firm, quarter, and country-by-year fixed-effects.

In the estimation we omit the second quarter of 2003. The specification allows us to determine whether the treated and non-treated firms are moving in parallel before JGTRRA and whether JGTRRA creates a difference between the two groups of firms during JGTRRA.

Fig. 2 plots the coefficient estimates of β_τ's (and the 95 % confidence intervals). The coefficients are organized by pre-, during-, and after-JGTRRA periods. Most of the β_τ's are insignificant before 2003Q2, which suggests that the treated and non-treated firms are moving in parallel before JGTRRA (see also Section 4.3.3 for more discussion). During the JGTRRA period (2003Q3-2012Q4), not all coefficient estimates of β_τ's are statistically significant. When they are significant, the coefficients are positive and have relatively larger magnitudes. While these results look consistent with the baseline results reported in Table 2, the dynamic picture of how JGTRRA creates differences between the treated and non-treated firms remains unclear.

One potential explanation is that firms (if they pay dividends in a given year) rarely pay dividends in all quarters. To understand this:

- First, in Table 3, we show the distribution of the number of dividend-paying quarters among the firms in our baseline sample (in the baseline sample, there are 686,980 firm-quarter observations which can be collapsed into 171,745 ($= 686,980/4$) firm-year observations). When firms do pay dividends in a given year, they tend to pay once or twice annually. For instance, conditional of paying dividends, 66.2 % ($= 65,339/(171,745 - 73,068) \times 100\ \%$) of the firms pay once a year and 30.2 % ($= 29,804/(171,745 - 73,068) \times 100\ \%$) of the firms pay twice a year. This pattern is similar among treated and non-treated firms.
- Second, Table 4 shows the distribution of dividend-paying quarters among the firms in the baseline sample. Panel B shows that conditional on paying dividends, non-treated firms tend more to pay dividends in Q1 than in Q4 while treated firms have similar tendency to pay dividends in all four quarters. During JGTRRA (relative to the pre-JGTRRA period), the percentages of treated firms paying dividends increase mostly during Q3 and Q4, whereas the percentages of non-treated paying dividends do not seem to change much.

Taken together, rarely do dividend-paying firms pay dividends in every quarter and treated firms tend to respond to JGTRRA by having a higher likelihood of paying dividends during Q3 and Q4. This could explain why the dynamic picture in Fig. 2 may not be clear enough.

4.3.3. Do treated and non-treated firms follow similar trends in dividend policies before JGTRRA?

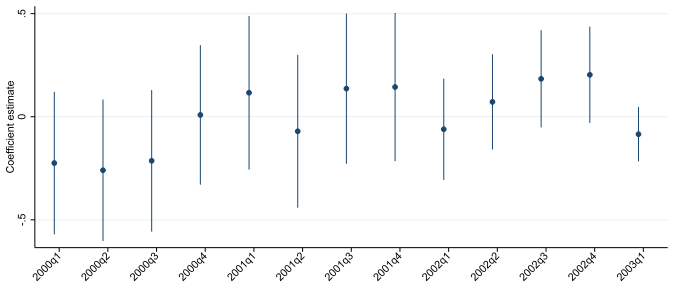
The validity of our specification hinges on the identification assumption that treated and non-treated firms have trended similarly in their dividend policies before JGTRRA. To examine this assumption, we estimate the following model (similar to (2) with the second quarter of 2003 omitted) by treated and non-treated firms using the baseline regression sample:

$$y_{iq} = \alpha_i + \sum_{\substack{\tau=2000Q1 \\ \tau \neq 2003Q2}}^{\tau=2015Q4} \beta_\tau \times \mathbb{1}\{\text{Quarter} = \tau\} + \gamma X_{it-1} + \epsilon_{iq}, \tag{3}$$

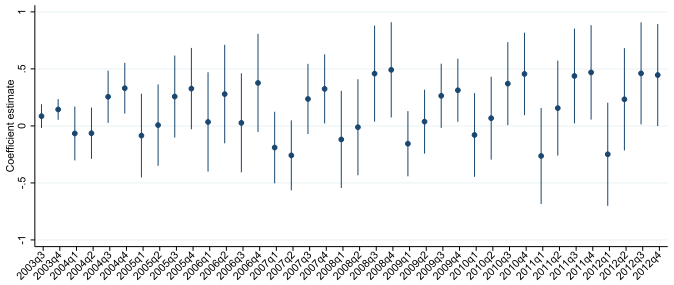
where the dependent variable is D_1 (100 × (Cash dividends/Total sales)), α_i is the firm fixed-effects, and X_{it-1} is the same vector of control variables as in the baseline model. Fig. 3 shows the coefficient estimates of β_τ (and the 95 % confidence intervals) before the JGTRRA. We can see that in almost all quarters (except 2000Q4), the coefficient estimates of β_τ are not statistically different between the treated and non-treated firms. This suggests that before JGTRRA, the two types of firms displayed similar trends.

4.3.4. Alternative dividend outcomes

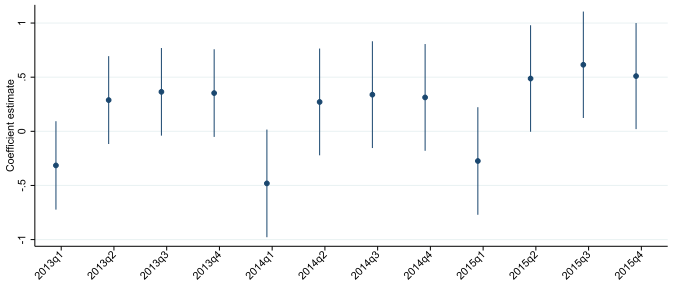
Are the results in Table 2 sensitive to the choice of a particular dividend policy measure? Similar to Bae et al. (2021), we use a number of other dividend policies as the outcome variables: D_2 to D_9 listed in Table 1. In Table 5, we report results using these other dividend outcomes. For the sake of comparison, Column (1) is the same as Column (3) in Table 2. Columns (2) to (9) use



(a) Before JGTRRA



(b) During JGTRRA



(c) After JGTRRA

Fig. 2. Dynamic difference-in-differences. Note: This figure shows the coefficient estimates of β_τ (and the 95 % confidence interval) from regression model (2). The coefficients are organized by before-, during-, and after-JGTRRA periods.

Table 3
Number of dividend-paying quarters.

Number of dividend-paying quarters in a year	Treated	Non-treated	Total
0	52903	20165	73068
1	46329	19010	65339
2	23830	5974	29804
3	734	517	1251
4	1841	442	2283
Total	125637	46108	171745

Note: This table shows the distribution of dividend-paying quarters by firm-year. For example, in 46329 of the firm-year observations, the treated firms pay dividends in only 1 quarter of the year.

D_2 to D_9, respectively, as the dependent variable. Across these different specifications, we find that the coefficients of $Treated_i \times DuringJGTRRA_q$ are all positive and statistically significant. Besides, in unreported regressions, we also obtain similar results when we limit our sample to 2000Q1 to 2007Q4.

4.3.5. Other robustness checks

Several other robustness checks reported in Table 6 alleviate our concern that errors are driving our results.

Table 4
Distribution of dividend-paying quarters.

	All		Pre-JGTRRA		During-JGTRRA		Post-JGTRRA	
	Treated	Non-treated	Treated	Non-treated	Treated	Non-treated	Treated	Non-treated
Panel A: In numbers								
Not paying dividends	398993	150155	60036	17350	247213	97843	91744	34962
Paying dividends in Q1	26579	14764	4036	1661	16338	9258	6205	3845
Paying dividends in Q2	22860	8445	3195	1131	13662	5700	6003	1614
Paying dividends in Q3	29365	6553	4095	753	19428	4571	5842	1229
Paying dividends in Q4	24751	4515	2812	485	17761	2824	4178	1206
Total	502548	184432	74174	21380	314402	120196	113972	42856
Panel B: In percentages								
Not paying dividends	79.39	81.41	80.94	81.15	78.63	81.40	80.50	81.58
Paying dividends in Q1	5.29	8.01	5.44	7.77	5.20	7.70	5.44	8.97
Paying dividends in Q2	4.55	4.58	4.31	5.29	4.35	4.74	5.27	3.77
Paying dividends in Q3	5.84	3.55	5.52	3.52	6.18	3.80	5.13	2.87
Paying dividends in Q4	4.93	2.45	3.79	2.27	5.65	2.35	3.67	2.81
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: This table shows the distribution of dividend-paying quarters among the firms in the baseline sample. For example, among firm-quarter observations from treated firms, 26579 (5.29 %) of them have positive dividends in the 1st quarter of the year.

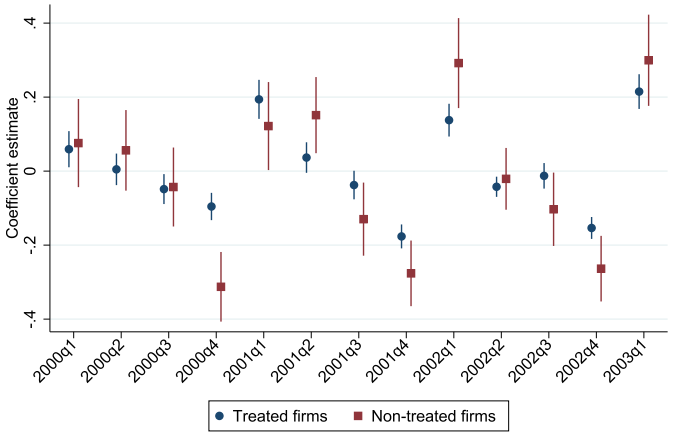


Fig. 3. Examination of the parallel trends assumption. Note: This figure shows the coefficient estimates of β_τ (and the 95 % confidence interval) by treated and non-treated firms from regression model (3). The regression uses the same baseline regression sample but in the figure, only estimates before the JGTRRA are shown.

4.3.6. ADRs and cross-listed firms

The first concern is whether ADRs or cross-listed firms drive the baseline results. In particular, Ahearne et al. (2004) and Ammer et al. (2012) show that the cross-listing of a non-U.S. firm in the U.S. significantly raises the firm's American shareholder base. It is partly because cross-listing decreases information asymmetry, a major concern when American investors invest abroad. By listing as ADRs or cross-listing in the U.S., foreign firms proactively bind themselves to U.S. regulations. These foreign firms can be viewed as being more committed to constraining their controlling shareholders. They are also readily tradable within the U.S. border, making them semi-U.S. firms. It is therefore not surprising that U.S. tax policies affect these semi-U.S. firms and may have no real impact on other foreign firms. To address this concern, we exclude ADRs and cross-listed firms and re-run the estimation. The results in Panel A are similar to the baseline results.

4.3.7. Tax havens concern

A number of our sample countries are so-called tax havens. Foreign firms may change their operations and therefore their value through the use of tax havens (Desai and Dharmapala, 2009; Choy et al., 2017). One may worry that our results are driven by the tax havens themselves rather than by the tax cut under JGTRRA. After the tax cut, foreign firms may benefit by diverting more resources

Table 5
Alternative dividend outcomes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable:	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9
$Treated_i \times DuringJGTRRA_q$	0.116**	0.073***	0.217***	1.159***	3.063***	0.111**	0.023***	0.179***	0.086***
	(0.048)	(0.025)	(0.034)	(0.248)	(0.439)	(0.056)	(0.006)	(0.035)	(0.008)
log (Total assets)	0.016***	−0.002	0.023***	0.146***	0.319***	0.016**	0.004***	0.067***	0.010***
	(0.005)	(0.003)	(0.003)	(0.028)	(0.050)	(0.006)	(0.001)	(0.003)	(0.001)
Market-to-book ratio	0.037***	0.026***	0.007***	0.194***	0.256***	0.041***	0.002***	0.020***	0.004***
	(0.002)	(0.001)	(0.001)	(0.012)	(0.020)	(0.003)	(0.000)	(0.001)	(0.000)
% change in total assets	−0.018***	−0.014***	−0.010***	−0.117***	−0.204***	−0.019***	−0.002***	−0.014***	−0.002***
	(0.003)	(0.002)	(0.003)	(0.013)	(0.025)	(0.003)	(0.000)	(0.002)	(0.000)
Profitability	0.592***	0.465***	0.338***	3.056***	3.620***	0.646***	0.022***	0.183***	0.096***
	(0.022)	(0.015)	(0.014)	(0.110)	(0.163)	(0.025)	(0.002)	(0.010)	(0.003)
Earned equity	0.005***	0.003***	0.004***	0.037***	0.057***	0.006***	0.000**	0.002***	0.001***
	(0.001)	(0.000)	(0.000)	(0.004)	(0.007)	(0.001)	(0.000)	(0.000)	(0.000)
Firm fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	686980	701840	694600	687006	691690	687392	702692	702720	701497
R^2	0.247	0.233	0.156	0.164	0.136	0.236	0.219	0.300	0.152

Note: D_1 to D_9 are one of the dividend outcomes (see Table 1 for the definitions). $Treated_i$ is a dummy variable equal to 1 if the firm is a Qualified Foreign Corporation (QFC) in a domicile with a withholding tax rate of 15 % or lower. $DuringJGTRRA_q$ is a dummy variable equal to 1 for quarters between 2003Q3 and 2012Q4. Sample period is 2000Q1-2015Q4. Standard errors, clustered at the firm level, are reported in parentheses. *: significance at 10 % level; **: significance at 5 % level; ***: significance at 1 % level.

Table 6
Other robustness checks.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable:	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9
	Panel A: Drop ADRs and cross-listed firms								
$Treated_i \times DuringJGTRRA_q$	0.128***	0.080***	0.273***	1.602***	3.749***	0.138***	0.030***	0.240***	0.116***
	(0.037)	(0.024)	(0.031)	(0.250)	(0.463)	(0.044)	(0.007)	(0.029)	(0.009)
Observations	666016	680120	673140	665731	670401	666428	681200	681228	679582
R^2	0.245	0.232	0.155	0.162	0.134	0.234	0.217	0.282	0.150
	Panel B: Drop firms domiciled in tax haven countries								
$Treated_i \times DuringJGTRRA_q$	0.254***	0.168***	0.383***	2.426***	5.027***	0.280***	0.053***	0.400***	0.146***
	(0.054)	(0.034)	(0.049)	(0.348)	(0.658)	(0.063)	(0.010)	(0.040)	(0.011)
Observations	617740	631560	625324	619382	622123	617988	632428	632448	631156
R^2	0.244	0.233	0.154	0.161	0.133	0.235	0.222	0.299	0.146
	Panel C: Drop firms in countries that changed tax treaty status after 2003								
$Treated_i \times DuringJGTRRA_q$	0.114**	0.072***	0.214***	1.141***	3.025***	0.107*	0.023***	0.178***	0.084***
	(0.048)	(0.025)	(0.034)	(0.249)	(0.440)	(0.056)	(0.006)	(0.035)	(0.008)
Observations	684916	699780	692588	684954	689635	685328	700628	700656	699430
R^2	0.247	0.233	0.156	0.164	0.137	0.236	0.219	0.300	0.152
	Panel D: Placebo test								
$Treated_i \times DuringJGTRRA_q$	0.003	0.002	−0.001	0.029	0.064	0.006	−0.001	0.001	0.002
	(0.009)	(0.006)	(0.007)	(0.054)	(0.103)	(0.010)	(0.001)	(0.005)	(0.002)
Observations	686980	701840	694600	687006	691690	687392	702692	702720	701497
R^2	0.247	0.233	0.156	0.164	0.136	0.236	0.219	0.300	0.152

Note: D_1 to D_9 are one of the dividend outcomes (see Table 1 for the definitions). $Treated_i$ is a dummy variable equal to 1 if the firm is a Qualified Foreign Corporation (QFC) in a domicile with a withholding tax rate of 15 % or lower. $DuringJGTRRA_q$ is a dummy variable equal to 1 for quarters between 2003Q3 and 2012Q4. Sample period is 2000Q1-2015Q4. All regressions include a vector of control variables and fixed-effects as in Table 2. Standard errors, clustered at the firm level, are reported in parentheses. *: significance at 10 % level; **: significance at 5 % level; ***: significance at 1 % level.

to tax havens, which could ultimately affect their dividend policies. We re-run the estimation by eliminating firms located in a set of tax havens.[29] We find that the results in Panel B are similar to our baseline results.

[29] In particular, we exclude firms located in Bahrain, Bahamas, Bermuda, British Virgin Islands, Switzerland, Cayman Islands, Cyprus, Guernsey, Hong Kong, Ireland, Jersey, Jordan, Lebanon, Liberia, Luxembourg, Latvia, Monaco, Malta, Mauritius, Netherlands Antilles, Panama, and Singapore.

Table 7
Testing the mechanism.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable:	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9
	Panel A: By firm size								
$Treated_i \times During JGTRRA_q$	0.013***	0.012***	0.018***	0.118***	0.224***	0.018***	0.002***	0.027***	0.008***
× log (Total assets)$_{2002}$	(0.002)	(0.002)	(0.002)	(0.015)	(0.031)	(0.003)	(0.001)	(0.002)	(0.000)
Observations	588896	601680	595352	588437	592226	589204	602180	602208	600328
R^2	0.252	0.235	0.156	0.162	0.134	0.241	0.219	0.302	0.152
	Panel B: By credit ratings								
$Treated_i \times During JGTRRA_q$	0.146***	0.131***	0.187***	1.364***	2.626***	0.198***	0.031***	0.310***	0.090***
× Credit ratings$_{2002}$	(0.027)	(0.017)	(0.023)	(0.157)	(0.339)	(0.032)	(0.007)	(0.022)	(0.005)
Observations	538156	548516	542760	536662	539517	538412	548908	548936	546615
R^2	0.250	0.237	0.155	0.161	0.132	0.240	0.222	0.300	0.152
	Panel C: By country-level Antidirector rights index								
$Treated_i \times During JGTRRA_q$	0.258***	0.207***	0.441***	3.557***	8.030***	0.260***	0.046***	0.393***	0.214***
× Antidirector rights index	(0.021)	(0.014)	(0.021)	(0.173)	(0.377)	(0.025)	(0.005)	(0.017)	(0.007)
Observations	558904	572912	567676	560888	563666	559176	574040	574044	571728
R^2	0.257	0.236	0.153	0.165	0.137	0.244	0.209	0.306	0.153
	Panel D: By FPI inflow								
$Treated_i \times During JGTRRA_q$	0.154***	0.123***	0.248***	1.989***	4.202***	0.150***	0.018***	0.195***	0.107***
× log(FPI inflow)$_{2003}$	(0.019)	(0.012)	(0.016)	(0.139)	(0.292)	(0.022)	(0.002)	(0.011)	(0.005)
Observations	624636	638644	632544	626488	628919	624948	639600	639628	637393
R^2	0.248	0.231	0.156	0.162	0.135	0.237	0.212	0.299	0.152
	Panel E: By FPI stock								
$Treated_i \times During JGTRRA_q$	0.120***	0.085***	0.175***	1.474***	3.126***	0.118***	0.009***	0.136***	0.079***
× log(FPI stock)$_{2003}$	(0.014)	(0.009)	(0.012)	(0.098)	(0.195)	(0.016)	(0.001)	(0.008)	(0.003)
Observations	663932	678520	671700	664507	668520	664320	679640	679668	677429
R^2	0.248	0.232	0.156	0.163	0.136	0.236	0.212	0.299	0.153

Note: D_1 to D_9 are one of the dividend outcomes (see Table 1 for the definitions). $Treated_i$ is a dummy variable equal to 1 if the firm is a Qualified Foreign Corporation (QFC) in a domicile with a withholding tax rate of 15 % or lower. $During JGTRRA_q$ is a dummy variable equal to 1 for quarters between 2003Q3 and 2012Q4. Sample period is 2000Q1-2015Q4. All regressions include a vector of control variables and fixed-effects as in Table 2. Standard errors, clustered at the firm level, are reported in parentheses. *: significance at 10 % level; **: significance at 5 % level; ***: significance at 1 % level.

4.3.8. Changes in tax treaty status after 2003

Since the treated status dummy, $Treated_i$, is defined based on the foreign firm's status before JGTRRA, another potential confounding factor arises due to changes in the tax treaty status during JGTRRA. To address this concern, we drop countries that changed their status and re-estimate the baseline model. Panel C shows that the results are also similar to the baseline results.

4.3.9. Placebo test

While we argue that the JGTRRA policy change is exogenous to foreign firms, the treated/non-treated status of foreign firms need not be completely random. First, firms are free to choose their domiciles. Second, firms endogenously choose to list their ADRs or be cross-listed in the U.S. These endogenous decisions can change their treated status and the withholding taxes to which their shareholders are subject. The baseline results may be biased when unobserved factors affect both the foreign firms' treated/non-treated status and their dividend policy. To indirectly address this concern, we conduct a placebo test similar to that conducted by Rosenbaum (2002) and Duflo et al. (2007). The placebo test randomly assigns firms as treated/non-treated and then re-estimates (1). The results in Panel D show that the coefficients of the interaction terms are all insignificant across different specifications.[30] These results suggest that omitted variables are unlikely to be a big concern in our context.

4.4. Testing the mechanism

In the conceptual framework described in the Introduction, the mechanism through which the tax cut induces foreign firms to increase their dividends hinges on the ability of foreign firms to attract more American investors by increasing their dividends. In reality, certain types of treated firms are more likely to attract American investors than other types of treated firms by increasing dividends.

[30] In unreported analysis, we have repeated this randomization 500 times and find similar results.

To the extent that treated firms pay more dividends during JGTRRA relative to non-treated firms, we should expect that the results will be stronger among foreign firms that are more "attractive" to American investors. However, there is no obvious composite indicator of how attractive foreign firms are to American investors.

Studies in the literature (most notably, Ahearne et al. 2004; Andrade and Chhaochharia 2010; Curcuru et al. 2011; Aggarwal et al. 2012) highlight certain characteristics of foreign firms that are likely to attract U.S. FPI, such as being large or relatively well known. Besides, we also expect that American investors tend to invest in foreign countries that offer stronger shareholder protection, have large U.S. FPI inflows, or have a large presence of American investors. As a result, we consider the following "attractive characteristics" of foreign firms:

1. Large firm size (proxied by the log of total assets).
2. Well-known (proxied by reported credit ratings).
3. Listed in a country with stronger shareholder protection.
4. Listed in a country with large U.S. FPI inflows.
5. Listed in a country with large U.S. FPI stock.[31]

In each case, we create a variable, measured before JGTRRA, and interact it with $Treated_i \times DuringJGTRRA_q$ in the baseline model (1). This allows us to test whether the underlying mechanism of the conceptual framework is plausible. Given that the coefficients of the main interaction ($Treated_i \times DuringJGTRRA_q$) reported in Table 5 are positive, we expect that the coefficients of these triple interactions to be positive as well.

Table 7 shows the results. Panel A shows that the baseline results are stronger among treated firms that are larger. Panel B shows that the baseline results are stronger among treated firms that have higher credit ratings.[32] Panel C shows that the baseline results are stronger among treated firms located in countries that have stronger shareholder protection, proxied by the antidirector rights index (Spamann, 2010). Finally, Panel D and Panel E respectively show that the baseline results are stronger among treated firms located in countries that have more U.S. FPI inflow and stock.[33] Taken together, these results are consistent with the underlying mechanism of the conceptual framework.

5. Conclusion

During the 2003 tax cut spanning the third quarter of 2003 to the end of 2012, IRS classified some foreign firms as QFCs. Holding QFCs, American investors face lower foreign dividend income tax compared to holding non-QFCs. We find that the dividend policies of the subset of QFCs from the domiciles with low withholding tax exhibit a catering pattern to American investors' increased dividend desires, relative to the other foreign firms.

To the extent that our simple conceptual framework captures some real forces behind foreign firms' tunneling-and-dividend decisions, the catering pattern is suggestive of the notion that some foreign firms see the value of broadening their American shareholder base. A broad American shareholder base can be valuable to some foreign firms in at least three ways. First, being similar, American investors exert influence on foreign firms as a group, a theory proposed and tested in Kandel et al. (2011). Second, making other Americans aware of foreign firms, as theorized in Merton (1987). Third, if the market expects that they will not hold foreign firms unless it is certain such firms will be unlikely to expropriate their minority shareholders, then it is conceivable that a self-fulfilling equilibrium exists where these foreign firms with American investors expropriate their minority shareholders less (La Porta et al., 1999). Unfortunately, our data preclude us from singling out a particular theoretical mechanism.

The notion that some foreign firms see value in broadening their American shareholder base implies that they will spend a considerable amount of effort to do so. Do we observe such efforts? The absence of such efforts calls our study into question. In the remaining part of this concluding section, we present some of these observed efforts.

Beyond efforts of cross-listing in the U.S. (Doidge et al., 2004), some foreign firms are observed to expend resources on investor relations (IR) within the U.S. in the hopes of building their American shareholder base. Their U.S. IR programs are reported to be comprehensive, often involving presentations made to fund managers, road shows, meetings with analysts, and the hosting of public events in the U.S. A 1997 survey shows that the surveyed firms had 30 % foreign ownership on average, but spent 40 % of their IR time on foreign audiences. U.S. foreign ownership in these firms was around 13 %, with their IR offices averaging 18 % of their hours in the U.S. An update of the survey reports that the efforts to increase American shareholders in European firms remained strong as of 2018.[34]

Take Severn Trent as an illustrative example. A British water utility and constituent of the FTSE 100, Severn Trent did U.S. roadshows 4 times a year. In an interview, its IR head, John Crosse, said that before they redirected their IR efforts to the U.S., their American shareholder base was about 6 %; he remarked, "compared with the average for a FTSE 100 firm, 6 % was frankly pathetic."

[31] Recall that we do not observe at the individual firm level the presence of American investors. Nevertheless, at the country level, we observe the total U.S. FPI; this is used as a proxy for the presence of American investors in a country. On the other hand, the difference between FPI inflow and FPI is that the former is a *flow* concept whereas the latter is a *stock* concept.

[32] Credit rating data are not available for all of the foreign listed firms in our sample. Instead, we follow Brockman and Unlu (2009) and construct the predicted credit ratings for foreign listed firms. First, we estimate a credit rating model using U.S. firms and obtain the coefficients of firm size and return volatility. We then apply these estimates to foreign listed firms and estimate their credit ratings.

[33] The FPI data come from the Treasury International Capital (TIC) website: https://home.treasury.gov/data/treasury-international-capital-tic-system.

[34] Source: Roach, Garnet. 2018. "IR30: A look back to October 1997 – IR goes global." IR Magazine, Aug 29, 2018.

Before their ADR in 2012, Severn Trent's redirected IR efforts to the U.S. increased this fraction to 14 %.[35] The attitude of Severn Trent's management suggests that some foreign firms do compare their own American shareholder base with that of their peers.

Some foreign firms publicize the fraction of shares held by Americans on company websites and reports. For instance, BASF, a leading German chemical producer, dropped its ADR in 2007. However, in its 2018 annual report and on its website, the firm continued to state that around 20 % of its shares were still held by Americans. Nestlé, the Swiss food giant, has an ADR and reported in its 2018 annual review that Americans owned 36.5 % of its shares, surpassing the 34.9 % owned by the Swiss. Santander, a Spanish bank, reports on its website that as of March 2019, 21.71 % of its shares were held by investors from North America.

On the other hand, foreign firms' efforts to broaden their American shareholder base do seem to catch the attention of the foreign media. The foreign media occasionally report on foreign firm ownership held by Americans. In addition to media favorite Warren Buffett's venture into Chinese stocks (3.1 % stake in Petro China and 10 % stake in BYD Auto), Canadian newspapers such as the Globe and Mail in 2017 reported recent changes in the fraction of shares held by Americans in several Canadian oil companies.[36]

To conclude, some foreign firms do seem to put effort into building their American shareholder base. While these efforts cannot directly prove the notion that some foreign firms see value in broadening their American shareholder base, they are consistent with the notion and the catering pattern we document.

CRediT authorship contribution statement

Tat-kei Lai: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Travis Ng:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kwok Ping Tsang:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Concerns faced by Americans investing abroad

Americans could have a lot to gain by diversifying their portfolios globally (Bailey and Stulz, 1990). However, in addition to typical home bias concerns, Americans venturing abroad (U.S. outbound FPI) face unique concerns that are absent for foreign investors investing in the U.S. (U.S. inbound FPI). In this appendix, we highlight some of their concerns. These concerns motivate our conceptual framework in the Introduction in two ways: i) the key agency problems are between the controlling shareholders and the minority shareholders, and ii) a major symptom of the key agency problems is low dividend payout.

A.1. Foreigners investing in the U.S.

Table A.8 highlights some of the differences in the issues faced by Americans investing abroad and by foreigners investing in the U.S. The first is the composition of firms. When investing in the U.S. market, a foreigner has plenty of widely held publicly traded firms to choose from.[37] In these so-called "Berles-Means corporations," her concerns center on the separation of ownership and control; for instance, the manager may not act in her interest. Other relevant governance issues arise from the conflict of interest between management and shareholders.

Foreigners do not see themselves as being different from their domestic counterparts because few U.S. legal rules specifically restrict foreign investors from exercising ownership rights. Therefore, foreign shareholders in the U.S. receive equivalent investor protection.

Although it is not easy in the U.S. for minority shareholders to compel dividends, Fischel (1981) argues that there may not be a bias in favor of paying either more or fewer dividends. There are no explicit U.S. regulations that regulate how much and how often a firm must pay dividends. Fischel (1981) explains that the above notion partly arises due to the prevalence of widely held firms. If a widely held firm's management continuously suppresses dividends, the market must rationally lower its share price, which would invite a hostile takeover (Manne, 1967). Easterbrook (1984), in contrast, explains why seemingly costly dividends are used to solve agency costs in the context of the conflict of interest between management and shareholders, which is in the same spirit as Jensen (1986).

U.S. courts are reluctant to entertain challenges to firms' dividend policies, unless shareholders can prove that management committed fraud (Fischel, 1981). Israel (1975) suggests that the business judgement rule plays a role.[38]

[35] Source: Human, Tim. 2012. "Why Severn Trent set up an ADR program?" IR Magazine, April 12, 2012.

[36] Source: Jones, Jeffrey. 2017. "There is more to the story of U.S. investment in Canadian energy." The Globe and Mail. July 20, 2017.

[37] Demsetz and Lehn (1985) find that in around half of the 511 largest U.S. firms, no more than 20 % of their shares are owned by the largest five shareholders. On average, only a quarter of the shares are held by the largest five shareholders in these 511 firms. Helwege, Pirinsky, and Stulz (2007) empirically document the reasons behind the evolution of U.S. firms toward being more widely held once they go public.

[38] The legal doctrine recognizes that the court does not necessarily have the skills and incentives to second-guess a firm's actions. Modigliani and Miller's dividend irrelevance theory may also play a role.

Table A.8
The issues faced by investors in-and-out of the U.S.

	Americans investing abroad (U.S. outward FPI)	Foreigners investing in the U.S. (U.S. inward FPI)
Widely-held firms	Rare	Common
Main agency conflcts	Between controlling and minority shareholders	Between management and shareholders
Governance concern	Oppression of minority shareholders	Management benefits at the expense of shareholders
Investor protection	Varies across jurisdictions	Strong
Foreign ownership restrictions	Varies across jurisdictions	Minimal
Taxation	Subject to IRS tax	Varies across jurisdictions
Easy of minority shareholders to compel dividends	Difficult	Difficult

A.2. Americans investing abroad

Different issues confront Americans when they invest abroad, as shown in Table A.8. First, La Porta et al. (1999) show that widely held firms are common only in the U.S. and the U.K., but not in other jurisdictions. The relevant governance issues arise mainly due to the conflict of interest between large controlling and minority shareholders. Unlike the issues between management and shareholders in U.S. firms, the oppression of minority shareholders is a major concern for non-U.S. firms.

Controlling shareholders can pocket two types of income from corporations: income they enjoy exclusively and income they enjoy with other shareholders (Shleifer and Vishny, 1997). Executive compensation, the hiring of close relatives, and the pursuit of pet projects, among others, are the exclusive rights of controlling shareholders, whereas dividends are paid to every shareholder and are thus non-exclusive. Johnson et al. (2000) show that controlling shareholders prefer to reap exclusive benefits. Studies consistently show that firms with controlling shareholders pay low or no dividends, rendering it a main symptom of minority shareholder oppression Johnson et al. (2000).[39]

If foreign firms are widely held, such a symptom can be mitigated by the threat of a hostile takeover. Morck (1996), however, points out that this threat is absent in firms with controlling shareholders. The lack of such a threat in foreign firms leaves little reason for American investors to expect the dividend policies chosen by their foreign controlling shareholders to cater to their interests.

Although some foreign countries have explicit dividend regulations, we are not aware of any that compel firms to pay dividends. In terms of statutory law, other than procedural and tax details, U.S. laws impose caps through profit and capital impairment rules to ensure that dividends are paid out of accumulated profits and not from capital, thus protecting creditors (Frankfurter and Wood Jr, 1997). No statutory law imposes a floor. Similarly, Europe imposes a cap but no floor through the capital maintenance provisions of the Second Company Law Directive (Santella and Turrini, 2008). Imposing a floor on dividends is rare in non-U.S. jurisdictions.

The status of being a foreigner adds another layer of complication to Americans investing abroad. Outside of the U.S., Americans may not always have equal access to the same legal measures as domestic shareholders. This increases the difficulty of litigating abroad if required.

It is not uncommon for foreign governments to impose a foreign ownership cap. The Joint Foreign Chambers recently urged the Philippines and Thailand to lift their foreign ownership restrictions. But Japan appears to be going the opposite way.[40] Other restrictions on foreign ownership have been placed, such as the segmentation of stock markets (e.g., China, Thailand, Finland, Switzerland, or Mexico), caps on the percentage of foreign ownership (e.g., the Philippines, Singapore, or Malaysia), disclosure and screening by the government (Japan for certain industries), and the redefinition of foreigner status (e.g., Malaysians in Singapore). Some undesirable consequences for American investors in countries with such restrictions are burdensome disclosure requirements, being forced to trade on different boards, reduced liquidity, lower returns, requirements for government approval that cause substantial delays, withholding of dividends, and different tax treatments.[41]

IRS taxes Americans' capital income abroad, whereas many other countries do not. The added difficulty of reporting foreign capital income to IRS may have weakened Americans' incentives to invest abroad.

[39] The literature also refers to the exploitation of minority shareholders as "squeeze-out." Specifically, a squeeze-out means that controlling shareholders use their power to either eliminate other shareholders or oppress them and thereby deprive them of their returns. La Porta et al. (1998) measure the legal protection offered to minority shareholders around the world against any form of squeeze-out. Spamann (2010) digs deeper into the law to refine the measures taken against such techniques.

[40] In 2019, Japan's Ministry of Finance required foreign shareholders to inform regulators when their stake in certain listed companies reaches 1 %, representing a reduction from the original threshold of 10 %. The sectors range from defense to telecommunications to marine transport. Foreign investors have to inform the Japanese government once they cross the threshold through a paper-based notification process, triggering a review that could lead to the cancellation of the trade. This decision could take up to 30 days. Source: Bird, Mike. (2019) "Japan's Foreign-Investor Screening Risks" Wall Street Journal. Oct. 10, 2019.

[41] Thailand, for instance, used to have the shares of foreign investors traded on a completely different board from that of domestic investors; foreigners in Thailand can thus suffer from reduced liquidity. Myanmar, China, and Japan have certain foreign ownership restrictions beyond a cap, resulting in the unequal treatment of domestic and foreign shareholders. Thailand also has rules that require firms to secure formal approval from the government before paying foreigners dividends. Dividends paid to foreigners can be withheld for tax purposes. In addition, tax credit calculations for the dividends collected by domestic and foreign investors can differ and take a long time for reimbursement.

Data availability

The authors do not have permission to share data.

References

Aggarwal, R., Kearney, C., Lucey, B., 2012. Gravity and culture in foreign portfolio investment. J. Bank. Finance 36, 525–538.
Ahearne, A.G., Griever, W.L., Warnock, F.E., 2004. Information costs and home bias: an analysis of U.S. holdings of foreign equities. J. Int. Econ. 62 (2), 313–336.
Alchian, A.A., Woodward, S., 1987. Reflections on the theory of the firm. J. Inst. Theor. Econ. 143 (1), 110–136.
Ammer, J., Holland, S.B., Smith, D.C., Warnock, F.E., 2012. U.S. international equity investment. J. Account. Res. 50 (5), 1109–1139.
Andrade, S.C., Chhaochharia, V., 2010. Information immobility and foreign portfolio investment. Rev. Financ. Stud. 23 (6), 2429–2463.
Bae, K.-H., El Ghoul, S., Guedhami, O., Zheng, X., 2021. Board reforms and dividend policy: international evidence. J. Financ. Quant. Anal. 56 (4), 1296–1320.
Bailey, W., Stulz, R.M., 1990. Benefits of international diversification: the case of Pacific Basin stock markets. J. Portf. Manag. 16 (4), 57–61.
Becker, B., Jacob, M., Jacob, M., 2013. Payout taxes and the allocation of investment. J. Financ. Econ. 107, 1–24.
Brockman, P., Unlu, E., 2009. Dividend policy, creditor rights, and the agency costs of debt. J. Financ. Econ. 92 (2), 276–299.
Chetty, R., Saez, E., 2005. Dividend taxes and corporate behavior: evidence from the 2003 dividend tax cut. Q. J. Econ. 120 (3), 791–833.
Chetty, R., Saez, E., 2010. Dividend and corporate taxation in an agency model of the firm. Am. Econ. J.: Econ. Policy 2 (3), 1–31.
Choy, S.K., Lai, T.-K., Ng, T., 2017. Do tax havens create firm value? J. Corp. Finance 42, 198–220.
Cronqvist, H., Fahlenbrach, R., 2009. Large shareholders and corporate policies. Rev. Financ. Stud. 22 (10), 3941–3976.
Curcuru, S.E., Thomas, C.P., Warnock, F.E., Wongswan, J., 2011. U.S. international equity investment and past and prospective returns. Am. Econ. Rev. 101 (7), 3440–3455.
Demsetz, H., Lehn, K., 1985. The structure of corporate ownership: causes and consequences. J. Polit. Econ. 93 (6), 1155–1177.
Denis, D.J., Osobov, I., 2008. Why do firms pay dividends? International evidence on the determinants of dividend policy. J. Financ. Econ. 89 (1), 62–82.
Desai, M.A., Dharmapala, D., 2009. Corporate tax avoidance and firm value. Rev. Econ. Stat. 91 (3), 537–546.
Desai, M.A., Dharmapala, D., 2011. Dividend taxes and international portfolio choices. Rev. Econ. Stat. 93 (1), 266–284.
Doidge, C., Karolyi, G.A., Stulz, R.M., 2004. Why are foreign firms listed in the U.S. worth more? J. Financ. Econ. 71 (2), 205–238.
Duflo, E., Glennerster, R., Kremer, M., 2007. Using randomization in development economics research: a toolkit. In: Schultz, T.P., Ed.), Handbook of Development Economics, vol. 4. Elsevier, pp. 3895–3962 (Chap. 61).
Easterbrook, F.H., 1984. Two agency-cost explanations of dividends. Am. Econ. Rev. 74 (4), 650–659.
Fama, E.F., French, K.R., 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? J. Financ. Econ. 60 (1), 3–43.
Fischel, D.R., 1981. The law and economics of dividend policy. Va. Law Rev. 699–726.
Frankfurter, G.M., Wood Jr, B.G., 1997. The evolution of corporate dividend policy. J. Financ. Educ. 16–33.
Froot, K.A., O'Connell, P.G.J., Seasholes, M.S., 2001. The portfolio flows of international investors. J. Financ. Econ. 59, 151–193.
Glendening, M., Khurana, I.K., Wang, W., 2016. The market for corporate control and dividend policies: cross-country evidence from M&A laws. J. Int. Bus. Stud. 47 (9), 1106–1134.
Grinblatt, M., Keloharju, M., 2000. The investment behavior and performance of various investor types: a study of Finland's unique data set. J. Financ. Econ. 55, 43–67.
Hanlon, M., Hoopes, J.L., 2014. What do firms do when dividend tax rates change? An examination of alternative payout responses. J. Financ. Econ. 114, 105–124.
Hansmann, H., 2012. Ownership and organizational form. In: Gibbons, R.,Roberts, J., Eds., Handbook of Organizational Economics. Princeton University Press, pp. 891–917 (Chap. 22).
Hansmann, H., Kraakman, R., Squire, R., 2006. Law and the rise of the firm. Harv. Law Rev. 119 (5), 1333–1403.
Helwege, J., Pirinsky, C., Stulz, R.M., 2007. Why do firms become widely held? An analysis of the dynamics of corporate ownership. J. Finance 62 (3), 995–1028.
Israel, D.M., 1975. The business judgment rule and the declaration of corporate dividends: a reappraisal. Hofstra Law Rev. 4, 73.
Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. Am. Econ. Rev. 76 (2), 323–329.
Johnson, S., La Porta, R., López-de-Silanes, F., Shleifer, A., 2000. Tunneling. Am. Econ. Rev. 90 (2), 22–27.
Kandel, E., Massa, M., Simonov, A., 2011. Do small shareholders count? J. Financ. Econ. 101 (3), 641–665.
Kawano, L., 2014. The dividend clientele hypothesis: evidence from the 2003 tax act. Am. Econ. J. Econ. Policy 6 (1), 114–136.
La Porta, R., López-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. J. Finance 54 (2), 471–517.
La Porta, R., López-de-Silanes, F., Shleifer, A., Vishny, R.W., 1998. Law and finance. J. Polit. Econ. 106 (6), 1113–1155.
La Porta, R., López-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000. Investor protection and corporate governance. J. Financ. Econ. 58 (1), 3–27.
Lai, T.-K., Ng, T., 2017. Does dividend tax impede competition for corporate charters? J. Comp. Econ. 45 (4), 751–772.
Manne, H.G., 1967. Our two corporation systems: Law and economics. Va. Law Rev. 53 (2), 259–284.
Merton, R.C., 1987. A simple model of capital market equilibrium with incomplete information. J. Finance 42 (3), 483–510.
Morck, R.K., 1996. On the economics of concentrated ownership. Can. Bus. Law J. 26, 63.
Rosenbaum, P., 2002. Covariance adjustment in randomized experiments and observational studies (with discussion). Stat. Sci. 17, 286–327.
Santella, P., Turrini, R., 2008. Capital maintenance in the EU: is the second company Law directive really that restrictive? Eur. Bus. Organ. Law Rev. 9 (3), 427–461.
Seasholes, M.S., 2004. Re-examining information asymmetries in emerging stock markets. Working paper.
Sheppard, H.E., Harty, S.A., 2005. The evolving treatment of qualified foreign dividends. J. Int. Tax. 16 (5), 28–58.
Shleifer, A., Vishny, R.W., 1997. A survey of corporate governance. J. Finance 52 (2), 737–783.
Spamann, H., 2010. The "antidirector rights index" revisited. Rev. Financ. Stud. 23 (2), 467–486.
Woodward, S., 1985. Limited liability in the theory of the firm. J. Inst. Theor. Econ. 141 (4), 601–611.
Yagan, D., 2015. Capital tax reform and the real economy: the effects of the 2003 dividend tax cut. Am. Econ. Rev. 105 (12), 3531–3563.