Corporate Lobbying and Disclosure of Deferred Tax Liabilities from Permanently Reinvested Foreign Earnings

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Abstract

This paper examines the correlation between corporate tax lobbying activity and the voluntary disclosure of the estimated tax liability associated with permanently reinvested foreign earnings (PREs). We draw on the literature that suggests that lobbying can lower taxes on repatriated foreign earnings and lower corporate effective tax rates overall. We examine whether companies voluntarily disclose the estimated tax liability of permanently reinvested earnings as another means outside of the formal political process to lobby Congress to lower corporate taxes on repatriated earnings. Using data from Open Secrets and companies' XBRL (eXtensible BUsiness Reporting) filings, we find that companies that engage in the formal lobbying process are also more likely to voluntarily disclose the estimated tax liability of PREs. Our findings are timely and relevant to Congress who recently passed the Tax Cuts and Jobs Act, and the Financial Accounting Standards Board as it reaches its final decisions on tax-related disclosure effectiveness.

1. Introduction

Current U.S. tax law gives firms an incentive to leave earnings overseas, thus avoiding U.S. taxes until such time that the firm decides to repatriate any or all of the cumulative foreign earnings left overseas. Moreover, the accounting treatment under Topic 740 of the Accounting Standards Codification (ASC) allows firms to avoid declaring even a deferred tax liability on earnings left overseas by designating such earnings as permanently reinvested foreign earnings (PRE). The disclosure requirements under Topic 740 afford firms discretion to either elect disclosure of an estimated amount of unrecognized deferred tax liabilities or disclose that it is not practicable to make such an estimate. In this study, we examine the firm's disclosure decision.

A large body of literature considers capital market and firm-specific effects of voluntary disclosure. For example, if managers make credible, voluntary disclosures of private information, the disclosures may reduce information asymmetries between informed and uninformed investors, and reduce the firm's cost of capital (Verrecchia, 2001). Firms' may provide disclosure to signal the superior quality of their product to resolve the lemon's problem of adverse selection, which could otherwise lead to the unravelling of a product market (Akerlof, 1970). We believe that understanding firms' disclosure decisions about the estimated, unrecognized deferred tax liability provides an important contribution to the voluntary disclosure literature because the potential capital market and overall economic impact of permanently reinvested foreign earnings is substantial. To illustrate, as of 2015, U.S. companies had accumulated approximately $2.6 trillion in earnings that are

permanently reinvested overseas (Joint Committee on Taxation 2016).[1] In 2016, Apple alone had accumulated nearly $110 billion in PRE. These vast sums, if repatriated, could generate significant tax revenues and, if reinvested in the U.S., arguably an increase in American jobs. The Trump administration has made bringing foreign earnings back to the U.S. an important objective of its tax reform plan.[2] During November 2016, the U.S. House of Representatives Committee on Ways and Means released its Tax Cuts and Jobs Act, which provides significant incentive for U.S. firms to repatriate foreign earnings, reducing the tax rate on those earnings to a 12% rate on accumulated overseas earnings held in cash, and a 5% rate on less liquid assets.

Concurrently, regulators are evaluating the PRE disclosure issues. A recent study by Audit Analytics in 2016 found that the SEC Comment Letters continue to focus on disclosures surrounding PREs and the taxable implications of the repatriation of cash held overseas.[3] The Financial Accounting Standards Board (FASB) has undertaken a Disclosure Framework project to improve the effectiveness of financial statement disclosures (disclosures that financial statement users rely upon in their decision-making). The FASB acknowledges that increasing disclosure effectiveness involves establishing a set of principles that the Board can consistently apply while affording managers flexibility in their choice of disclosures.

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[1] The Committee based this estimation on the most recent statistics provided by the Statistics of Income Division of the Internal Services Revenue of $2.3 trillion for 2012. See https://waysandmeans.house.gov/wp-content/uploads/2016/09/20160831-Barthold-Letter-to-BradyNeal.pdf

[2] Trump proposed a one-time tax on earnings held offshore. See http://www.cnn.com/2017/04/26/politics/white-house-donald-trump-tax-proposal/index.html

[3] http://www.auditanalytics.com/blog/sec-comment-letters-a-look-at-top-issues-in-2016/

The FASB had added certain disclosures surrounding PREs, though it had subsequently reversed some of its decisions.[4] Since the FASB is currently engaged in additional outreach regarding disclosure with respect to income taxes, we believe this study's examination of political lobbying as a primary determinant of disclosure of the estimate of unrecognized deferred tax liability on PRE will be a useful input to the FASB's outreach and the final decisions to improve tax-related disclosure effectiveness.

Our study focuses on a particular aspect of disclosures of PRE and associated taxes: namely that disclosure of the deferred tax liability is essentially voluntary, so that some firms choose to disclose while others do not. ASC Topic 740 allows companies to avoid recording deferred taxes on foreign earnings that the company designates to be permanently reinvested abroad. The reporting entity is required to have a specific plan for reinvesting the PRE in order to designate the earnings as PREs. For companies making this designation, U.S. GAAP requires disclosure of the cumulative amount of PRE and an estimate of the associated unrecorded deferred tax liability. However, companies are also permitted to *not* disclose this estimate if they deem that it is not practicable to determine the amount of the unrecorded deferred tax liability. In this case, companies must state that determination is not practicable (ASC 740-30-50-2).

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[4] The Board had issued an exposure draft of its decision to require disaggregation of the cumulative PRE by country if PRE in a given country represented 10% or more of the cumulative PRE. The Board subsequently substituted disclosure of cash, cash equivalents, and marketable securities that comprise total cumulative PRE. See minutes of the Board's 6/8/2016 meeting posted on its website, which can be accessed at: http://www.fasb.org/jsp/FASB/FASBContent_C/ProjectUpdatePage&cid=1176164227426#decisions

We hypothesize that managers, in the decision process, make a trade-off assessment of the net benefit of disclosing to communicate their superior knowledge of their firm's performance to the capital markets and to managing reported performance for political reasons (Healy and Palepu, 2001). Drawing on studies that suggest that lobbying can lower the taxes on repatriated earnings and lower corporate effective tax rates (Alexander, Mazza, and Scholz, 2009; Richter, Samphantharak, and Timmons, 2009) and corporate participation in political activity can be associated with lower effective tax rates (Brown, Drake, and Wellman, 2015), we argue that managers voluntarily disclose the deferred tax liability as a means of lobbying Congress to lower corporate taxes on repatriated earnings. The unrecorded deferred tax liability associated with PRE represents the company's estimate of how much it would have to pay in taxes if the foreign earnings were repatriated to the U.S. In other words, the disclosure of this estimated, unrecognized deferred tax liability, arguably, can be a conservative proxy for the amount of forgone tax revenues accruing to the federal government.[5] Companies can use this disclosure as part of their arsenal of corporate political activity on tax issues.

Prior literature on PREs examine the following: (1) companies' incentives to locate overseas as a result of PRE disclosure requirements (Graham, Hanlon, and Shevlin, 2011); (2) decisions made by companies to repatriate foreign earnings or

[5] In Apple's 2016 10-K, the company disclosed $36 billion in unrecognized deferred tax liability related to its PRE. Interestingly, in an interview with the Washington Post, Tim Cook, CEO, was quoted as saying "…we're not going to bring it back until there's a fair rate", referring to Apple's PRE. See http://www.washingtonpost.com/sf/business/2016/08/13/tim-cook-the-interview-running-apple-is-sort-of-a-lonely-job/?utm_term=.1d542b2853a6

continue foreign investments (Blouin and Krull, 2009; Graham et al., 2011; Blouin, Krull, and Robin, 2014; Hanlon, Lester, and Verdi, 2015; Nessa, 2017); (3) value-relevance of PREs and their estimated tax liabilities (De Waegenaere and Sansing, 2008; Bauman and Shaw, 2008); (4) companies' voluntary disclosure of the estimated tax liability associated with PRE (Ayers, Schwab, and Utke, 2014; Eiler and Kutcher, 2014; Bagnoli and Watts, 2017); and (5) estimation of PRE when PRE is not disclosed (Ayers et al., 2015). However, none of these studies examine voluntary disclosure of the PRE estimated tax liability as a means of tax lobbying. We contribute to this stream of literature by linking the literature on corporate political action and PRE-related disclosure. We address the call for more research on answering the question of why firms engage in voluntary disclosure in the first place (Healy and Palepu, 2001). Finally our study is relevant to standard setters' concurrent deliberations on income-tax related disclosure.

Our findings indicate that firms engaging in tax lobbying activities are more likely to also voluntarily disclose the estimated tax liability associated with PRE. This main finding is robust to controls for endogeneity using a two-stage residual inclusion probit regression and a bivariate probit regression, and alternate measures of the foreign/U.S. investment mismatch. In addition to the aforementioned contributions, our findings provide new evidence to suggest that companies that actively engage in tax lobbying will also voluntarily disclose the estimated tax liability associated with PREs to influence government decision-making. The remainder of the paper is organized as follows: Section 2 provides an overview of the literature and develops the hypothesis; Section 3 discusses our

research design; Section 4 discusses our empirical results; Section 5 discusses further sensitivity analyses; and Section 6 provides the conclusion.

2. Literature Review and Hypothesis Development

2.1Corporate Lobbying and Political Cost Hypothesis

Corporate lobbying[6] is one of the legitimate means by which companies can influence the legislative process (Yu and Yu, 2011; Werner, 2015) by communicating expert or domain-specific information to uninformed or over-burdened legislators (Borisov, Goldman, and Gupta, 2016). Corporate lobbying activity is nontrivial. In 2016 alone, corporations spent over $3B in lobbying Congress on general and specific issues.[7]

Various stakeholders or interest groups potentially affected by the proposed legislation or government agency actions may lobby in order to provide further information to government decision makers to optimize their decision-making. Presumably, this incentive to engage in lobbying activities stems from the corporation's desire to achieve favorable policies or outcomes (Chen, Parsley, and Yang, 2015). In a study of financially distressed firms, Adelino and Dinc (2014) find that financially weaker firms lobbied more and were more likely to cite the

[6] The Lobbying Disclosure Act of 1995 governs the disclosure of lobbying activities to influence the Federal Government, and for other purposes. Specifically, the Act defines lobbying activities as "lobbying contacts and efforts in support of such contacts, including preparation and planning activities, research and other background work that is intended, at the time it is performed, for use in contacts, and coordination with the lobbying activities of others." Lobbying contacts can be oral or written communication (including an electronic communication) to a covered executive branch official or a covered legislative branch official.

[7] See https://www.opensecrets.org/lobby/. The statistics cited are based on calculations by the Center for Responsive Politics using data from the Senate Office of Public Records.

American Recovery and Reinvestment Act of 2009 among the issues they lobbied for. In general, they also find that companies that lobbied more were more likely to be the recipient of the stimulus funding. Correia (2014) finds that companies that spent more on lobbyists who were previously employed at the Securities and Exchange Commission (SEC) and lobbying the SEC directly were effective in reducing the probability of enforcement and penalties incurred compared to those firms that did not do the same. Hochberg, Sapienza, and Vissing-Jørgensen (2008) found that firms with agency problems tended to lobby against the strict implementation of the Sarbanes-Oxley Act (2002), particularly provisions mandating enhanced disclosure (e.g., SOX 404 internal control related disclosures). However, they also document positive cumulative abnormal returns in the period prior to the passage of SOX that did not reverse in the period post SOX passage for these lobbying firms compared to non-lobbying firms. Thus investors believed the benefits of SOX disclosure provisions would mitigate agency costs of misalignment between managers' opportunistic interests and shareholders' wealth maximization interests. Watts (1977) and Watts and Zimmerman (1978) provide the framework to suggest that companies adopt conservative accounting policies in order to avoid political scrutiny (i.e., to minimize political costs). A number of studies of this political cost hypothesis show that companies report conservatively in the face of political uncertainty or political scrutiny that may result in unfavorable outcomes (e.g., Jones, 1991, Key, 1997). Aboody, Barth, and Kasznick (2003) find that firms with higher political costs voluntarily choose to recognize stock compensation expense. In other words, companies with heightened market scrutiny are more

likely to voluntarily expense stock compensation in order to mitigate the political costs in the long-run.

A few studies examine the association between corporate behavior of tax lobbying and tax strategizing. Kim and Zhang (2016) find that companies with higher lobby expenditures tend to be more tax aggressive (i.e., companies that engage in tax-avoidance strategies that are closer to the more aggressive end of the continuum). Richter, Samphantharak, and Timmons (2009) find that firms that spent more on lobbying in a given year experienced lower effective rates the following year. Alexander, Mazza, and Scholz (2009) find that companies that lobbied for the American Jobs Creation Act of 2004 (AJCA), which incentivized corporations to repatriate foreign earnings within a given timeframe by lowering the tax from 35% to 5.25% (one-time only), benefited greatly. They determined that companies that spent on lobbying activities on the AJCA were able to generate a 22,000% return on their investment (i.e., an average return in excess of 4,220 for every $1 spent). Relatedly, Blouin and Krull (2009) provide evidence consistent with their hypothesis that the firm repatriation decision is a function of the after-tax rate of return on investments in the U.S. compared to that of the foreign location; firms will repatriate when the firm can achieve higher after-tax rate of return on investments in the U.S. Since the one-time tax incentive afforded by the American Jobs Creation Act of 2004 would not have affected the after-tax return on investments, firms that repatriated under the Jobs Act were firms that had limited investment opportunities.

Baloria and Klassen (2017) show that firms are willing bear a short-term financial reporting cost in order to create a more favorable tax environment in the future. Specifically, they find that companies that engage in political activity by contributing to congressional candidates in favor of reducing the corporate tax rate were more likely to manage their effective tax rates up in the period leading up to the 2012 general election. This, they argue, is because politicians are politically sensitive to negative information about firms they have ties to during the election cycle. Mills, Nutter, and Schwab (2013) show that government-contractor firms are willing to incur political cost and pay higher taxes in order to preserve their revenues derived from the government contracts.

2.2 Permanently Reinvested Foreign Earnings

A number of studies examine different aspects of PREs: (1) companies' incentives to locate overseas due to PRE disclosure requirements (Graham, Hanlon and Shevlin, 2011); (2) companies' reinvest or repatriate decisions (Blouin and Krull, 2009; Graham et al., 2011; Blouin, Krull, and Robinson, 2014; Hanlon, Lester and Verdi, 2015; Nessa, 2017); (3) investors' assessment of PREs and their estimated tax liabilities (De Waegenaere and Sansing, 2008; Bauman and Shaw, 2008); (4) companies' voluntary disclosure of the estimated tax liability associated with PRE (Ayers, Schwab, and Utke, 2014; Eiler and Kutcher, 2014; Bagnoli and Watts, 2017); and (5) estimation of PRE when PRE is not disclosed (Ayers et al., 2014). Since the research question of this study is to examine the disclosure choice of the estimated tax liability, we contribute to the stream of literature examining this voluntary disclosure choice.

Krull (2004) finds that firms use their discretion to manage their earnings to designate foreign earnings as permanently reinvested in order to meet analysts' forecasts. Graham, Hanlon, and Shevlin (2010) find that the financial reporting implications of permanently reinvested foreign earnings are associated with real corporate investment decisions overseas. Specifically, the incentive to avoid recognizing income tax expense in the income statement (thereby increasing net income) is an important factor in the firm's decision to repatriate the foreign earnings back to the U.S. or reinvest the earnings overseas. Nearly 50% of the respondent firms in Graham et al (2010)'s survey indicated the deferral of this income tax expense as an important factor to locate overseas.

As discussed earlier, ASC 740 requires companies that have disclosed PRE to also disclose the estimated tax liability from the repatriation of PRE, if it is practicable to do so. Therefore, firms do not need to disclose this estimated tax liability if it is impracticable and thus this disclosure is, in essence, a voluntary choice (Bagnoli and Watts, 2017). In fact, Ayers, Schwab, and Utke (2015) find that between 70-80% of the companies in their sample elect not disclose this information due to the impracticability consideration, but will disclose for opportunistic reasons. Bagnoli and Watts (2017) show that firms with increases in political costs and the probability of an investment mismatch are more likely to disclose the estimated tax liability. Eiler and Kutcher (2014) find that companies are less likely to disclose the estimated tax liability when they have greater tax complexity and are more likely to disclose the estimated tax liability when that expected tax liability is greater.

In summary, the literature on corporate lobbying indicates that companies lobby as a means of providing further information to legislators and government agencies help them make more informed decisions. However, studies also show that self-interest is also a key factor in lobbying activity since companies lobby in order to achieve a more favorable or desired outcome. In particular, the literature provides evidence that companies that are engaged in tax lobbying are able to lower their tax costs. Whilst some studies show that the political cost hypothesis explains why companies with higher political cost select more conservative reporting policies (Watts and Zimmerman, 1978; Jones, 1991), there is also evidence that companies with higher political costs are willing to incur costs in the short-run in order to benefit in the long-run (Aboody et al. 2003; Mills et al., 2013; Baloria and Klassen, 2017).

Given that the choice to disclose the estimated tax liability associated with PRE is one of a voluntary nature (Bagnoli and Watts, 2017), we suggest that this decision to disclose this information is part of the company's lobbying activity to achieve a favorable outcome (which is to reduce the tax rate on repatriated foreign earnings). In other words, firms will voluntarily disclose this information to legislators in order to provide them with further information so that they can determine the potential revenues accruing to the federal government if PREs were to be repatriated back to the U.S. Arguably, the amount of the forgone revenues from PREs may be estimated by applying the general corporate tax rate of 35% against PRE. This is, however, is only a crude measure since the estimation of the tax liability is also dependent on the timing of the repatriation of the PREs. Since

companies lobby on tax issues to achieve a more favorable tax outcome, we expect that companies that actively engage in tax lobbying will also voluntarily disclose the estimated tax liability associated with PREs. This is consistent with prior studies that show that companies will voluntarily choose financial reporting or tax practices in order to influence government decision-making (Jones, 1991; Mills et al., 2013; Baloria and Klassen, 2017). This leads to the following hypothesis:

H1: Companies that engage in tax lobbying are more likely to disclose the unrecognized estimated tax liability of PREs

3. Model Estimation Methods, Variable Measurement and Sample Selection

We examine the hypothesis that tax lobbying increases the likelihood of disclosure of the estimated, unrecognized tax liability of PREs specifically controlling for endogeneity of the lobby decision. In doing so, we recognize that the lobbying decision may be endogenous and correlated with unobservable factors that are also correlated with the disclosure decision outcome. Controlling for endogeneity of the lobby decision allows us to make unbiased inferences about the effects of lobbying on the likelihood of disclosure.

Both lobbying and disclosure are treated as dichotomous measures. Because our dependent variable, *Disclosure*, is dichotomous, a probit regression is more appropriate than a linear model. Moreover, our main variable of interest, *Lobby*, is also dichotomous and quite possibly endogenous in that lobbying may be correlated with unobservable factors that are also correlated with disclosure. An instrumental

variable probit model can handle the endogeneity, but not the non-linearity. Consequently, we use a control function approach (sometimes known as two-stage residual inclusion (2SRI).

With this approach, the first stage model of *Lobby* is specified as a probit model including the independent variables **X** in the main equation, a set of instrumental variables **Z**, and an error term ν

Lobby=F(**X**, **Z**,ν)

Our hypothesized relationship is that

Disclosure = G(Lobby, X) +μ

A polynomial function K of the residuals (e_2) from the first stage is then included in an expanded version of the main equation

Disclosure = G(Lobby, X) + K(e2)+ε

The error term from the original (unaugmented) main equation and the error term from the first stage equation are assumed independent of X and Z, but not of each other. If the first stage equation is properly specified, the residuals in the augmented equation ε=μ-K(ν) are purged of possible correlation with *Lobby*. We reject the hypothesis of exogeneity if the coefficient on the residual term is significant.

Our data contain multiple observations by firm, and thus errors are unlikely to be i.i.d. To account for this, we compute standard errors clustered on firm. We further approximate corrected standard errors by bootstrapping. We also consider an alternate to the 2SRI method as a test of our hypothesis since we are examining the two probit outcomes of tax related lobbying and firms' disclosing an estimate of

the unrecognized tax liability on PRE. We use a bivariate probit model on this system of equations in which the independent variables X are common to the lobby and disclosure functions, but the instrumental variables Z are excluded from the disclosure function. The full bivariate probit model a is maximum likelihood estimation of the system of equations, in which we measure robust standard errors clustered by firm. We reject the hypothesis of exogeneity of the excluded instruments (i.e., that Rho, the correlation of the error terms of the equations is equal to zero) if the Wald-test statistic is significant.

3.1 Measure of Dependent Variables

Since 2009, the SEC has mandated that all publicly listed companies are required to file their 10-Ks and 10-Qs using XBRL (eXtensible Business Reporting Language). This means that each quantitative piece of information disclosed on the facing statements and in the footnotes is tagged with an element (i.g., 'tag') from the U.S. GAAP Financial Reporting Taxonomy ('UGT') published by the FASB. In addition, each footnote is 'block-tagged' which means that each footnote is tagged as a block of text with an appropriate element from the UGT. In this study we use the element from the UGT *us-gaap_UndistributedEarningsOfForeignSubsidiaries* to identify which companies disclosed cumulative permanently reinvested foreign earnings. The definition for the element is as published in the taxonomy is: "Amount of undistributed earnings of foreign subsidiaries intended to be permanently reinvested outside the country of domicile." We also capture those companies that create custom tags (i.e., 'extension elements') to tag PRE using the following

tokenized words in the extension element name: “unremitted”, “indefinitely reinvested”, and “permanently reinvested”.

Upon identifying those firms that have PRE, we use the element *us-gaap_DeferredTaxLiabilityNotRecognizedAmountOfUnrecognizedDeferredTaxLiability UndistributedEarningsOfForeignSubsidiaries* to identify the disclosure of the estimated, unrecognized tax liability. The definition of this element is: “Amount of deferred tax liability not recognized because of the exceptions to comprehensive recognition of deferred taxes related to undistributed earnings of foreign subsidiaries.” We also search the income tax footnote for mentions of “not practicable” to estimate the liability associated with the PRE. Based on this, the dependent variable of the main model, *DISCLOSE,* is an indicator variable set to one for each firm in year t that provided disclosure of the estimated, unrecognized deferred tax liability on PRE (including those cases in which the firm disclosed the amount of zero), or zero otherwise.

Our primary factor of interest is LOBBY. We identify the tax-lobbying activities of firms using the website https://www.opensecrets.org/lobby/index.php. The lobbying data from this website is compiled using the disclosure reports filed with the Secretary of the Senate’s Office of Public Records. This variable is set to one if the firm engaged in any tax-related lobbying activity in year t, or zero otherwise.

3.2 Measure of Control Variables

3.2.1 Variables Related to Unrecognized Deferred Tax Liabilities On PREs

We follow Eiler and Kutcher (2014) with respect to variables relevant to the estimated, unrecognized deferred tax liability on PRE. *PRE_TA* is the cumulative amount of PRE, scaled by total assets. Firms with more PRE may be more likely to disclose the estimated, unrecognized deferred tax liability as part of its lobbying effort, making visible the amount of revenue that the U.S. government is forgoing. Alternatively, the complexity of estimating the deferred tax liability may be increasing in PRE, which in turn would reduce the likelihood of the firm disclosing an estimate of the deferred tax liability. *LOW_FETR* is an indicator variable set to 1 if the firm's foreign effective tax rate is in the lowest quintile of the sample. Such firms are likely to strategically locate operations abroad to manage their tax expense. This adds complexity to the firm's operation making it more difficult to produce an estimate of the unrecognized deferred tax liability, suggesting an inverse relation with disclosure. An interaction of *PRE_TA* and *LOW_FETR* (*PRE_TA*LOW_FETR)* indicates that the firm would likely incur higher amounts of taxes upon repatriation to the U.S. We measure book-tax difference as deferred income taxes divided by pre-tax income. *BIG_BTD* is an indicator variable set to one if the book-tax difference is in the highest or lowest quintile of the ranked book-tax difference measure, zero otherwise. Larger deferred income tax assets or liabilities would likely make it more difficult for management to estimate the unrecognized deferred tax liability. We therefore expect *BIG_BTD* to reduce the likelihood of disclosure. *PER_FSALES* is equal to the amount of foreign sales divided by total sales. Firms with higher

percentages of foreign sales would likely require more expert strategic tax planning and have an increased likelihood of disclosure.

We include an indicator variable set to one if the firm is a listed on a U.S. exchange or on the NASDAQ as an American Depository Receipt ('ADR'), 0 otherwise. Such firms may have engaged in reverse mergers providing incentives to lobby and disclose the estimated tax liability since the firm is 'headquartered' overseas and may want to come back to the U.S.

3.2.2 Agency Variables

As discussed in Section 2, managers have incentives to disclose private information if there is a net benefit of doing so; reducing information asymmetries between the firm and capital market participants may reduce the cost of capital, or agency costs of bonding and monitoring. In the case of political lobbying, though managers expect a wealth transfer vis a vis lower effective tax rates, lobbying can be costly. We include variables that represent agency costs and firms' information environments.

Hanlon, et al. (2015) document a differential relation through estimation of separate models of tax-induced foreign cash on the likelihood of foreign and U.S. investments, suggesting investment inefficiencies (mismatch). Bagnoli and Watts (2017) consider investment mismatch as a cost of disclosure in the case where cash on PRE trapped abroad constrains the firm from acquiring valuable investment opportunities in the U.S. We follow Biddle, Hilary, and Verdi, 2009 to measure a proxy for this case of investment mismatch. We estimate an OLS regression of

foreign (U.S.) investment for firm i, year (t+1) on foreign (U.S.) growth measured as the change in foreign (U.S.) sales from year (t-1) to year t. We estimate the regression annually by industry. We include the quartile ranking of the firm-specific residual from the estimated regressions for foreign (*FRESID_RANK*) and U.S. (*USRESID_RANK*) individually in two separate model estimates as proxies for investment mismatch.[8]

Bloomberg collects public company data to provide analysts and other Bloomberg terminal users with various metrics that are part of its overall assessment of firms environmental, social, and governance performance. One component is their *GOVNCE_DISC_SCORE*. The score ranges from 0 (Bloomberg does not cover the firm) to 100, based on factors related to Board of Director characteristics including the percentages of independent directors and women directors on the Board, average age of the directors, percentage of meetings attended, board size, board age range, total CEO compensation, and executive average compensation. We consider this measure as an agency cost of governance, and expect that firms with higher *GOVNCE_DISC_SCORE* have lower information asymmetry with shareholders (lower costs) and be more likely to disclose.[9] We would also predict a positive relation between the number of analysts covering the firm *(LN_ANALYST)* and disclosure in that analysts provide useful information to market participants that can lower their assessment of risk related to estimates of

[8] In a later section on sensitivity analysis we report the results of adding both *FRESID_RANK* and *USRESID_RANK* to the model.

[9] In the sensitivity analysis section following our results section, we re-estimate our models to include Bloomberg's overall measure of firms' environmental, social, and governance performance in lieu of the *GOVNCE_DISC_SCORE.*

the company's expected performance. We measure *LN_ANALYST* as ln (1+ number of analysts covering the firm). We employ a measure of leverage, *LEV* (the sum of debt in current liabilities and long-term debt scaled by total assets). Since debtholders can mitigate agency costs we expect *LEV* to be positively related to disclosure. We also include a measure of free cash flow (*CF*) as market participants likely assess lower risk relative to firms with higher free cash flow. We measure *CF* as operating income before depreciation less the sum of (interest expense, income taxes and common dividends) scaled by total assets. We measure *SIZE* as the natural log of total assets. Large firms have greater political visibility and may be more likely to disclose the estimated, unrecognized deferred tax liability. Alternatively, *SIZE* may reduce the likelihood of firms disclosing the estimated, unrecognized deferred tax liability because larger firms have more complex operations and estimation would be more difficult.

3.3 Instrumental/exclusion Variables

We follow Hill, Kubick, Lockhart, and Wan (2013) in their use of three instrumental variables that influence the manager's decision to engage in lobbying, but are unrelated to the manager's decision to disclose an estimate of the unrecognized deferred tax liability. The first variable, *CC* is set equal to one if the firm's primary operation is located in capital of the state in which the firm has its headquarters, zero otherwise. Managers of firms located in the state's capital city are geographically near to their state representatives and may be more likely to lobby. The second variable, *LNECOL* is the natural logarithm of the number of Electoral College votes for the state. Managers in states with more Electoral College

votes have greater political representation and may be less likely to lobby. The third variable is an interaction variable of *CC***LNECOL.* The interaction considers that firms influence vis a vis the location of headquarters within a capital city of a state may not have equivalent influence across capital cities. We also follow the existing literature and include a fourth variable, the Herfindahl- Hirschman index (*HHI*), a measure of industry concentration. Firms that operate within more concentrated industries are likely to be more politically active or politically connected (e.g., Kim and Zhang, 2016).

Table 1, panel A provides descriptive statistics of the variables. Firms disclosing the estimated, unrecognized deferred tax liability on PRE have significantly higher amounts of PRE, and a probability of investment mismatch (over-investment abroad, but not in the U.S.). Disclosing firms have, on average, higher leverage, and are larger. On average, approximately 13% of disclosing firms are ADRs while nearly 4% of non-disclosing firms are ADRs.

3.4 Sample Selection

Although the SEC mandated that all publicly-listed companies are required to file their 10-Ks and 10-Qs in XBRL from 2009 onwards, the requirement was phased-in for different tiers of companies over a three-year period from 2009-2011. The first group of companies that were required to file in XBRL were companies with a public market float of $5 billion and above (‘‘Tier 1’’ firms). The remaining companies were required to file XBRL on a phased-in schedule over the subsequent two years (‘‘Tier 2’’ firms in the second year of the phase-in period, and ‘‘Tier 3’’ firms (the smallest group of firms) in the final year of the phase-in period). All

public U.S. companies were required to file in XBRL by December 2011. Since we leverage XBRL data to identify the universe of companies with PRE, we limit our period of analyses from 2011-2016.

First, we identified all companies that disclosed PRE in the income tax footnote (with all available data used in our analyses for our main results). As noted in Table 1, Panel B, there were 350 companies in 2011 that disclosed PRE, 644 companies in 2012, 780 companies in 2013, 813 companies in 2014, and 697 companies in 2015 that disclosed PRE. Of the 350 companies disclosing PRE in 2011, only 12 companies (3.43%) disclosed the estimated tax liability associated with PRE, whilst the remaining companies opted for the impracticability consideration. In 2012, 3.73% of companies disclosed the estimated liability, and that percentage quadrupled in 2013 to 13.72%. This percentage increased to 16.97% and 17.65% in 2014 and 2015, respectively. Overall, we see an increasing trend in the propensity to disclose the estimated liability of PRE over this period.

4. Empirical Results

Our results for the two-stage residual inclusion probit regressions are presented in Table 2. The main result for the second-stage probit regressions (Models 1 and 2) are presented in Panel A. Models 1 and 2 include, separately, the proxies for investment mismatch, *FRESID_RANK* and *USRESID_RANK*, respectively. Consistent with our hypothesis, we find that in both Models 1 and 2, our variable of interest, *LOBBY*, is positively associated with *DISCLOSE* (t = 2.39 and t = 2.25, respectively). This suggests that companies with PRE that lobby on taxes are more

likely to also disclose the estimated liability associated with PRE. We also find that *ADR* is positively associated with *DISCLOSE*, indicating that foreign firms that are traded on stock exchanges in the U.S. are more likely to disclose the estimated tax liability associated with PRE. This is consistent with companies that have 'relocated' their headquarters overseas and may want to return to the U.S., and therefore have incentives to lobby and disclose the estimated tax liability of PRE. We also find that *SIZE* is significantly negative in both models, consistent with our expectations that larger firms have greater political visibility and thus are less likely to disclose the estimated liability associated with PRE. In addition, larger firms may be more complex and therefore estimation of the PRE tax liability may be more difficult. We also find that *FRESID_RANK* is marginally positive which suggests that firms that are over-invested in foreign operations are more likely to disclose the estimated liability on PRE, while *USRESID_RANK* is unrelated to the likelihood of disclosure. This is consistent with the manager benefiting from reduced information asymmetries about the expected value of the firm given the probability of the costs of investment mismatch (e.g., foregoing valuable U.S. investment opportunities if the firm must repatriate foreign cash or if alternative financing is too costly). Market expectations of the value of the firm that discloses, is likely to be higher than the expected value of the pool of firms that do not disclose. Additionally, the agency costs associated with foreign over-investments are alleviated by the disclosure of the estimated tax liability on PRE, which the market can use to better estimate financing costs of the firm (Bagnoli and Watts, 2017). Finally, the significance of the residual from the

first-stage model in the second-stage regression indicates that we have potential endogeneity and therefore appropriately controlled for it in our main results.

Table 2, Panel B presents the coefficient estimates of our first-stage regression of the likelihood of *LOBBY*. We find that ADR is significantly negative in both Models 1 and 2, indicating that foreign firms are less likely to engage in tax lobbying activities (t = -2.43 and t = -2.37, respectively). We find that *FRESID_RANK* is significantly negative (t = -3.19), indicating that firms that over-invest in foreign operations are less likely to engage in tax lobbying activities. Interestingly, we find that *GOVNCE_DISC_SCORE* is positively associated with *LOBBY*, suggesting that firms with lower agency costs are more likely to lobby on tax issues. Larger firms are more likely to lobby on tax issues (*SIZE*) , consistent with expectations that larger firms have more resources to dedicate to corporate lobbying activities (t = 11.13 and t = 10.83). Firms in highly concentrated industries (HHI) and more competitive industries are more likely to also engage in tax lobbying activities (t = 2.90 and t = 2.55). This is consistent with expectations that firms in more highly concentrated industries are more able to exert more influence through the political process.

Table 3 presents the results from the bivariate probit regression, providing a maximum likelihood estimation of two univariate probit models. The table first presents the reduced form, main equation that estimates the relation between *LOBBY* and the likelihood of *DISCLOSE* excluding variables related to the likelihood of *LOBBY* but unrelated to the likelihood *of DISCLOSE* (*HHI, CC, LNECOL*). Our main variable of interest, *LOBBY*, continues to be positively associated with DISCLOSE for both Models 1 and 2 (t = 2.39 and t = 2.33, respectively). The remaining results on

the control variables are qualitatively consistent with Table 2; Panel A. Table 3 next presents the results of the full model (appearing after the constant of the reduced form model. The results of this full model show that with the exception of PRE_TA which is marginally significant (compared to insignificance in Table 2, Panel B), the results on the remaining control variables are similar to the results in Table 2. The Wald test-statistic indicates a rejection of the null hypothesis the *LOBBY* variable is exogenous, further confirming the need to control for the exogenous variable *LOBBY*.

In summary, our findings suggest that firms with PRE that explicitly lobby on tax issues are also more likely to voluntarily disclose the estimated liability associated with PRE. This contributes to extant literature that suggests that firms are likely to choose financial reporting or tax practices in order to influence government decision-making.

5. Sensitivity Analyses

In further sensitivity analyses, we include both proxies for the investment mismatch (*FRESID_RANK* and *USRESID_RANK*) in both our two-stage inclusion probit regression and bivariate probit regression. The results are presented in Table 4. *LOBBY* continues to be positively associated with *DISCLOSE* on both second-stage regression models, consistent with our main findings. Both *ADR* and *SIZE* continue to be positively and negatively, respectively, associated with *DISCLOSE*. *FRESID_RANK* continues to be positively associated with *DISCLOSE*.

6. Conclusion

Much of the public discourse promulgated by proponents of the Tax Cuts and Jobs Acts touches on the intention of the Act to encourage companies to repatriate their foreign earnings back to the U.S. by lowering the corporate statutory tax rate. The extent and influence of lobbying in the political process is pervasive, particularly among large multinational firms. Tax-lobbying has come to the forefront of late, particularly given the magnitude of earnings that firms have chosen to accumulate abroad. This study examines the very timely and relevant issue of corporate lobbying activities and voluntary disclosure of tax-related information in influencing government decision-making.

We examine whether companies with permanently reinvested foreign earnings that actively engage in the formal lobbying process also engage in 'informal' lobbying by voluntarily disclosing the estimated tax liability associated with the repatriation of permanently reinvested foreign earnings. Since, ASC 740 provides companies with the option to elect not to disclose this information due to the impracticability of such a disclosure, the question becomes: "Why do firms voluntarily incur cost to disclose this information"? We argue that firms voluntarily disclose this information as another means of lobbying Congress to lower corporate taxes on repatriated earnings. By disclosing this estimate, corporations can provide a conservative proxy on potentially forgone tax revenues accruing to the federal government.

Our main findings suggest that companies with permanently reinvested foreign earnings that engage actively in tax lobbying are also more likely to

voluntarily disclose the estimated tax liability associated with the repatriated earnings. This finding is robust to controls for endogeneity in the lobbying decision using a two-stage residual inclusion probit regression model and a bivariate probit regression model, agency variables, and variables related to unrecognized deferred tax liabilities on permanently reinvested foreign earnings.

The findings contribute in the following ways. First, we contribute to the literature by linking the corporate political action and PRE-related disclosure. Second, we also address the call for more research on answering the question of why firms engage in voluntary disclosure in the first place (Healy and Palepu, 2001). Third, our study is relevant to standard setters' concurrent deliberations on income-tax related disclosure. Finally, the findings of our study contribute to the ongoing public tax policy discussions surrounding the Tax Cuts and Jobs Acts and its intention to incentivize corporations to repatriate accumulated foreign earnings to the U.S.

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Table 1 Panel A Descriptive Statistics
Reported t-test statistic represents a t-test of differences between mean values; reported z-test statistic represents the Wilcoxon ran-sum test of differences between median values.

See Appendix for variable definitions.

	DISCLOSE=1			DISCLOSE=0				
Variable	mean	sd	p50	mean	sd	p50	test of difference	p-value
Independent Variable								
LOBBY	.2228	.4166	0	.1896	.392	0	z=-0.324	0.746
Control Variables								
PRE_TA	6.3e-05	2.2e-04	3.9e-06	2.4e-04	8.7e-04	3.5e-05	t=9.141	0.000
LOW_FETR	.8267	.3789	1	.8201	.3841	1	z=-0.324	.746
BIG_BTD	.3292	.4705	0	.3542	.4783	0	z=0.984	0.325
PER_FSALES	.4912	.3133	.4476	.4683	.2903	.4236	t=-1.387	0.166
ADR	.1287	.3353	0	.0365	.1875	0	z=-8.138	0.000
FRESID_RANK	1.678	1.107	2	1.493	1.059	1.5	z=-3.283	0.001
USRESID_RANK	1.613	1.092	2	1.578	1.065	2	z=-0.66	0.509
GOVNCE_DISC_SCORE	52.07	7.341	51.79	51.92	5.875	51.79	t=-0.386	0.700
LN_ANALYST	.9992	1.3	0	.8971	1.27	0	t=-1.482	0.139
LEV	.238	.199	.2051	.2104	.1905	.1858	t=-2.69	0.009
CF	.0616	.1004	.0767	.0673	.1072	.079	t=1.050	0.294
SIZE	7.972	1.88	8.029	7.621	1.858	7.526	t=-3.512	0.000
Instrumental Variables								
HHI	584	675.9	407.1	544.9	570.4	409.2	t=-1.110	0.268
CC	.0668	.25	0	.0552	.2284	0	z=-0.946	0.344
LNECOL	2.649	1.242	2.89	2.931	.9189	2.996	t=4.405	0.000
Observations	404			2880				

Panel B: Disclose Frequency by year

disclose	2011	2012	2013	2014	2015	Total
0	338	620	673	675	574	2,880
	96.57	96.27	86.28	83.03	82.35	87.70
1	12	24	107	138	123	404
	3.43	3.73	13.72	16.97	17.65	12.30
Total	350	644	780	813	697	3,284
	100.00	100.00	100.00	100.00	100.00	100.00

Table 2 Likelihood of disclosure, 2-stage residual inclusion estimation method.

This table presents the results of the second-stage probit regressions that test the relation between tax-related lobbying and the likelihood of the firm disclosing the estimated, unrecognized deferred tax liability. Z-statistics are presented below the estimated variable coefficients. The significance of the variable coefficients are at the 10%, 5%, and 1% respectively, notated as *, **, and ***.

See Appendix for variable definitions.

Panel A: Second-Stage Regression

Variable	2SRI (1)	2SRI (2)
LOBBY	1.011**	1.046**
	(2.39)	(2.25)
PRE_TA	-695.431	-695.442
	(-0.33)	(-0.41)
LOW_FETR	0.008	0.019
	(0.05)	(0.13)
*PRE_TA*LOW_FETR*	-239.301	-242.842
	(-0.13)	(-0.16)
BIG_BTD	-0.035	-0.042
	(-0.45)	(-0.51)
PER_FSALES	-0.014	0.160
	(-0.08)	(0.92)
ADR	0.831***	0.826***
	(3.87)	(3.20)
FRESID Rank	0.089**	
	(2.07)	
USRESID Rank		0.019
		(0.48)
GOVNCE_DISC_SCORE	-0.009	-0.007
	(-0.86)	(-0.58)
LN_ANALYST	-0.032	-0.040
	(-0.78)	(-0.93)
LEV	0.240	0.225
	(0.90)	(0.90)
CF	0.026	-0.025
	(0.07)	(-0.06)
SIZE	-0.138**	-0.142**
	(-2.27)	(-2.19)
resid1	-1.089**	-1.148**
	(-2.34)	(-2.29)
resid1_sq	0.159	0.180
	(0.64)	(0.72)
Constant	-0.681	-0.727
	(-1.00)	(-0.96)
Year Fixed Effects	Y	Y
Observations	3284	3246
Psuedo R^2	0.100	0.0942

Panel B: First-Stage Regression

Variable	2SRI	2SRI
PRE_TA	-4491.324	-4368.933
	-1.67	-1.68
LOW_FETR	-0.195	-0.195
	-1.35	-1.34
*PRE_TA*LOW_FETR*	3949.936	3792.969
	1.47	1.46
BIG_BTD	0.074	0.085
	0.85	0.98
PER_FSALES	0.235	-0.018
	1.07	-0.09
ADR	-1.087	-1.073
	-2.43	-2.37
FRESID Rank	-0.169	
	-3.19	
USRESID Rank		-0.034
		-0.66
GOVNCE_DISC_SCORE	0.043	0.043
	4.15	4.13
LN_ANALYST	0.047	0.051
	1.06	1.15
LEV	-0.528	-0.468
	-1.62	-1.42
CF	0.608	0.559
	0.65	0.61
SIZE	0.646	0.623
	11.13	10.83
HHI	0.000	0.000
	2.90	2.55
CC	-0.791	-0.876
	-0.98	-1.10
LNECOL	-0.155	-0.162
	-1.47	-1.56
CC_lnECOL	0.253	0.292
	0.78	0.91
Constant	-7.827	-7.706
	-9.82	-9.58
Year Fixed Effects	Y	Y
Observations	3284	3246
Psuedo R^2	0.472	0.466

Table 3 Likelihood of disclosure, bivariate probit estimation method.
This table presents the results of the bivariate probit regressions that test the relation between tax-related lobbying and firm disclosure of the estimated, unrecognized deferred tax liability. Z-statistics are presented below the estimated variable coefficients. The significance of the variable coefficients are at the 10%, 5%, and 1% respectively, notated as *, **, and ***.
See Appendix for variable definitions.

	bivariate probit (1)	bivariate probit (2)
LOBBY	0.642**	0.632**
	(2.39)	(2.33)
PRE_TA	-700.853	-701.674
	(-1.38)	(-1.37)
LOW_FETR	0.002	0.012
	(0.01)	(0.10)
LOW_FETR PRE_TA*	-216.836	-218.263
	(-0.72)	(-0.70)
BIG_BTD	-0.032	-0.037
	(-0.39)	(-0.46)
PER_FSALES	-0.03	0.127
	(-0.18)	(0.75)
ADR	0.795***	0.787***
	(3.8)	(3.51)
FRESID_RANK	0.082*	
	(1.94)	
USRESID_RANK		0.015
		(0.4)
GOVNCE_DISC_SCORE	-0.004	-0.001
	(-0.41)	(-0.07)
LN_ANALYST	-0.027	-0.033
	(-0.67)	(-0.80)
LEV	0.173	0.154
	(0.73)	(0.66)
CF	-0.038	-0.099
	(-0.12)	(-0.29)
SIZE	-0.086*	-0.085*
	(-1.91)	(-1.89)
Constant	-1.165**	-1.283**
	(-2.06)	(-2.13)
HHI	0.000***	0.000***
	3.23	2.89
CC	-0.802	-0.902
	-0.97	-1.09
LNECOL	-0.149	-0.154
	-1.43	-1.50
CC_LNECOL2	0.238	0.284
	0.71	0.85
PRE_TA	-4639.958*	-4537.290*
	-1.76	-1.77

LOW_FETR	-0.185	-0.187
	-1.28	-1.27
SIZE	0.638***	0.616***
	11.00	10.72
LOW_FETR.PRE_TA*	3914.304	3768.352
	1.48	1.46
BIG_BTD	0.077	0.087
	0.90	1.02
PER_FSALES	0.243	-0.001
	1.12	-0.01
ADR	-1.067**	-1.041**
	-2.41	-2.32
GOVNCE_DISC_SCORE	0.044***	0.044***
	4.32	4.30
LN_ANALYST	0.041	0.046
	0.93	1.03
LEV	-0.526*	-0.466
	-1.66	-1.45
CF	0.493	0.460
	0.57	0.55
FRESID RANK	-0.166**	
	-3.13	
USRESID RANK		-0.031
		-0.61
ESG_DISC_SCORE		
CONSTANT	-7.845***	-7.728***
	-9.96	-9.73
Year Fixed Effects	Y	Y
Observations	3284	3246
Wald test-statistic χ^2	5.11**	5.16**

Table 4 Likelihood of disclosure, alternate estimations that include both fresid_rank and USresid_rank.

This table presents the results of the bivariate probit regressions that test the relation between tax-related lobbying and firm disclosure of the estimated, unrecognized deferred tax liability. Z-statistics are presented below the estimated variable coefficients. The significance of the variable coefficients are at the 10%, 5%, and 1% respectively, notated as *, **, and ***.

See Appendix for all variable definitions.

Variable	2SRI	biprob4
LOBBY	0.995**	0.614**
	2.24	2.26
PRE_TA	-702.461	-707.670
	-0.42	-1.39
LOW_FETR	0.009	0.003
	0.06	0.03
*PRE_TA*LOW_FETR*	-230.117	-209.756
	-0.16	-0.69
BIG_BTD	-0.034	-0.031
	-0.42	-0.38
PER_FSALES	-0.004	-0.022
	-0.02	-0.13
ADR	0.806***	0.773***
	3.16	3.47
FRESID Rank	0.089**	0.081*
	2.06	1.90
USRESID Rank	-0.010	-0.011
	-0.27	-0.28
GOVNCE_DISC_SCORE	-0.005	0.000
	-0.46	0.03
LN_ANALYST	-0.039	-0.033
	-0.92	-0.82
LEV	0.244	0.174
	0.97	0.74
CF	-0.047	-0.115
	-0.12	-0.34
SIZE	-0.144**	-0.090
	-2.28	-1.98**
resid1	-1.090**	
	-2.28	
resid1_sq	0.196	
	0.81	
Constant	-0.784	-1.304**
	-1.06	-2.17
Year Fixed Effects	Yes	Yes

Observations	3246	3246
pseudo R^2	0.096	
Wald test-statistic χ^2		4.72**

APPENDIX : Variable Definitions

Variable Name	Variable Measurement
DEPENDENT VARIABLES	
DISCLOSE_CLEAN	Indicator variable set to one if the firm disclosed its estimated amount of unrecognized deferred tax liability on permanently reinvested foreign earnings; zero otherwise
LOBBY	
TAX RELATED DISCLOSURE CONTROLS	
PRE_TA	Amount of permanently reinvested foreign earnings scaled by total assets.
LOW_FETR	Indicator variable set to one if the firm-year quintile ranking of the cumulative foreign effective tax rate is the lowest rank, zero otherwise; cumulative foreign effective tax rate measured using Compustat data as the sum of current foreign taxes over year t-2 to year t (TXFO) divided by the sum of pre-tax foreign earnings over the same period (PIFO).
PRE*LOW_FETR	Interaction of PRE_TA and LOW_FETR.
BIG_BTD	Indicator variable set to one if the book-tax difference is in the highest or lowest quintile ranking, zero otherwise; the book-tax difference is measured using Compustat data as deferred income tax (TXDI) divided by income before extraordinary items (IB).
PER_FSALES	Foreign sales (from Compustat segment data) divided by total sales.
ADR	Indicator variable set to one if the firm is listed in the U.S. as an ADR, zero otherwise.
FRESID_RANK	We estimate an OLS regression by year and fama-french 48 industry codes of Foreign Investment $(t+1)$ (foreign capital expenditures/lagged property plant and equipment) on the change in foreign sales from year (t-1) to year t. We rank the residual difference between the predicted and actual foreign investment in quartiles, which represents foreign-overinvestment at the highest quartile and foreign underinvestment at the lowest quartile.
USRESID_RANK	We estimate an OLS regression by year and fama-french 48 industry codes of U.S. Investment $(t+1)$ (U.S. capital expenditures/lagged property plant and equipment) on the change in U.S. sales from year (t-1) to year t. We rank the residual difference between the predicted and actual foreign investment in quartiles, which represents U.S. overinvestment at the highest quartile and U.S. underinvestment at the lowest quartile.
GOVNCE_DISC_SCORE	Bloomberg produces a proprietary score of the extent of a company's Environmental, Social, and Governance (ESG) disclosure. The Bloomberg ESG group assigns a score ranging from 0.1 to 100 that reflects whether firms publicly report (disclose) specified data points rather than firms' performance on those data points. The GOVNCE_DISC_SCORE is a component of the ESG disclosure evaluation. In this case, the Bloomberg weights the data points to emphasize Board of Director characteristics including the percentages of independent directors and women directors on the Board, average age of the directors, percentage of meetings

	attended, board size, board age range, total CEO compensation, and executive average compensation.
LN_ANALYST	Natural log of 1 + number of analysts following the firm.
LEV	Debt in current liabilities (Compustat DLC) + long-term debt (Compustat DLTT) divided by total assets
CF	Operating income before depreciation less the sum of (interest expense, income taxes and common dividends) divided by total assets (Compustat items OIBDP, XINT, TXT, DVC)
SIZE	Natural log of total assets.
LOBBY INSTRUMENTS	
HHI	Annual sum of squared market shares in each industry.
CC	Indicator variable set to one if the firm is headquartered in a U.S. capital city, zero otherwise.
LNECOL	Natural log of the Electoral College votes allocated to the state in which the firm is headquartered.
CC_LNECOL2	Interaction of CC*LNECOL2