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Journal

JOURNAL OF ACCOUNTING & ECONOMICS, 64(1)

ISSN

0165-4101

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Publication Date

2017

DOI

10.1016/j.jacceco.2017.06.004

Peer reviewed

Does U.S. Foreign Earnings Lockout Advantage Foreign Acquirers?

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June 14, 2017

Abstract

We hypothesize and find evidence consistent with foreign firms being tax-favored acquirers of U.S. targets with greater locked-out earnings because they can avoid the U.S. tax on repatriations. This effect is economically significant; a standard deviation increase in lockout is associated with a 12% relative increase in the likelihood that an acquirer is foreign. We also find evidence that foreign acquirers of the target firms are more likely to be residents of countries that use territorial tax systems, as the tax advantages for a foreign firm acquiring a U.S. target with locked-out earnings are even greater for these acquirers.

Keywords: Taxes, International, Acquisitions

JEL codes: F23, G34, H25

Data Availability: Data used in this study are available from public sources identified in the paper.

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Abstract

We hypothesize and find evidence consistent with foreign firms being tax-favored acquirers of U.S. targets with greater locked-out earnings because they can avoid the U.S. tax on repatriations. This effect is economically significant; a standard deviation increase in lockout is associated with a 12% relative increase in the likelihood that an acquirer is foreign. We also find evidence that foreign acquirers of the target firms are more likely to be residents of countries that use territorial tax systems, as the tax advantages for a foreign firm acquiring a U.S. target with locked-out earnings are even greater for these acquirers.

1. Introduction

Various business and political leaders in the United States have expressed concerns that the U.S. system of taxing multinationals effectively subsidizes foreign takeovers (White 2014, Hatch 2014). Prior research on mergers and acquisitions (M&A) demonstrates how variation in tax rates (Scholes and Wolfson 1990, Arulampalam et al. 2010) and in tax systems (Huizinga and Voget 2009, Feld et al. 2016) impact the market for corporate control. As a result, firms under a worldwide tax system are tax-disadvantaged *acquirers*. Furthering this line of inquiry, we posit that firms under a worldwide tax system are also tax-favored *targets* of foreign acquirers. We find that U.S. firms with locked-out earnings are tax-favored to foreign acquirers (or equivalently tax-disfavored to U.S. acquirers).

Foreign earnings "lockout" results when firms avoid or delay foreign earnings repatriation. Under the U.S. worldwide tax system, taxes owing to the U.S. government on the earnings of foreign subsidiaries are deferred until those earnings are repatriated to the U.S. Consequently, firms' repatriation decisions are sensitive to the level of repatriation taxes (Desai et al., 2001; Hines and Hubbard, 1990) and tax incentives lead to higher overseas cash holdings (Foley et al. 2007). Hanlon et al. (2015) and Edwards et al. (2016) demonstrate that firms use "trapped cash" to make suboptimal foreign investments, increasing total lockout.[1] A foreign acquirer may be able to free a target's foreign subsidiaries' locked-out earnings from the U.S. worldwide tax system using "out-from-under" strategies, utilizing trapped cash elsewhere and liquidating suboptimal foreign investments so the proceeds may be more efficiently redeployed.[2]

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[1] For clarity, we use the term "trapped cash" to describe the U.S. repatriation tax-motivated foreign cash and passive investments holdings of U.S. multinationals. We discuss issues with measuring trapped cash in section 6.3.

[2] In addition to unlocking past locked-out earnings, with planning, some future non-U.S. earnings of the new entity could avoid U.S. repatriation taxes that would exist under the old structure. Also, following the acquisition, the foreign acquirer could increase income shifting out of the U.S. and into low tax jurisdictions. These additional

To test this hypothesized relation between tax lockout in target U.S. firms and the nationality of acquirers – foreign *vs.* U.S. – we use a sample of 4,611 majority acquisitions of U.S. public company target firms from 1995 to 2010. We measure lockout using the hand-collected balance of permanently reinvested earnings (PRE) reported in the tax footnote. Employing a probit model, we observe a positive association between the target firm's level of PRE and the probability that the acquirer is foreign. The effect is economically significant: a standard deviation increase in PRE is associated with a 12% relative increase in the likelihood that an acquirer is foreign. These findings suggest that potential U.S.-based acquirers of U.S. targets with trapped cash and suboptimal foreign investments are losing out to foreign acquirers.

Building upon these initial findings and improving identification of our main hypothesized effect, we posit that foreign acquirers of U.S. target firms with higher levels of tax lockout are more likely to be residents of countries that use territorial tax systems. In a territorial system, foreign earnings are subject to low or no home country tax, thereby eliminating the lockout effect.[3] Categorizing acquisitions according to acquirer tax systems, we observe a significant association between our lockout measures and foreign acquisitions occurring under the territorial (as opposed to worldwide) tax regime.

In an additional test we exploit an exogenous change in the tax system for a subset of acquirers: during our sample period, five OECD countries switched from worldwide to territorial tax systems. As it is unlikely that switching tax systems increased incentives to acquire U.S. firms with higher levels of tax lockout for reasons other than taxation (e.g., general preference

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factors are also likely drivers of our hypothesized effect. Empirically, these are difficult to disentangle, as proxies for lockout are correlated with proxies for future profits and the potential for income shifting is difficult to observe from public data. The focus of this study is on unlocking past lockout but we discuss these other factors with the research design.

[3] The incentives for a worldwide-system foreign acquirer to target a U.S. firm with locked-out earnings could still exist if the statutory tax rate in the acquirer's country is lower than the U.S. rate. However, our sample includes few acquisitions from worldwide-system countries with low tax rates.

for targets with greater foreign activity or higher profitability), this test allows for stronger causal identification. Taken together, these tests provide strong evidence that the relationship between a target's level of locked-out earnings and the likelihood of an acquirer being foreign is concentrated in acquiring firms that operate under territorial tax systems.

Our findings suggest that U.S. potential acquirers of U.S. target firms with greater levels of locked-out earnings are losing out to foreign acquirers.[4] These results speak directly to the current U.S. policy debate on repatriation taxes as well as the broader issue of the relative merits of territorial versus worldwide (with deferral) taxation systems. These findings are also relevant to those countries considering a transition between worldwide and territorial tax systems, as notably undertaken by the U.K. and Japan. Likewise, this examination of the relationship of tax systems, lockout, and foreign acquisitions of U.S. target firms highlights a facet of the current worldwide tax system and may serve to inform its adjustment or alteration.

The subsequent section of this paper provides institutional information and discusses prior literature. Section 3 describes the hypotheses. Section 4 details the sample selection and research design. Section 5 presents our findings. Section 6 discusses additional analyses. Section 7 concludes.

2. Institutional Background and Prior Literature

2.1 U.S. Tax and Accounting Treatment of Foreign Earnings

The U.S. taxes its multinational corporations on a worldwide basis. For a single legal entity, worldwide earnings are taxed immediately in the period earned. For firms comprised of multiple legal entities, however, U.S. taxation of income earned in foreign subsidiaries is

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[4] In addition, this specific issue is currently being discussed and speculated upon in the business press (see for example "Abetting Foreign Takeovers" - *Wall Street Journal,* August 4, 2015 - and "A Tax Inversion in All But Name" – *New York Times,* August 8, 2014).

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typically deferred until repatriation. This U.S. tax is reduced by foreign tax credits associated with foreign taxes paid on foreign earnings. This calculation is complicated by foreign operations in multiple jurisdictions, but the residual tax due is approximately equal to any excess of the U.S. tax rate over the weighted average rate of the foreign jurisdictions. Given the option of deferral and the high U.S. corporate tax rate, there is a potential policy concern that foreign investment by U.S. multinationals is inefficiently subsidized, so that firms are induced to reinvest their earnings abroad even when the potential returns are lower than those available domestically, effectively "locking out" these earnings.

Under U.S. Generally Accepted Accounting Principles, the expectation future U.S. tax payments associated with foreign earnings requires firms to record a deferred tax expense and the related deferred tax liability. However, Accounting Standards Codification 740 allows an exception to this rule, called the Indefinite Reversal Exception. If management has the intent and ability to indefinitely reinvest the earnings of a foreign subsidiary, the permanently reinvested earnings (PRE) designation is invoked, whereby the company avoids recognizing the deferred tax expense. This designation must be supported by specific plans for future financing and investment, or be accompanied by an assertion of intent to distribute the earnings in a tax-free liquidation.

2.2 Prior Literature

Theoretical models, such as those in Hartman (1985) and Scholes et al. (2014), show that repatriation decisions are chiefly driven by differences in marginal after-tax rates of return, in the foreign jurisdiction relative to the U.S. In these models, the repatriation tax itself is irrelevant, since the foreign earnings are already "trapped" and must eventually face the repatriation tax; it does not matter if the firm can defer this tax burden – the present value of taxes due is the same

whether paid immediately or in the future. Of course, these results might not be obtained in a richer model. For example, if the repatriation tax is not constant over time, then a firm will delay repatriations until periods with low tax rates, even at the cost of lower after-tax foreign returns (De Waegenaere and Sansing 2008). Tax-induced lockout effect is exacerbated by the accounting designation of foreign earnings as PRE and multinationals' desire to maintain higher book income by avoiding the deferred tax expense on foreign earnings. This arises because an actual repatriation would force the immediate recognition of the related domestic tax expense, which, in the case of PRE, by definition, had not yet been recognized. In fact, Graham et al. (2011) survey tax executives and find that these two parallel effects are equally important in driving firms' initial foreign location and subsequent repatriation and reinvestment decisions.

This study contributes to the literature on the role of the frictions created by the system of worldwide taxation on cross-border M&A. Until recently the majority of empirical studies examining cross-border acquisitions have not considered the effect of U.S. international tax rules (e.g., Doukas and Travlos 1988; Moeller and Schlingemann 2005; Black et al. 2007; Dos Santos et al. 2008; Ellis et al. 2011; Erel et al. 2012). More recently, researchers have begun to investigate the role of taxes in cross-border M&A. Using M&A as a proxy for foreign investment, Edwards et al. (2016) and Hanlon et al. (2015) document that U.S. firms with locked-out earnings or high levels of trapped cash make less profitable cash acquisitions of *foreign* target firms. Our study differs from these studies as it examines the impact of the U.S. tax system on the acquisition of specifically *U.S.* target firms.

Feld et al. (2016) examine the role of an acquirer's tax system type on outbound M&A. Focusing on country-level acquirer characteristics, they provide evidence that firms from territorial countries are less competitive in bidding on targets in low tax countries. Feld et al.

(2016) only include cross-border acquisitions in their sample and so are silent on the whether an acquisition is cross-border or domestic. In contrast to Feld et al. (2016), we examine how one *firm-specific* tax attribute, the level of locked-out earnings, impacts the likelihood that a U.S. firm (a high tax country resident) is the target of an *inbound* foreign acquisition. We observe that U.S. acquirers are less likely to acquire certain U.S. targets – those with higher levels of locked-out earnings. Our research setting is specific to the U.S. and so has the advantage that it holds constant the tax system and statutory tax rate faced by the target firms.

Huizinga and Voget (2009) find that countries with high international double taxation attract smaller numbers of parent firms, and the headquarters activities that come with them, following cross-border M&A. In contrast to our study, Huizinga and Voget (2009) take the firms involved in an M&A transaction, and their locations, as given and examine if the parent location is selected in a tax efficient manner. We examine the prior step in the M&A process, specifically how the M&A parties are paired. Alternatively stated, we examine a potential cause of the specific pairing of firms, the lockout effect created by the U.S. tax system. The findings of Huizinga and Voget (2009) imply that, given the pairings we document, the parent of the combined firm is more likely to choose to locate outside of the U.S. following the merger.

Finally, Bird (2017) finds that low-tax foreign bidders are more likely to acquire more profitable U.S. target firms relative to high-tax domestic bidders, and that increases in a target firm's tax shields lead to decreases in the probability of foreign acquisition. Where Bird (2017) examines the impact of target profitability and existing tax deductions, attributes that vary within both domestic only and multinational firms, on inbound foreign M&A activity, our study examines the impact of foreign subsidiary earnings that are locked-out by the U.S. worldwide system of taxing foreign subsidiary profits on inbound M&A activity.

3. Hypothesis Development

3.1. Worldwide Taxation and Inbound Mergers and Acquisitions

Given that U.S. tax and financial reporting systems lead U.S. firms to hold more earnings overseas, these firms can become attractive – that is, tax-favored – targets for foreign buyers. First, accumulated locked-out earnings might appeal to foreign acquirers because the takeover could help free the target's foreign subsidiaries' past earnings from the U.S. worldwide tax system. Following an acquisition, it is possible for a foreign acquirer to access the existing stock of unrepatriated foreign earnings in the foreign subsidiary, using what are known as "out-from-under" or "hopscotching" transactions. Out-from-under planning is highly fact-specific and different strategies are used depending on the attributes of the firms involved. Kleinbard (2014) presents an example of this type of transaction, wherein a subsidiary with assets that the firm wishes to "free" can lend previously trapped assets to the foreign parent and thus "hop" over the U.S. The parent is then able to use the assets as they wish (invest in other assets, repay debt, etc.) without being liable for U.S. taxation. Prior to 2010, a similar transaction was possible that used an exchange of assets of the U.S. firm's foreign subsidiary for shares in the new foreign parent. The transfer could be treated as a dividend from the foreign subsidiary to the foreign parent to the extent of existing earnings and profits. The dividend did not incur U.S. tax because it was from one foreign corporation (the subsidiary) to another (the new foreign parent) and did not involve a U.S. entity.[5]

The past locked-out earnings of the target could be held as cash or other financial assets; these assets are fungible and could readily be redeployed. The past locked-out earnings of the

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[5] In 2010 this strategy was shut down following the creation of section 304(b)(5)(B). Following the enactment of section 304(b)(5)(B), the earnings and profits of the foreign subsidiary are excluded from the calculation and instead the earnings and profits of the U.S. target are used, generally reducing the tax benefits of the transaction.

target could also be held in operating assets as prior research has documented evidence consistent with U.S. multinationals using trapped cash to make suboptimal foreign investments (Edwards et al. 2016; Hanlon et al. 2015). A foreign firm that acquires a U.S. target with locked-out earnings sub-optimally invested could liquidate those investments and redeploy the resources for a more useful purpose.

Accordingly, we propose the following hypothesis:

H1: The likelihood of an acquirer being foreign is increasing in a target's level of locked-out earnings.

Our hypothesis relates to the identity of the winning bidder. We acknowledge that there are other ways to investigate valuation differences in M&A – using information on prices or the identity of the winning bidder, for instance; however, using the valuation information embedded in price premiums causes several empirical difficulties. We do not know what process determines acquisition prices, which is key to understanding how valuations feed into the observed price. For example, if a first price auction is descriptive, the observed price tells us about that bidder's valuation directly, ignoring issues related to surplus sharing between the target and acquirer. However, if a second price auction is descriptive, the relevant valuation is that of the losing bidder. This problem could be minimized if we could observe the other bids for the target; however, in most cases even the identity of the other bidders is unknown, let alone their bids. Accordingly, we use the identity of the winning bidder to infer valuation differences in a way that is robust to alternative price structures and does not rely on observing losing bids. Differences in the country of residence for different bidders will reveal these valuation differences as long as the M&A market has some element of efficiency – the probability of a bidder winning must be increasing in its valuation. This should hold on the margin even if bidders suffer from overconfidence or a predilection towards empire building.

We note that several factors could mitigate or counteract our hypothesized effect. First, a U.S.-based acquirer with sufficient profitable overseas investment opportunities could access the trapped cash and suboptimal foreign investments of the target and redeploy those resources itself. Second, U.S. acquirers could be anticipating a favorable change in the taxation of foreign earnings, or could potentially use their own foreign tax credit carryforwards to shelter repatriations of acquired locked-out funds. Finally, during our sample period, U.S. acquirers could potentially return foreign earnings and cash via complex tax planning (Martin et al. 2015).

3.2. The acquirer tax system

As noted above, countries can tax the profits of foreign subsidiaries using worldwide or territorial tax systems. While most large developed economies use territorial tax systems, some still use worldwide systems (e.g., as of 2010, 7 of the 34 OECD countries use a worldwide system). Foreign bidders from territorial tax systems are able to free the acquired firm's foreign subsidiaries' locked-out earnings from the U.S. worldwide system and not face incremental parent country tax on those earnings. Foreign bidders under a worldwide system could also have a tax advantage compared to U.S. bidders if the statutory rate in the foreign jurisdiction is lower than in the U.S. This is because, even if the foreign acquirer is able to repatriate past and future foreign subsidiary earnings around the U.S., those earnings will face repatriation taxes under the new parent's worldwide regime. Alternatively stated, the tax advantages to acquiring a U.S. firm with locked-out earnings are likely greater for foreign acquirers from territorial countries, but the incentives to acquire a U.S. target with locked-out earnings could still exist for a foreign acquirer in a low tax rate worldwide country. Accordingly, we propose the following hypothesis:

H2: The association between the likelihood of an acquirer being foreign and a target's level of locked-out earnings is concentrated in acquiring firms located in territorial tax systems.

This second hypothesis follows directly from hypothesis 1 and has the added benefit of

improving identification of our main hypothesized effect. More specifically, in one of our tests of the second hypothesis we are able to exploit an exogenous change in the tax system faced by a subset of acquiring firms. Since we expect our hypothesized relation to exist primarily in settings where the foreign firms face a territorial system, the change from a worldwide to territorial system of a number of countries during our sample period provides better causal identification and substantial comfort that our hypothesized effect is driving differences in foreign versus domestic acquirers, as opposed to some other unobservable country specific effect.

4. Research Design

4.1. Sample

We test our hypotheses by examining acquisitions of publicly traded U.S. target firms from the Thomson SDC Platinum database. Focusing our analysis on target firms in one country has the advantage of ensuring that all the sample M&A activity take place under a similar regulatory and institutional environment. We begin with all majority transactions (where the acquirer ends up with > 50% of the target) that involved a publicly-traded U.S. target from 1995 to 2010 (the last year for which we hand collected data).[6] For a transaction to be included in the sample, the target company must have non-missing values of total assets (at), profits (ebitda), debt (dltt), and intangibles (intan) available in Compustat. We exclude all M&A transactions that are valued at less than one million dollars and where the target had less than ten million dollars in total assets. We also exclude acquisitions by private equity and non-taxable entities as the hypothesized tax motivated effect should not impact these acquirers. Using this base sample, we use a Python script to extract PRE disclosures from the most recent 10K filed by the target

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[6] Over 99% of sample transactions result in the acquirer obtaining 100% of the target. Toeholds are relatively infrequent and typically small. 3% of the deals in the sample have a toehold, with a median toehold of 4%. Given the sample selection procedure, our sample does not include what are typically referred to as inversions.

company prior to the deal and hand collect the firm's reported level of PRE. Appendix A provides a more complete discussion of the PRE data collection process. The above methodology yields a sample of 4,611 unique acquisitions.

4.2. Acquirer location and earnings lockout

We examine the association between the probability of a U.S. target firm being acquired by a foreign firm versus a domestic firm and earnings lockout using the following probit model:

$$Prob(ForeignAcq) = \beta_0 + \beta_1 LOCKOUT + \Sigma\beta_k Controls_k + \varepsilon \qquad (1)$$

where *ForeignAcq* is an indicator variable equal to one if the acquirer was a foreign firm and zero otherwise. The independent variable of interest, *LOCKOUT*, is our proxy for the target firm's locked-out earnings. Defining and thus identifying exactly what earnings are locked out is debatable – one could argue that all unremitted foreign earnings are locked-out but this would obviously be an upper bound estimate. Also, these data are not publicly available for all firms. As a result, we use *PRE* as our primary measure of *LOCKOUT*, and perform additional analyses with two alternative measures, *PRE Indicator* and *Repatriation Cost. PRE* is a measure of the reported permanently reinvested earnings of the firm calculated as the total dollar amount of PRE disclosed in the tax footnote scaled by total assets. *PRE* captures the cumulative amount of foreign earnings a target firm has declared it has or will indefinitely reinvest abroad and captures a subset of past foreign earnings. Graham et al. (2011) document that 75% of their surveyed firms classify all their unremitted foreign earnings as PRE. We note that these earnings could be retained overseas for both tax and non-tax (i.e., foreign growth opportunities) reasons.

Following hypothesis 1, we expect β_1 to be positive, consistent with locked-out earnings helping to explain which U.S. target firms are acquired by foreign, versus domestic, firms. Note that to be included in the sample for this test, the target firm must have been successfully taken

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over. In theory, we would expect a similar lockout effect to drive selection into the takeover sample – a firm that has high locked-out earnings could not only be more likely to be acquired by a foreign firm, but also be more likely to be targeted. We focus on the sample conditional on takeover in order to limit the hand collection of PRE data.

The clearest alternative hypothesis to hypothesis 1 would be a direct preference by foreign acquirers for U.S. targets with foreign activities; that is, a foreign acquirer could prefer locked-out earnings simply because the target, like the acquirer, also operates outside of the U.S. While it is possible that foreign acquirers target U.S. firms with foreign operations to expand into a foreign country, it is unlikely that this would be a foreign firm's first choice and it is unlikely that the choice to enter some foreign market is specifically related to the magnitude of PRE. A more direct path into a new foreign market could be achieved through greenfield investment or the acquisition of a firm based in the foreign country. That said, we control for the foreign activities of the U.S. targets. Because of the difficulty in measuring U.S. multinationals' foreign activity using publicly available data, we attempt to accomplish this in two ways (Donohoe, McGill, and Outslay 2012). First, we include both a control variable that is an indicator variable equal to one when the target firm has any foreign earnings and zero otherwise, and a control variable for the fraction of total earnings that are foreign. Second, in untabulated tests, we alternatively include a control variable for the total foreign sales of the target, from the Compustat segment data, relative to total assets of the target firm.

In addition to the control variables designed to capture the extent of foreign operations of the U.S. target firms, we include a control variable for net operating loss carryforwards relative to total assets, and an indicator variable for current period losses, since these reflect differences in future tax rates faced by the targets that could affect foreign and domestic takeovers in

different ways, given different home country tax rates and business strategies (Bird 2017). We also include the log of market capitalization to control for target firm size. We further include control variables for target profitability (earnings before interest, taxes, depreciation and amortization) scaled by total assets, intangible assets scaled by total assets, and leverage (debt over total assets). The inclusion of the first two of these variables controls for the fact that foreign and domestic acquirers could have differential access to income shifting strategies, which themselves are more valuable if the target firm has more profits to shift, and potentially easier to implement if the target has more intangible assets.

In addition to the benefit of a foreign acquirer unlocking past earnings, the new entity could also benefit from further tax savings in the future through increased income shifting, specifically through interest stripping and reorganization. First, with respect to interest stripping, the new foreign parent could lend to the U.S. subsidiary (the former U.S. based parent), thereby increasing interest deductions in the U.S. As a result, we control for target firm leverage. If a target has low current U.S. leverage, they could lever up post acquisition and strip future U.S. based earnings going forward. However, it is also possible that a foreign acquirer interested in earnings stripping could acquire a U.S. multinational with high U.S. debt outstanding, and after the acquisition lend to the target firm which then pays off the existing debt, resulting in interest stripping.[7] Further, interest stripping is accomplished through internal debt, which is not observable based on public disclosure. For these reasons it is very difficult to test for the interest stripping motivation separately. Second, on a go forward basis, the foreign acquirer could undergo a reorganization so that the future foreign earnings of the pre-existing U.S. foreign

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[7] We acknowledge that leverage (i.e., external debt) is not an ideal control as internal lending will be the primary method of interest stripping. Even if one had data on the change in debt of the U.S. multinational after the acquisition the just described strategy might show up as little post-acquisition change in leverage.

subsidiaries are no longer subject to U.S. tax as the new parent firm is not domiciled in the U.S. For example, following an acquisition the acquiring foreign parent can "freeze" the value of the target foreign subsidiaries by exchanging the existing common stock of the subsidiaries held by the U.S. corporation for preferred shares of the subsidiaries while issuing new common shares to a related foreign entity within the multinational. A number of the control variables can also be interpreted as proxies for the future taxable profits of the target firm overall, and of the foreign subsidiaries in particular. The control variables for "foreignness," profitability, and intangibility will also capture the tax-favored effect of future profits and positive coefficients on these variables would also be consistent with foreign acquirers being tax-favored.

4.3. Acquirer location, tax system, and earnings lockout

The main test of hypothesis 2 involves distinguishing the foreign acquirers by whether they are located in countries that use a worldwide or territorial system. If hypothesis 2 is descriptive, the increased propensity to acquire firms with locked-out earnings by foreign over domestic firms should be greater when the foreign acquirers face territorial (versus worldwide) systems. To test hypothesis 2, we rerun the analysis from subsection 4.2 on four separate subsamples. The first includes all domestic acquisitions and only those foreign acquisitions from territorial countries. The second includes all domestic acquisitions and only those foreign acquisitions from worldwide countries. The third includes acquisitions from territorial countries coded as one and both U.S. domestic acquisitions and foreign acquisitions from worldwide countries in the zero group. Finally, the fourth includes only acquisitions by foreign firms and codes the dependant variable as one for territorial country acquirers, and zero for worldwide. Consistent with hypothesis 2, the association between the likelihood of an acquirer being foreign and a target's locked-out earnings is concentrated in acquirers from territorial countries, we

expect positive marginal effects for earnings lockout for the first, third, and fourth specification. A marginal effect for earnings lockout not statistically different from zero is expected in the second specification as all acquirers are from worldwide tax systems – thus these foreign acquirers are not expected to be tax-favored over U.S. domestic acquirers except to the extent that the foreign corporate statutory tax rate is much lower than the U.S. rate.

A remaining empirical concern with these tests is that foreign acquirers could have a particular preference for U.S. target firms because of their foreign operations regardless of their locked-out earnings, or for firms with locked-out earnings for correlated non-tax reasons, or because other features of their tax codes could facilitate accessing the foreign earnings of the target firm at a lower tax cost. To account for these possibilities, in the final set of tests, we include acquirer country fixed effects in the models. For many of the acquirer countries in the sample, the fixed effect would be perfectly predictive of territorial or worldwide tax systems, as many countries did not change their tax systems over the sample period. As a result, in fixed effects models we only include acquisitions by acquirers located in countries that satisfy two criteria. First, during the sample period the country must have switched tax systems. Second, at least one firm from the country must have made an acquisition during the sample period before the reform and at least one firm from that country must have made an acquisition following the reform.

The resulting sample consists primarily of acquiring firms located in the U.K. and Japan, which both switched from worldwide to territorial systems in 2008. A positive marginal effect of the lockout variable would be consistent with the preference of foreign acquirers from a specific country for targets with locked-out earnings increasing after a switch from a worldwide to a territorial system. This tax system switching empirical strategy reduces concerns that the results

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observed in the earlier tests are being driven by firms' desire to acquire the foreign operations of the U.S. target firms or by fixed country-specific variables and allows better causal identification.

5. Empirical Findings

5.1. Descriptive Statistics

The sample includes 4,611 unique acquisitions, of which 791 have positive values of PRE.[8] There are 3,812 deals with domestic acquirers (15% have PRE with a median value of $37 million, or 4.7% of target firm assets) and 799 deals with foreign acquirers (24% have PRE with median value of $38 million, or 5.3% of target assets). Using the alternative measure of earnings lockout based on a firm's potential repatriation costs, in lieu of the hand collected PRE data, yields a sample of 5,243 unique acquisitions.

Table 1 panel A details the sample composition. The number of acquisitions per year is relatively constant, with a small peak around 2000 and a valley during the financial crisis of the late 2000s. Table 1 panel B provides a breakdown of the acquirers by country. No single country accounts for more than 20 percent of the acquisitions. About half the foreign acquisitions are from the major western economies of the U.K., Canada, France, and Germany.

In untabulated analysis we examine a number of additional acquisition characteristics. For transactions where the acquirer's industry is known, a similar portion of domestic and cross-border transactions involve a target and acquirer within the same industry, providing comfort that our findings are not due to cross border differences in the desire to diversify. We also observe that targets of both foreign and domestic acquirers have similar asset tangibility. Targets of both

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[8] Most acquirers appear in the sample only once as the median (mean) acquirer makes 1 (1.4) acquisition. In untabulated tests we repeat our primary analysis including only the first observation from each acquirer, inferences are unchanged.

groups also have similar cash holdings. These data provide further comfort that the targets of domestic and foreign acquirers are similar in non-tax attributes. [9]

Table 2 panel A provides summary statistics for the *LOCKOUT* measures and the control variables. Appendix B provides detailed variable definitions for the variables. All continuous variables are winsorized at the 1% and 99% levels to reduce the influence of outliers. The descriptive statistics indicate that acquirers are foreign for 17% of the sample deals and 16% of target firms report positive values of PRE. Approximately a third of target firms have foreign earnings and firms on average report 10% of their earnings as coming from foreign sources.

Table 2 panel B presents the sample size and means of the variables, split according to the pairing of acquirer (foreign or domestic) and target type (domestic operations only or multinational). Column (1) restricts to observations with purely domestic targets and domestic acquirers, column (2) purely domestic targets with foreign acquirers, column (3) multinational targets with domestic acquirers and column (4) multinational targets with foreign acquirers. Foreign firms acquire 477 purely domestic firms, 14 percent of the 3,529 targets that have only U.S. domestic operations. Foreigners acquire 399 multinationals, 23 percent of the 1,714 targets that are U.S. multinationals: a significant and substantially larger percentage of the multinational acquisitions than the domestic only acquisitions, consistent with a preference of foreign firms for U.S. targets with foreign operations. [10]

The partitions also illustrate the differences in the *LOCKOUT* proxies across acquirer

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[9] For both cross-border and domestic acquisitions both parties involved in the transaction are within the same 1-digit NAICS industry in 74 percent of transactions. Using 2-digit NAICS, 62 (63) percent of domestic (cross-border) transactions are intra-industry. Mean asset tangibility, defined as net property, plant, and equipment over total assets, is 22 (23) percent for targets of domestic (foreign) acquirers. Cash and cash equivalents account for 17 (18) percent of assets in the targets of domestic (foreign) acquirers.
[10] This analysis is for our broadest sample. The two smaller samples have near identical proportions of acquisitions of purely domestic and multinational firms by domestic (86% and 14%, respectively) and foreign acquirers (76% and 24%, respectively).

type for domestic and multinational targets. For example, the mean *PRE* of purely domestic targets of domestic acquirers is 0.000 compared to 0.003 for purely domestic targets of foreign acquirers.[11] The mean *PRE* of multinational targets of domestic acquirers is 0.029 compared to 0.032 for multinational targets of foreign acquirers. The control variables are similar across these cuts, particularly when holding target type constant (i.e., between column (1) and (2); and column (3) and (4)).

Table 2 panel C provides the correlations of our test and control variables. One notable observation is the strong positive correlation between the proxies for earnings lockout. Both of the PRE measures and the tax repatriation cost variable are highly correlated, ranging from 0.236 to 0.699, providing some comfort that they are capturing the same underlying construct of earnings lockout. The correlations among the measures of earnings lockout and the indicator for foreign acquirers are significantly positive and provide suggestive evidence for our first hypothesis. The measures of the targets' foreign activities are also positively correlated with the foreign acquirer indicator. This highlights the importance of controlling for foreign activities to disentangle the effect of locked-out earnings from foreign activities of the target firm in general.

5.2. Acquirer location and earnings lockout

Columns (1) and (2) of Table 3 presents the results of estimating equation (1) where *PRE* is used as the measure of locked-out earnings. The estimated marginal effect of this measure is 0.525 (standard error of 0.137) and is statistically significant at the 1% level. This effect corresponds to an increase in the probability that the acquirer will be foreign of 0.525 percentage points for a one percentage point increase in the *PRE* measure, or a 2.1 percentage point increase

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[11] Although these firms do not report current foreign activity, a small portion of the sample report non-zero values for *PRE*. This *PRE* likely represents past foreign activity that has been discontinued. We exploit this group of firms in a supplemental analysis reported in section 6.

for a one standard deviation increase in the measure. This effect size can be compared to the average foreign acquirer probability in the sample of 17% and represents a 12% (2.1%/17%) relative increase in the likelihood that the acquirer is foreign.

The estimated marginal effects for the control variables in column (1), when significant, are generally consistent with expectations. Profitability loads positively, consistent with foreign acquirers valuing pre-tax earnings due to their potential tax savings on future profits. The intangibility ratio loads positively, consistent with intangible assets making income shifting less costly and being more tax advantageous to foreign acquirers. The loss indicator loads positively, consistent with Bird (2017) who documents a similar preference by foreign acquirers for loss firms and attributes the result to a non-tax preference. We also note that the estimated marginal effect of leverage is not significant at traditional levels. This non-finding can be interpreted as consistent with either the test not being particularly diagnostic, or potential future income stripping not being a driver of foreign takeovers. It could also be that firms are already stripping earnings out of the U.S. through debt or that thin capitalization rules are viewed as binding.

In column (2) of Table 3, we add the foreignness controls, an indicator variable equal to one for any foreign earnings and the fraction of earnings that are foreign. The marginal effect of *PRE* declines to 0.328 (standard error of 0.157) but remains statistically significant. This decline, combined with the positive marginal effect estimated for these variables, suggests that foreign acquirers prefer targets with more foreign activities, and that this preference explains about half of the effect of *PRE* in column (1). In untabulated tests, we use an alternative foreignness control variable – the ratio of foreign sales to total assets of the target firm. This change also yields a positive and significant marginal effect of *PRE*. The positive and significant effects of some of the foreignness, profitability and intangibility control variables are also consistent with foreign

acquirers being tax-favored because these variables also capture the tax benefits on future profits.

To triangulate our results, we repeat our analysis with two alternative measures of *LOCKOUT*. The first measure, *PRE Indicator*, is an indicator variable set equal to one for any positive value of PRE or a general disclosure of the existence of PRE without a specific dollar amount.[12] The second measure, *Repatriation Cost*, is based on Foley et al. (2007) and calculated as pre-tax foreign income multiplied by the U.S. corporate statutory tax rate less any foreign taxes paid, scaled by total assets.[13] Columns (3) and (4) report the results from the same two specifications with *PRE Indicator* as the lockout measure, and columns (5) and (6) report the results using *Repatriation Cost*. All four specifications yield similar results and inferences.

We also estimate the cumulative magnitude of the effect in dollar terms over our sample period. The cumulative effect is economically significant. Based on our empirical findings, an additional $186 billion in U.S. assets ended up in foreign hands as the result of this effect. For simplicity of interpretation, this effect is estimated using the marginal effect on the PRE indicator after controlling for the foreignness of the targets (i.e., the marginal effect on the PRE indicator from column (4)).[14]

5.3. Acquirer location, tax system, and earnings lockout

We investigate hypothesis 2 by splitting the sample depending on whether the acquirer is resident in a country that employs a territorial or a worldwide system using various different

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[12] This measure addresses the concern identified by Ayers et al. (2015) that 10 to 17 percent of S&P 500 firms do not provide required PRE disclosures. They identify "non-disclosers" using the effective tax rate reconciliation in the footnotes and note that over 85% of the "non-disclosers" provide an acknowledgement of the existence of PRE.
[13] The prior three year average is used to compute these variables, if available; if not, the prior two years; if not, the prior year. If the prior year is missing, a zero is imputed. This variable is multiplied by 100 for ease of interpretation. In prior studies, Harford et al. (2016) and Hanlon et al. (2015) also use this measure to investigate trapped cash. The *Repatriation Cost* measure has several limitations. It is based on the assumptions that reported foreign earnings in the financial statements equate to foreign taxable income, and although intended as a cumulative measure, the incremental U.S. tax due upon repatriation is calculated based on a recent sum of annual foreign income.
[14] The $186 billion is calculated as follows: the percentage of firms with PRE (16.3%) x the sample size (4,611) x the marginal effect of PRE (3.9%) x mean total assets conditional on having PRE ($6.353 billion, untabulated).

subsamples. In column (1), observations with U.S. domestic acquirers and only foreign acquirers from territorial countries are included. Column (2) presents a falsification test where observations with domestic acquirers are compared to acquisitions by foreign acquirers from worldwide countries. As articulated in hypothesis 2, the tax advantage to foreign acquirers will primarily exist for foreign acquirers that are located in countries that utilize a territorial system. The tax advantage to foreign acquirers facing worldwide systems will be lower as any freed past profits, as well as future profits, will face eventual home country taxation. As a result, we do not expect to observe a significant marginal effect of *LOCKOUT* in column (2).

Consistent with hypothesis 2, the effect of *PRE* is positive and statistically significant at the 1% level for the foreign territorial vs. domestic comparison and not significantly different from zero for the foreign worldwide vs. domestic comparison. These findings imply that the results from the foreign vs. domestic models used to test hypothesis 1 are driven primarily by acquirers resident in territorial tax system countries and is consistent with our hypothesized tax relation. This finding is also inconsistent with foreign acquirers simply preferring more profitable U.S. multinational targets as PRE should then also load significantly for worldwide acquirers. Note that the control variables load similarly across both subsamples, implying that both types of foreign acquirers have similar non-tax preferences over targets.

Domestic acquisitions are fundamentally similar to acquisitions originating from worldwide countries as both the U.S. and these foreign acquirers share the same type of (worldwide) tax systems. We exploit this similarity and implement an alternative approach to testing the territorial versus worldwide system distinction by including domestic acquisitions with the foreign worldwide acquirers in the worldwide system category. Column (3) presents the results from this specification where the estimated effect of *PRE* (marginal effect of 0.300,

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standard error of 0.126) suggests a clear, statistically significant difference between acquirers from worldwide and territorial systems. The observed effect corresponds to an increase in the probability of a territorial, relative to a worldwide, acquirer of 1.2 percentage points for a one standard deviation increase in *PRE*. This effect size can be compared with the average likelihood of a territorial acquirer of 11%.

In column (4) of Table 4, we remove domestic acquisitions of U.S. firms from the sample and redefine the dependent variable to be one (zero) if the foreign acquirer comes from a territorial (worldwide) country. We remove the foreignness control variables as the sample is restricted to acquisitions by foreign acquirers. If the hypothesized tax effect is driving the above results, we expect a positive sorting of territorial acquirers towards targets with high levels of PRE. We observe a positive marginal effect of 0.536 that is statistically significant at the 10% level. Overall, the results in Table 4 provide evidence consistent with hypothesis 2. Acquirers resident in territorial countries exhibit a stronger preference for U.S. target firms with locked-out earnings than acquirers from worldwide countries (including domestic acquirers).

In order to improve the identification of our tests, in Table 5 we examine acquisitions from countries that switched their tax system from a worldwide to territorial system (the U.K., Japan, and New Zealand as of 2009; Italy and Finland as of 2004). Given that relatively few countries have changed tax systems, these tests are necessarily performed on a reduced sample. The smaller sample increases estimated standard errors and so reduces the power of the tests. We view this as an acceptable trade-off, given the benefits in identification. This reduced sample includes 214 acquisitions, 12% of which occur following countries' tax system changes.[15]

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[15] Note that the test in Table 5 does not exploit differences in the probability of foreign acquisition pre- and post-reform. Rather, it is based on the change in the sensitivity of this probability to locked-out earnings. As a baseline, in untabulated univariate analysis we observe that 19% of the target firms of these acquirers had some PRE while

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Column (1) presents the results from estimating the same model as in Table 4 for acquirers in the switching countries. The dependent variable is coded 1 (0) for acquisitions occurring under the territorial (worldwide) system in the foreign acquirers country. The results are consistent with hypothesis 2, the loading on PRE is positive and significant. As above, this implies that territorial country acquirers are more likely to be the acquirer of U.S. target firms with high levels of locked-out earnings.

In column (2) of Table 5, we add country fixed effects for the system switching countries. The loading on *PRE* is 1.214 and significant at the 1% level. The lower marginal effect of *PRE* is suggestive of an unobserved time constant variable that explains both a country's having a territorial system, and having acquirers that prefer targets with locked-out earnings. However, this variable does not completely explain the previous results. When a country switches from a worldwide to a territorial system, its acquirers increase their preference for targets with *PRE*, consistent with tax system differences, not just a preference by foreign firms for acquiring the foreign or U.S. domestic assets of U.S. multinationals, being the underlying cause for our findings. Next, we perform two placebo tests to ensure our results are not driven by a time trend where foreign acquirers simply have an increasing preference for firms with locked-out earnings. In column (3), the sample includes all observations from non-switching worldwide system countries and the dependent variable is set equal to one assuming a pseudo switch in 2009 (mirroring the switches in the U.K. and Japan, which comprise the bulk of the switches in columns (1) and (2)). This falsification test fails to yield a significant marginal effect on PRE. In column (4), the sample includes observations from the two non-switching countries closest in size to the largest switching countries, the U.K. (Canada and France) and Japan (Switzerland and

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under worldwide systems. This percentage significantly increased, more than doubling, to 44% of target firms when the acquirers were under territorial systems.

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Bermuda). The dependent variable is again set equal to one assuming a pseudo switch in 2009.

This falsification test also fails to yield a significant marginal effect of PRE. Taken together, the

results in Table 5 provide strong evidence of a causal relationship between the tax benefits of

locked-out earnings and the likelihood of foreign acquisition from a country with a territorial tax

system. These tax system switching tests also help rule out the alternative explanation that

foreign acquirers simply have a preference for more profitable U.S. multinationals, as proxied by

PRE, as there is no reason to expect that preference to be correlated with the tax system switches

we examine, other than through the association with earnings lockout.

6. Additional Analyses

6.1. Robustness tests

      The main analysis does not include industry or time fixed effects as we do not suspect

time series or cross sectional correlation to be an issue as we study the sensitivity of acquisitions

to locked-out earnings, rather than just the identity of the acquirer. While the latter could be

subject to secular time trends (for example, based on exchange rates or cross country differences

in macroeconomic conditions), it is not clear why these would impact the sensitivity of foreign

acquisitions to our proxies of locked-out earnings. However, in Table 6 Panel A we repeat our

analysis including both industry and time fixed effects. Column (1) presents results including the

basic set of controls and column (2) adds the foreignness controls. Row (1) reproduces the

primary results from Table 3 to provide a baseline. Row (2) presents results after including year

fixed effects. Row (3) presents results after including industry fixed effects. Row (4) presents

results after including both year and industry fixed effects simultaneously. Results under all

specifications are consistent with the baseline model from the main tests.

Our sample includes some relatively large target firms, possibly limiting the number of feasible acquirers. Further, the mean size of the multinational targets is larger than the domestic only targets, although the size of multinationals acquired by foreigners is similar to those with U.S. acquirers (see Table 2 Panel B). To address this concern, we repeat our analysis including a control for acquirer size. Note, this test reduces the sample size by 27% to 3,192 observations (as many acquirers are private firms). To provide further comfort that our results are not driven by acquisitions of large firms, we repeat our analysis independently dropping the largest 10% of targets and acquirers; for symmetry, we also drop the smallest 10% of targets and acquirers. Row (1) of panel B reproduces the results from Table 3 to provide a baseline, row (2) includes a control variable for acquirer size, row (3) drops the smallest 10% of targets from the sample, row (4) drops the largest 10% of targets, row (5) drops the smallest 10% of acquirers, and row (6) drops the largest 10% of acquirers. Results are all consistent with the baseline tests.

Some prior research includes acquirer country tax rates, or the tax rate differential between the acquirer and target, as controls or test variables. In the primary analysis we exclude tax rate variables for both practical and theoretical reasons. On a practical level, we are unable to observe the tax rates the acquirers are facing, although this could potentially be proxied for using the home country's top statutory rate. On a theoretical level, it is not clear why the home country tax rate is an issue in our setting. For territorial acquirers, the parent country tax rate is not relevant, as the foreign earnings will not face parent level tax (i.e., the rate is zero). For the worldwide acquirers, the vast majority of observations come from Japan and the U.K. (91% by value, 68% by count), which had statutory rates similar to the U.S. during the sample period. The only worldwide country in the sample with a substantially lower tax rate than the U.S. is Ireland, which accounts for only 6 acquisitions. We perform several additional analyses to alleviate the

concern that the acquirers' tax rate is driving our findings. Table 6 Panel C reports the results

from these tests. Row (1) reproduces the results from Table 3 to provide a baseline, row (2)

drops the observations from the low tax worldwide system (i.e., Irish acquirers) from the sample,

and row (3) drops all acquisitions from tax havens from the sample. Results from both of these

analyses are consistent with the baseline results from the main tests.

While in our primary analysis we include all U.S. acquirers, we perform several

untabulated tests to ensure that our findings do not rely on this choice. First, we separately rerun

our tests using observations with foreign acquisitions and either (i) purely domestic U.S.

acquirers, or (ii) U.S. multinational acquirers, as the control group. Inferences remain unchanged.

Second, we perform a falsification test and repeat the analysis including only observations with

U.S. acquirers and coding the dependent variable as 1 (0) if the acquirer is a multinational

(purely domestic firm) and fail to observe a significant marginal effect of PRE. This finding is

consistent with no discernable preference for locked-out earnings by U.S. multinational

acquirers, lending further support that our hypothesized relation is driving the tabulated observed

results.

6.2. Past locked-out earnings and future earnings

As noted above, foreign acquirers could, with appropriate tax planning, avoid U.S. taxes

on future foreign earnings, thereby creating an advantage over domestic acquirers.[16] Although it

is difficult to disentangle the potential motivations, we perform some additional analysis on this

issue. First, we examine a subsample of targets that do not report foreign income or tax expense

in the current year. Although these firms do not report current foreign activity, a small portion

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[16] We also acknowledge that interest stripping could be a motivation for foreign acquirers. We note that the lack of significance of leverage is consistent with interest stripping not being a major determinant of our hypothesized behavior, although target external leverage is not an ideal proxy for future potential internal borrowing.

report non-zero values for *PRE*. This PRE should represent past locked-out earnings, without being correlated with future foreign earnings given the current absence of activity. Using this subsample, we observe (untabulated) a positive and significant marginal effect of PRE, consistent with past locked-out earnings impacting the likelihood that an acquirer is foreign. We caution from drawing strong inferences from this test as it is based on a sample of 3,529 firms, of which 68 report non-zero *PRE*.

Finally, we partition our sample on two measures of growth in foreign operations, as the tax benefits to a foreign acquisition of a U.S. firm with high foreign growth are likely partially attributable to expected future foreign earnings. Separately, we split our sample at the median of foreign earnings growth and foreign sales growth. Untabulated results from both partitions are generally stronger in the high growth group, consistent with at least some benefit coming from potential future foreign earnings.

6.3. Locked-out earnings vs. trapped cash

As noted, the relation between locked-out earnings and the domicile of acquirers should exist for all forms of locked-out earnings, regardless of the form of the underlying assets. The locked-out earnings could be held as financial assets (i.e., trapped cash) or reinvested in operating (non-financial) assets either purchased directly or through a suboptimal foreign cash acquisition as documented by Edwards et al. (2016) and Hanlon et al. (2015). The financial assets could be current or long term and are not all, strictly speaking, "cash." While our primary analysis does not examine a preference by foreign acquirers for trapped cash specifically, our findings are consistent with this trapped cash story. Unfortunately, an examination of trapped cash directly is difficult. Foreign cash holdings are not a required disclosure and, until the SEC began requesting this information in recent years, few firms disclosed this information. Even if

the amount of foreign cash was known, disentangling the amount that is tax induced would be difficult. As an alternative, prior studies suggest that the *Repatriation Cost* measure can also be interpreted as a proxy for trapped cash.[17] Hanlon et al. (2015) estimate tax-induced foreign cash (their variable *Predicted Foreign Cash-REPAT*) using the estimated coefficient on the Foley et al. (2007) repatriation tax cost variable from a regression of foreign cash on the repatriation tax cost measure and controls. Using the Hanlon et al. (2015) measure yields a marginal effect of trapped cash on the likelihood that the acquirer is foreign of 0.0004 (standard error of 0.0002) and is significant at the 1% level. This corresponds to a 1.3 percentage point higher likelihood of the acquirer being foreign for a one standard deviation increase in the trapped cash measure.[18]

In a further attempt to get at the issue of cash versus a broader definition of lockout, in Table 7 we examine if our findings differ among low-(global) cash and high-(global) cash firms. We use global cash holdings as few of our sample firms disclose foreign cash holdings. We caution readers that inferences may change if the test included foreign, instead of global, cash. In order to capture the various ways that firms hold and report their cash, we use two different definitions of cash. First, in columns (1) and (2), we define high cash holdings as an indicator variable set equal to 1 if cash plus short-term investments (scaled by total assets) is above the median for firms with PRE, zero otherwise. In columns (3) and (4), we define high cash holdings as an indicator variable set equal to 1 if cash, plus short- and long-term investments (scaled by total assets) is above the median for firms with PRE, zero otherwise. We interact the indicator variable with our proxy for earnings lockout, *PRE*, with and without the foreignness controls in

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[17] We also acknowledge that concurrent research uses PRE as a proxy for foreign cash (not trapped cash/excess foreign cash *per se*). For example, Harford et al. (2016) document a correlation of 0.81 between PRE and foreign cash in a sample of 657 firm-years with disclosure of foreign cash holdings.

[18] The result is obtained by multiplying the coefficient on our *Repatriation Cost* measure by the estimated coefficient of 45.29 from column 1 of Table B1 in Hanlon et al. (2015).

the model (even and odd columns respectively). In all specifications, *PRE* continues to have a positive and significant effect on the likelihood that the acquirer is foreign. The interaction term is not significant in any of the specifications, consistent with worldwide cash holdings not having an incremental effect on the likelihood of an acquirer being foreign. We also note that the combined effect of *PRE* and the *PRE*HighCash* interaction term is significantly positive in all specifications, consistent with an increased likelihood of an acquirer being foreign among high cash firms. Taken together, our results are consistent with a similar preference by foreign acquirers for locked-out earnings among both high cash and low cash firms.

7. Conclusion

This study documents a significant indirect cost of having both tax and financial reporting systems that encourage multinational firms to retain earnings abroad, locking out those earnings from domestic use or payout to shareholders. Our findings, based on variation in earnings lockout across U.S. target firms, suggest that U.S. based potential acquirers for U.S. targets are losing out to foreign acquirers who are tax-favored. This result is confirmed in cross-sectional tests. We exploit the fact that some foreign acquirers are resident in countries with a territorial system and others with a worldwide system as an additional source of identification and document that the increased propensity of an acquirer to be foreign is concentrated in territorial systems. We also examine country specific changes in worldwide versus territorial tax systems and document that the relative preference of foreign acquirers for locked-out earnings holds even using a within-country specification. The intuition for the tax system switching tests follows directly from the preference for locked-out earnings and has the added benefit of improving identification of our main hypothesized effect. An additional benefit of this switching test is that it is unlikely that switching tax systems increased these firms' incentives to acquire

U.S. firms with higher levels of tax lockout for other than tax reasons, such as a general preference for U.S. targets with greater foreign activity or higher profitability.

While not the focus of this study, the incentives to undergo an inversion parallel the tax preferences for foreign firms to acquire U.S. targets. Our study is potentially informative in this context. Given the political scrutiny around inversions, commentators have noted the appeal of a foreign takeover as an alternative (Goldfarb 2014). Further, following the U.S. government's 2014 attempt to shut down inversions through regulatory changes, several companies that had already inverted have made follow-on acquisitions of U.S. targets (Mattioli 2014) and some have speculated that this type of activity will increase in the future (Hoffman and Mckinnon 2015).

The findings of this study should also be informative in the context of a discussion of the relative merits of territorial versus worldwide systems of taxation. This issue has been publicly debated in several other jurisdictions and some countries, most notably the U.K. and Japan, have abolished their worldwide tax systems and have adopted territorial systems. Our findings should be informative in the context of the current debate over the taxation of the foreign profits of U.S. multinationals in that U.S. firms are tax-disfavored acquirers of U.S. target firms with locked-out earnings. The findings of this study are also informative in the current debate over corporate inversions. If additional tax law changes are targeted specifically at inversions, U.S. firms will continue to be attractive targets to foreign acquirers, especially those from territorial systems. A broader overhaul of the U.S. corporate tax system, such as a territorial system with lower statutory tax rates, would be needed to remove the tax-favored status of foreign acquirers.

Appendix A – Data Collection Methodology

PRE data were collected from financial statements using the following methodology:

Step 1 We identified all mergers and acquisitions of U.S. targets during the period from 1995 to 2010 in the SDC database with Compustat data and a 10K available through EDGAR.[19]

Step 2 A computerized search of all the 10Ks of acquired firms was performed to determine if the acquired firm had PRE.

The following terms (presented alphabetically) were used in a python script to identify PRE balances reported in the 10K. The search was performed as to allow for different types of whitespace or hyphenation in the terms:

> accumulated earnings of foreign subsid
> earnings indefinite
> estimate the amount of additional income tax
> estimate the amount of additional tax
> foreign subsidiaries have accumulated
> indefinitely invest
> indefinitely reinvest
> indefinitely reinvested
> permanently reinvested
> reinvest indefinite
> reinvested for an indefinite period
> reinvested indefinitely
> reinvested permanently
> repatriate
> retained indefinitely
> undistributed earnings
> undistributed foreign earnings
> unremitted earnings
> unremitted foreign earnings

Step 3 If none of these terms appeared in the 10K, PRE was set equal to zero. If any of these terms appeared, the surrounding text was extracted and the PRE balance was hand collected.

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[19] Matching done by CIK

Appendix B – Variable Definitions

Foreign Acquirer Indicator	An indicator variable set equal to one if the parent of the acquirer is not a U.S. resident; equal to zero otherwise.
Territorial Acquirer Indicator	An indicator variable set equal to one if the parent of the acquirer is located in a country with a territorial tax system; equal to zero otherwise.
PRE	Stock of permanently reinvested earnings collected from tax footnote, scaled by total assets (AT_t).
PRE Indicator	An indicator variable set equal to one if any positive value of permanently reinvested earnings is disclosed in the tax footnote or the firm provides a general disclosure of the existence of PRE without a specific dollar amount; equal to zero otherwise.
Repatriation Cost	Pre-tax foreign income ($PIFO_t$) multiplied by the U.S. statutory corporate tax rate (35%) less any foreign taxes ($TXFO_t$), scaled by total assets (AT_t). The three year average is used to compute these variables if it is available; if not, the two year measure; then the one year measure; if all of these are missing, a zero is imputed to represent the lack of any repatriation cost. This variable is multiplied by 100 for ease of interpretation.
Foreign Earnings Fraction	Pre-tax foreign earnings ($PIFO_t$) divided by total pre-tax earnings (PI_t). Values are restricted to a minimum (maximum) of zero (one).
Any Foreign Earnings Indicator	An indicator variable set equal to one if foreign earnings ($PIFO_t$) are nonzero or foreign taxes ($TXFO_t$) are nonzero; equal to zero otherwise.
NOL Carryforwards	Tax loss carryforwards ($TLCF_t$), scaled by total assets (AT_t).
Loss Indicator	An indicator variable set equal to one if earnings before interest, taxes, depreciation and amortization ($EBITDA_t$) is negative; equal to zero otherwise.
Profitability	Earnings before interest, taxes, depreciation and amortization ($EBITDA_t$), scaled by total assets (AT_t)
Log Total Assets	Logarithm of total assets (AT_t).
Intangibles	Intangible assets ($INTAN_t$), scaled by total assets (AT_t).
Leverage	Total long term debt ($DLTT_t$), scaled by total assets (AT_t).
High Cash	An indicator variable set equal to one if cash plus short-term (and long-term, in an alternative specification) investments (scaled by total assets) is above the median for firms with PRE, zero otherwise.

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Table 1: Sample Composition
Panel A: The number of acquisitions, and type of acquirer, by year

Year	Total Acquisitions	Portion of Sample in Year	Domestic Acquirer	Foreign Acquirer	Percentage Foreign
1995	371	7%	332	39	11%
1996	371	7%	334	37	10%
1997	472	9%	414	58	12%
1998	517	10%	441	76	15%
1999	542	10%	433	109	20%
2000	488	9%	386	102	21%
2001	389	7%	323	66	17%
2002	265	5%	228	37	14%
2003	283	5%	253	30	11%
2004	239	5%	207	32	13%
2005	245	5%	198	47	19%
2006	239	5%	188	51	21%
2007	259	5%	188	71	27%
2008	181	3%	134	47	26%
2009	182	3%	152	30	16%
2010	200	4%	156	44	22%
Total	5,243		4,367	876	17%

Table 1 continued
Panel B: The number of foreign acquisitions by acquirer country

Country	Number of Acquisitions	Portion of Foreign Acquisitions	Tax System
United Kingdom	176	20%	WW/T 2009
Canada	153	17%	T
France	74	8%	T
Germany	68	8%	T
Netherlands	53	6%	T
Switzerland	41	5%	T
Japan	39	4%	WW/T 2009
Bermuda	33	4%	T
Sweden	27	3%	T
Australia	21	2%	T
Italy	20	2%	WW/T 2004
Israel	19	2%	WW
Spain	15	2%	T
India	13	1%	WW
Ireland-Rep	11	1%	WW
Belgium	10	1%	T
Denmark	10	1%	T
Finland	9	1%	WW/T 2004
Bahrain	8	1%	T
Russian Fed	8	1%	WW
Singapore	8	1%	T
Mexico	7	1%	WW
Hong Kong	6	1%	T
Norway	6	1%	T
Various[#]	41	5%	Various[#]
Total	876	100%	

This table presents details about the composition of the main sample. Panel A provides the number of acquisitions, and type of acquirer, by year. Panel B provides the number of foreign acquisitions by acquirer country. In column 3 of Panel B, WW denotes a worldwide tax system, T denotes a territorial tax system, and WW/T denotes that a country switched tax systems during our sample period.
[#]21 countries with less than 5 acquisitions each have been combined for brevity.

Table 2: Sample Characteristics
Panel A: Descriptive statistics

Variable	N	Mean	SD	Min	Max
Foreign Acquirer Indicator	5243	0.167	0.373	0.000	1.000
PRE	4383	0.010	0.037	0.000	0.252
PRE Indicator	4611	0.163	0.369	0.000	1.000
Repatriation Cost	5243	0.119	0.684	0.000	8.508
Foreign Earnings Fraction	5243	0.100	0.262	0.000	1.000
Any Foreign Earnings Indicator	5243	0.327	0.469	0.000	1.000
NOL Carryforwards	5243	0.216	0.709	0.000	4.468
Loss Indicator	5243	0.207	0.405	0.000	1.000
Profitability	5243	0.039	0.193	-0.864	0.369
Log Market Cap	5243	5.193	2.049	-3.866	9.711
Intangibles	5243	0.102	0.165	0.000	0.702
Leverage	5243	0.168	0.216	0.000	0.997

Panel B: Sample sizes and variable means by acquirer-target pairing

Variable	(1)	(2)	(3)	(4)
N	3,052	477	1,315	399
Split of Purely Domestic Targets	86%	14%		
Split of Multinational Targets			77%	23%
Foreign Acquirer Indicator	0.000	1.000	0.000	1.000
PRE	0.000	0.003	0.029	0.032
PRE Indicator	0.016	0.043	0.436	0.468
Repatriation Cost	0.000	0.000	0.340	0.430
Foreign Earnings Fraction	0.000	0.000	0.309	0.290
Any Foreign Earnings Indicator	0.000	0.000	1.000	1.000
NOL Carryforwards	0.211	0.271	0.218	0.178
Loss Indicator	0.212	0.277	0.177	0.180
Profitability	0.021	0.012	0.076	0.083
Log Market Value	4.823	5.139	5.844	5.946
Intangibles	0.083	0.107	0.131	0.138
Leverage	0.169	0.158	0.166	0.186

Table 2 continued
Panel C: Correlation matrix (Pearson)

Variable		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Foreign Acquirer Indicator	(1)	1											
PRE	(2)	0.073	1										
PRE Indicator	(3)	0.095	0.699	1									
Repatriation Cost	(4)	0.034	0.370	0.236	1								
Foreign Earnings Fraction	(5)	0.053	0.446	0.424	0.412	1							
Any Foreign Earnings Indicator	(6)	0.128	0.358	0.499	0.257	0.547	1						
NOL Carryforwards	(7)	0.003	-0.045	-0.064	-0.021	0.014	-0.015	1					
Loss Indicator	(8)	0.020	-0.100	-0.120	-0.049	-0.005	-0.041	0.397	1				
Profitability	(9)	0.022	0.122	0.141	0.085	0.040	0.123	-0.472	-0.724	1			
Log Market Cap	(10)	0.064	0.167	0.233	0.095	0.101	0.214	-0.220	-0.288	0.300	1		
Intangibles	(11)	0.037	0.054	0.122	0.013	0.070	0.112	0.017	-0.022	0.075	0.088	1	
Leverage	(12)	-0.002	-0.028	0.007	-0.006	-0.021	-0.007	-0.046	-0.113	0.143	0.186	0.152	1

This table presents summary statistics for the main sample. Panel A provides descriptive statistics for the variables included in the probit models. Note that the two measures of *PRE* have smaller N because this measure is missing for some targets, due to failure in the 10-K matching process and text search algorithm. Panel B presents means split according to the target-acquirer pairing. The characteristics of purely domestic targets with domestic acquirers are in column (1), purely domestic targets with foreign acquirers are in column (2), multinational targets with domestic acquirers are in column (3) and multinational targets with foreign acquirers are in column (4). A chi-squared test for independence is highly significant (p-value <0.001). Panel C presents Pearson correlations among the variables.

Table 3: Locked-out Earnings and Acquirer Location

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	PRE		PRE Indicator		Repatriation Cost	
Lockout	0.525***	0.328**	0.083***	0.039**	0.019***	0.012*
	(0.14)	(0.16)	(0.02)	(0.02)	(0.01)	(0.01)
NOL Carryforwards	0.009	0.006	0.006	0.004	0.008	0.004
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Loss Indicator	0.081***	0.069***	0.082***	0.072***	0.081***	0.070***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Profitability	0.120***	0.089*	0.112**	0.086*	0.099**	0.064
	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)
Log Market Cap	0.011***	0.008***	0.010***	0.009***	0.013***	0.010***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Intangibles	0.061*	0.045	0.053	0.044	0.092***	0.072**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Leverage	-0.02	-0.015	-0.024	-0.02	-0.015	-0.009
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Foreign Earnings Fraction		-0.048*		-0.042*		-0.032
		(0.03)		-0.023		-0.023
Any Foreign Earnings Indicator		0.097***		0.085***		0.089***
		(0.02)		-0.016		-0.014
Pseudo R-squared	0.013	0.024	0.017	0.024	0.013	0.023
N	4,383	4,383	4,611	4,611	5,243	5,243

This table presents marginal effects (with Huber-White robust standard errors reported in parentheses) from estimating probit models with an indicator variable set equal to one if the acquirer is foreign and zero otherwise. In columns (1) and (2), the independent variable of interest is the stock of permanently reinvested earnings divided by total target assets. In columns (3) and (4), the independent variable of interest is an indicator variable set to one if the target has any PRE. In columns (5) and (6), the independent variable of interest is based on the Foley et al. (2007) measure of the target firm's potential tax-related repatriation costs (specifically, the three year measure if it is available; if not, the two year measure; then the one year measure; if all of these are missing, a zero is imputed). Note that all non-indicator variables are winsorized at 1% and 99%. Detailed variable definitions are provided in Appendix B. Columns (1), (3), and (5) include only target firm-level accounting controls while columns (2), (4), and (6) include additional controls to measure the importance of foreign activities to the domestic target firm. ***, **, and * indicate significance at the 1%, 5% and 10% levels (two-sided test, one-sided for coefficients with a hypothesized relation). Note also that the sample size increases from columns (1) and (2) to columns (3) and (4) because some firms report only the presence of PRE and not the actual amount.

Table 4: Acquirer Location and Worldwide vs. Territorial Tax Systems

Variable	(1)	(2)	(3)	(4)
Subsample composition/Dependent variable coding:				
US acquirers	0	0	0	
Foreign acquirers - WW		1	0	0
Foreign acquirers - territorial	1		1	1
Variable				
PRE	0.315***	0.029	0.300***	0.536*
	(0.13)	(0.11)	(0.13)	(0.39)
Foreign Earnings Fraction	-0.018	-0.038**	-0.012	
	(0.02)	(0.02)	(0.02)	
Any Foreign Earnings Indicator	0.058***	0.059***	0.047***	
	(0.01)	(0.01)	(0.01)	
NOL Carryforwards	0.003	0.004	0.003	-0.013
	(0.01)	(0.01)	(0.01)	(0.03)
Loss Indicator	0.039*	0.045***	0.032*	-0.082
	(0.02)	(0.02)	(0.02)	(0.06)
Profitability	0.048	0.053*	0.041	-0.144
	(0.04)	(0.03)	(0.04)	(0.14)
Log Market Cap	0.006**	0.003	0.006**	-0.001
	(0.00)	(0.00)	(0.00)	(0.01)
Intangibles	0.018	0.034	0.014	-0.096
	(0.03)	(0.02)	(0.03)	(0.10)
Leverage	-0.022	0.009	-0.023	-0.071
	(0.02)	(0.02)	(0.02)	(0.08)
Pseudo R-squared	0.019	0.030	0.016	0.007
N	4,132	3,889	4,383	745

This table presents marginal effects (with Huber-White robust standard errors reported in parentheses) from estimating probit models with various indicator variables as the dependent variable. The independent variable of interest is the stock of permanently reinvested earnings divided by total target assets. Note that all non-indicator variables are winsorized at 1% and 99%. Detailed variable definitions are provided in Appendix B. Columns (1), (2), and (3) include acquisitions with U.S. acquirers, with column (1) adding foreign acquirers from territorial countries, column (2) instead adding those from worldwide countries, and column (3) including both U.S. acquirers and acquirers from other worldwide countries in the zero group and setting the dependant indicator variable equal to one for acquisition by territorial country acquirers. Column (4) removes the domestic acquirer observations and redefines the dependent variable to equal to one if the foreign acquirer comes from a territorial country, and zero if from a worldwide country. The foreignness controls are dropped from this column, as the sample is restricted to foreign deals. ***, **, and * indicate significance at the 1%, 5% and 10% levels (two-sided test, one-sided for coefficients with a hypothesized relation).

Table 5: Acquirer Location and Switches in Tax Systems

Variable	(1)	(2)	(3)	(4)
PRE	1.579***	1.214***	0.396	0.159
	(0.43)	(0.37)	(0.488)	(0.347)
NOL Carryforwards	0.043*	0.033*	-0.033	0.044*
	(0.03)	(0.02)	(0.051)	(0.026)
Loss Indicator	0.059	0.036	0.138	0.031
	(0.08)	(0.07)	(0.145)	(0.062)
Profitability	-0.018	-0.053	0.065	0.067
	(0.17)	(0.16)	(0.280)	(0.146)
Log Market Cap	-0.002	-0.002	-0.009	0.013
	(0.01)	(0.01)	(0.020)	(0.009)
Intangibles	0.166*	0.133	0.117	0.199**
	(0.09)	(0.09)	(0.197)	(0.077)
Leverage	0.002	0.007	0.014	-0.031
	(0.10)	(0.09)	(0.185)	(0.083)
Country Fixed Effects	No	Yes	No	No
Pseudo R-squared	0.162	0.283	0.095	0.100
N	214	212	62	247

This table presents marginal effects (with Huber-White robust standard errors reported in parentheses) from estimating probit models with an indicator variable set equal to one if the acquirer faces a territorial system and zero if the acquirer faces a worldwide system. The independent variable of interest is the stock of permanently reinvested earnings divided by total target assets. Note that all non-indicator variables are winsorized at 1% and 99%. Detailed variable definitions are provided in Appendix B. Columns (1) and (2) restricts the sample to targets of foreign acquisitions where the acquirer is resident in a country that changed from a worldwide to a territorial tax system between 1995 and 2010. The majority of the sample consists of acquirers from the U.K. (164 deals) and Japan (38 deals), which both reformed their systems from worldwide to territorial as of 2009. The remaining 25 observations are from Italy, New Zealand, and Finland. Country fixed effects (for the 5 countries in the above sample) are included in column (2). Columns (3) and (4) present placebo tests. In column (3) all observations are included from non-switching worldwide system countries and the dependent variable is set equal to one assuming a pseudo switch in 2009. The sample in column (4) includes observations from the two non-switching countries closest in size to the U.K. (Canada and France) and Japan (Switzerland and Bermuda). Again, the dependent variable is set equal to one assume a pseudo switch in 2009. ***, **, and * indicate significance at the 1%, 5% and 10% levels (two-sided test, one-sided for coefficients with a hypothesized relation).

Table 6: Robustness
Panel A: Additional fixed effect controls

Additional Fixed Effect Controls	(1)	se	(2)	se	
Baseline	0.525***	(0.137)	0.328**	(0.157)	N=4,383
Year FE	0.496***	(0.137)	0.323**	(0.156)	N=4,383
FF5 Industry FE	0.451***	(0.140)	0.274**	(0.158)	N=4,383
Year and FF5 FE	0.424***	(0.140)	0.268**	(0.157)	N=4,383

Panel B: Size adjustment

Size adjustment	(1)	se	(2)	se	
Baseline	0.525***	(0.137)	0.328**	(0.157)	N=4,383
Include control for log acquirer size	0.534***	(0.141)	0.338**	(0.162)	N=3,192
Drop smallest 10% of targets	0.532***	(0.143)	0.360**	(0.165)	N=3,945
Drop largest 10% of targets	0.605***	(0.162)	0.416**	(0.182)	N=3,945
Drop smallest 10% of acquirers	0.513***	(0.144)	0.300**	(0.168)	N=2,873
Drop largest 10% of acquirers	0.603***	(0.144)	0.395***	(0.164)	N=2,873

Panel C: Dropping observations

Dropping observations	(1)	se	(2)	se	
Baseline	0.525***	(0.137)	0.328**	(0.157)	N=4,383
Dropping Ireland	0.586***	(0.136)	0.359***	(0.156)	N=4,377
Dropping Havens	0.568***	(0.130)	0.384***	(0.149)	N=4,290

This table presents marginal effects (with Huber-White robust standard errors reported in parentheses) from estimating probit models with an indicator variable set equal to one if the acquirer is foreign and zero otherwise. The presented coefficients and standard errors relate to the stock of permanently reinvested earnings divided by total target assets. Column (1) uses the specification of column (1) in Table 3, while column (2) uses the specification of column (2) in Table 3 and so includes additional controls to measure the importance of foreign activities to the domestic target firm. The first row of each panel presents the estimates from Table 3 as a benchmark. The labels along the left hand side describe differences in included controls or sample selection for each row. ***, **, and * indicate significance at the 1%, 5% and 10% levels (one-sided).

Table 7: Relation with Cash Holdings

Variable	(1)	(2)	(3)	(4)
Cash defined as	*Cash plus STI*		*Cash plus STI plus LTI*	
PRE	0.613***	0.353*	0.582***	0.318*
	(0.204)	(0.224)	(0.211)	(0.231)
PRE*HighCash	-0.095	0.003	-0.038	0.060
	(0.270)	(0.274)	(0.272)	(0.277)
Firm Controls	Yes	Yes	Yes	Yes
Foreignness Controls	No	Yes	No	Yes
Pseudo R-squared	0.011	0.022	0.011	0.022
N	4,383	4,383	4,383	4,383
Sum of the effect on PRE and PRE*HighCash	0.518***	0.356**	0.544***	0.378**

This table presents marginal effects (with Huber-White robust standard errors reported in parentheses) from estimating probit models with an indicator variable set equal to one if the acquirer is foreign and zero otherwise. The model mirrors columns (1) and (2) from Table 3 with the variable HighCash, and its interaction with PRE added. In columns (1) and (2), the independent variable of interest is the stock of permanently reinvested earnings divided by total target assets, and its interaction with an indicator variable set equal to 1 if cash and short-term investments (both scaled by total assets) is above the median for firms with PRE, zero otherwise. In columns (3) and (4), HighCash is an indicator variable set equal to 1 if cash, short-term investments, and long-term investments (all scaled by total assets) is above the median for firms with PRE, zero otherwise. Note that all non-indicator variables are winsorized at 1% and 99%. Detailed variable definitions are provided in Appendix B. Columns (1) and (3) include only target firm-level accounting controls while columns (2) and (4) include additional controls to measure the importance of foreign activities to the domestic target firm. ***, **, and * indicate significance at the 1%, 5% and 10% levels (two-sided test, one-sided for coefficients with a hypothesized relation).