The Effect of Repatriation Tax Costs on U.S. Multinational Investment

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May 23, 2014

Abstract: This paper investigates whether the U.S. repatriation tax for U.S. multinational corporations (MNCs) affects foreign investment. Prior research shows that repatriation tax costs are positively associated with cash overseas, but the use of such cash is not well understood. Our results show that the locked-out cash due to repatriation tax costs is associated with a higher likelihood of foreign (but not domestic) acquisitions. We also find that the market reaction to an announcement of foreign acquisitions is more negative for firms with more locked-out cash. These results highlight an unintended consequence of U.S. tax policy on worldwide investment activity.

Keywords: Cash, Investment, Tax

JEL Codes: M40, G34, H25, F23

We appreciate the comments of an anonymous referee, David Denis, Lisa Eiler (discussant), Jeff Hoopes, Nemit Shroff, and workshop participants at the 2012 AAA annual meeting and MIT. We also thank Scott Dyreng for sharing Exhibit 21 data. The statistical analysis of firm-level data on U.S. multinational companies was conducted at the Bureau of Economic Analysis (BEA), Department of Commerce under arrangements that maintain legal confidentiality requirements. The views expressed in this study are those of the authors and do not reflect official positions of the U.S. Department of Commerce. Part of this research was conducted when Verdi was a Visiting Professor at Unisinos University. Rodrigo Verdi gratefully acknowledges financial support from the Sloan School of Management, the Sarofim Family, and the CAPES Foundation. Rebecca Lester gratefully acknowledges financial support from the Sloan School of Management and the Deloitte Foundation.

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1. Introduction

U.S. multinational companies (MNCs) currently hold over $2 trillion in cash, with the majority of this amount held by foreign subsidiaries (Casselman and Lahart, 2011; Davidoff, 2011). One oft-suspected reason for this offshore cash is the U.S. tax treatment of foreign-sourced earnings. U.S. tax rules are such that the operating earnings of foreign subsidiaries are generally not subject to U.S. tax until the related cash is repatriated to the U.S. Foley et al. (2007) provide evidence that the U.S. tax due upon repatriation (i.e., the repatriation tax, which is the U.S. tax less a foreign tax credit for taxes paid to the foreign jurisdiction on the earnings[1]) partially explains the high levels of U.S. MNCs' foreign cash holdings. In other words, to avoid the U.S. repatriation tax, U.S. multinationals do not repatriate foreign cash. While Foley et al. (2007) (and related studies) provide evidence that U.S. tax policy encourages the cash to be "locked out" of the U.S., the use, or economic consequences, of these tax-induced overseas cash holdings is not well understood.

Our paper examines one possible use of the tax-induced foreign cash by studying the investment policy of U.S. multinationals. Specifically, we investigate whether the tax-induced overseas cash holdings are associated with overseas investment. Harford (1999) shows that cash rich firms engage in more acquisitions than other firms. We investigate a similar research question in the context of cash held overseas due to the U.S. repatriation tax. Specifically, our research question is whether the locked-out cash due to repatriation tax costs (i.e., the tax-induced foreign cash) is associated with foreign acquisition activity. Cisco's CEO John Chambers revealed sentiment consistent with this line of thinking when asked about Cisco's $40 billion overseas cash held because of the repatriation tax. He stated, "We leave the money over

[1] The details of the foreign tax credit are beyond the scope of this paper. In general, the credit is equal to the foreign taxes paid on foreign-sourced earnings, subject to limitations and expense allocation. See Scholes et al. (2014) for a more detailed discussion.

there, I create jobs overseas, I acquire companies overseas, I build plant overseas, and I badly want to bring that money back" (Chambers, 2011).

Although Foley et al. (2007) show that higher repatriation tax costs are associated with higher cash balances, and Harford (1999) demonstrates that higher cash balances are associated with acquisitions, there are reasons why higher tax-induced foreign cash would not be associated with greater foreign investment. Firms might retain the foreign cash for precautionary reasons (Opler et al., 1999; Bates et al., 2009), in anticipation of a tax policy change or holiday, or spend it on other activities such as increased compensation, SG&A expenses, etc., (e.g., Core et al., 2006). In such cases, we would not expect a relation between tax-induced foreign cash and foreign investment activity.

Our analyses focus on the investment behavior of U.S. MNCs and use both Compustat data as well as confidential data on foreign cash holdings and foreign investment from the Bureau of Economic Analysis (BEA). In our first set of tests, we follow Harford (1999) and focus on acquisitions because acquisitions represent a large fraction of foreign investment (Dunning, 1998), and data on acquisitions are available for a large sample of U.S. multinationals. The sample consists of foreign deals of U.S. multinational firms from 1988 to 2004. We stop our sample period in 2004 to avoid the effects of the American Jobs Creation Act (AJCA or the Act). The AJCA effectively lowered the tax rate on repatriations of foreign earnings for a one year period (starting for the most part in 2005), during which some firms repatriated large amounts of cash from foreign subsidiaries at a low tax price (we discuss the AJCA more below).

We use two proxies for tax-induced foreign cash. First, we use Foley et al.'s (2007) measure of repatriation tax costs, which captures the amount of incremental taxes a company would have to pay if it repatriated foreign earnings to the U.S. Foley et al. show that this measure is

associated with the foreign cash balances held by U.S. multinationals and thus serves as an indirect proxy for the amount of cash held overseas due to the repatriation tax. An advantage of this proxy is that it is available for all firms on Compustat. Second, we collect foreign cash holdings using BEA data and estimate a predicted amount of foreign cash held due to the repatriation tax. While this proxy directly uses data on foreign cash, the disadvantage is that it is only available for a subset of firm-years and, consequently, must be estimated for the remaining firm-years in our sample.

We find that both proxies for tax-induced foreign cash are positively and significantly related to the probability and frequency of foreign acquisitions. In economic terms, a one-standard-deviation increase in either proxy for tax-induced foreign cash is associated with a relative increase of approximately 5% in the probability of a foreign acquisition. These results are robust to controlling for other factors that influence firm acquisition behavior, such as free cash flow, growth opportunities, and the firm's existing foreign and domestic presence. Further, we use the firm as its own control by comparing foreign and domestic investment and find that our results exist only for foreign acquisitions, but not for domestic deals, consistent with our predictions. Overall, these results are consistent with the hypothesis that locked-out cash due to repatriation tax costs leads managers to invest overseas.

We next examine whether the acquisitions are value increasing or value decreasing to the firm. Jensen's (1986) agency theory suggests that managers have incentives to grow the firm beyond its optimal size, i.e., to "empire build." Under this theory, managers retain cash under their control and grow the firm rather than pay the cash to shareholders. Consistent with Jensen's theory, Harford (1999) shows that higher cash balances are associated with agency-driven acquisitions. Specifically, the announcements of acquisitions by cash-rich firms have lower

stock returns around the acquisition announcement date, and acquisitions by cash-rich firms are more likely to be diversifying. Harford concludes that cash-rich firms are more likely to engage in value decreasing investment activity.

The positive association between a firm's repatriation tax costs and foreign investment activity in our research setting does not necessarily indicate that the investment is value destroying. For example, investing in foreign acquisitions could maximize the firm's after-tax cash flows compared to repatriating the foreign cash and paying the U.S. tax. In other words, foreign acquisitions might simply reflect firms exploiting foreign growth opportunities in an efficient after-tax manner. If this were the case, U.S. multinationals would engage in more foreign acquisitions because such investments would be value enhancing to shareholders (relative to paying the U.S. tax under the current rules) and thus, investors would react positively to the announcement of such deals.[2]

We examine the market response to acquisition announcements and find that tax-induced foreign cash is negatively associated with the market reaction for foreign, but not domestic, deals. In economic terms, a one-standard-deviation increase in our proxies for tax-induced foreign cash is associated with an acquirer's negative abnormal return of 0.32-0.38%, representing a relative loss of roughly 5-6% of the transaction value, or approximately $5-$6

[2] Hartman (1985) also models the foreign reinvestment vs. repatriation/domestic investment decision. If the firm invests overseas, the parent will have $[1+r^*(1-t^*)]$ to later be repatriated and taxed (where r* and t* are the foreign rate of return and foreign tax rate, respectively). After an eventual repatriation, the parent will receive $[(1-t)/(1-t^*)][1+r^*(1-t^*)]$. If the cash is instead immediately repatriated, taxed domestically, and reinvested at home, the parent will have $[(1-t)/(1-t^*)](1+r_n)$, where t and r_n are the home country tax rate and the net return, respectively. Hartman predicts that the subsidiary will optimally reinvest rather than repatriate if the after-tax rate of return in the foreign jurisdiction will exceed the home country rate of return. Assumptions underlying the Hartman model are that all cash will be returned to the parent company in a taxable manner and constant tax rates. These assumptions are not valid if tax rates change (including moving to a territorial system or a tax holiday for repatriated earnings).

million per deal. We infer from these results that foreign investments related to a U.S. multinational's tax-induced foreign cash are value decreasing, possibly reflecting agency-issues.[3]

As additional analyses, we conduct two sets of tests. First, we examine whether and how the investment of U.S. multinationals changed after the AJCA of 2004. The AJCA temporarily lowered a firm's repatriation tax costs by providing a one-time tax holiday under which firms could repatriate cash at a reduced domestic tax rate. Approximately $312 billion in qualifying dividends were repatriated by over eight hundred U.S. multinationals. In theory, the Act had the effect of lowering foreign cash balances and raising domestic cash balances. Thus, we compare the change in foreign acquisitions with the change in domestic deals, and we find that foreign acquisitions (relative to domestic deals) decreased in the year subsequent to the passing of the AJCA.

Second, we use the BEA data to obtain measures of other forms of foreign investment, such as capital expenditures and research and development (R&D). We find that our proxies for tax-induced foreign cash are also related to foreign (but not domestic) capital expenditures, consistent with our results for foreign acquisitions. With respect to R&D, we find that tax-induced foreign cash is related to both foreign and domestic R&D. A possible explanation for this result is the presence of a confounding effect - U.S. multinationals often conduct R&D domestically to receive the U.S. R&D tax credit, and subsequent to domestic development, transfer intellectual property offshore to facilitate shifting of income from high-tax to low-tax

[3] Because stock prices react to unexpected announcements, one possible interpretation of the negative market reaction we document is that, because of the cash stores, the market had expectations of good acquisition opportunities; however, the deals that were announced were not perceived as favorably as the deals that were expected. In either case, the negative reaction is consistent with the information conveyed during the announcement being value decreasing (or value decreasing relative to expectations).

jurisdictions. Thus, these same firms that conduct large amounts of R&D domestically also have a substantial amount of offshore earnings and trapped cash.

We contribute to the literature by showing a real effect of U.S. tax policy for multinational companies. Specifically, the results suggest that the locked-out cash due to repatriation tax costs encourages foreign investment, and such investment is not perceived as value enhancing to shareholders. While these effects of the U.S. tax policy have long been suspected, they have not been systematically demonstrated in prior literature.[4]

The paper proceeds as follows. Section 2 describes our research design, and Section 3 discusses the sample and presents our results. Section 4 provides additional analyses, and Section 5 concludes.

2. Research design

We conduct three sets of analyses to test our research questions. In our main tests, we follow Harford (1999) and focus on acquisitions. Acquisitions represent a large fraction of foreign investment (Dunning, 1998) and have the advantage of being empirically available for a large sample of U.S. multinationals, allowing us to study the market reaction to such deals. We create our proxies for tax-induced foreign cash and study the relation between these proxies and the likelihood, frequency, and market reaction surrounding the announcement of foreign acquisitions. In section 4, we then perform two additional tests in which we (i) exploit the AJCA to measure the effects of changes in firms' tax-induced foreign cash and (ii) expand our measures of investment to include capital expenditures and research and development activities.

[4] Edwards et al. (2013), in a concurrent working paper, also studies the market reaction to foreign acquisitions by U.S. multinationals. Consistent with our findings, they show that the market reacts negatively for large foreign acquisitions. Despite the similarity in research questions, the two papers have different samples, empirical constructs, and research designs. We view both papers as complementary studies on the important question of the impact of U.S. tax policy on U.S. firms' foreign investment.

2.1. Relation between tax-induced foreign cash and acquisitions

As in Harford (1999), we use a probit specification to model the likelihood that a firm will engage in an acquisition (Eq. (1) below). We also test the number of acquisitions using a negative binomial specification, a nonlinear model that permits estimation for count data (Eq. (2), Cameron and Trivedi, 2005). Specifically, we estimate the following regressions:

$$AcqInd_{i,t} = \alpha + \beta_1 TIFC_{i,t-1} + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (1)$$

$$\#Deals_{i,t} = \alpha + \beta_1 TIFC_{i,t-1} + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (2)$$

where $AcqInd_{i,t}$ is defined as *ForInd* (*DomInd*) and is an indicator equal to 1 if the firm reported a foreign (domestic) acquisition in year *t*, zero otherwise; $\#Deals_{i,t}$ is defined as *#ForDeals* (*#DomDeals*), the number of foreign (domestic) acquisitions in year *t*; *TIFC* is one of two proxies (and estimated separately using each proxy) for a firm's tax-induced foreign cash; and *Controls* is a set of control variables. All variables, including the TIFC proxies, are described in detail below and in Appendix A. In both equations, we include year fixed effects to account for aggregate macroeconomic fluctuations in acquisitions over time.[5] We report standard errors that are clustered by firm and year for Eq. (1) and by firm for Eq. (2) to account for dependence within our sample (Petersen, 2009).[6] To the extent that tax-induced foreign cash affects a firm's future foreign acquisitions, we predict the coefficient β_1 to be positive.

2.2. The market reaction to acquisition announcements

We examine the relation between the cumulative abnormal return around the acquisition announcement and tax-induced foreign cash. We estimate the following OLS regression:

[5] Because the regressions in Eq. (1) or (2) use data at the acquirer-year level, we do not include target country fixed effects since an acquirer may have deals in multiple countries in a given year. We do include target-country fixed effects, however, in the deal-specific regression outlined in Eq. (3) in which the unit of observation allows for the measurement of the target location.

[6] We cluster the standard errors in Eq. (2) by firm only because we know of no procedure that handles a two-way cluster in negative binomial models. We also estimate the regression with an OLS specification using a two-way cluster procedure and arrive at the same inferences.

$$CAR_{i,t} = \alpha + \beta_1 TIFC_{i,t-1} + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (3)$$

where CAR is a measure of the five–day (-2,2) cumulative abnormal return around the announcement date of the deal as disclosed in SDC; *TIFC* is measured using each of our two proxies for tax-induced foreign cash; and *Controls* is a set of control variables.[7] The model includes year, target-country, and target-industry fixed effects to control for time, country, and industry trends that can affect firm acquisition behavior and the market reaction to such deals. We cluster the standard errors by the acquiring firm and year. The coefficient of interest is β_1. As discussed above, we do not sign this prediction because foreign acquisitions could either reflect efficient maximization of after-tax cash flows or agency costs associated with free cash flow.

2.3. Measuring tax-induced foreign cash (TIFC)

We use two proxies for tax-induced foreign cash. First, we employ the measure of repatriation tax costs used in Foley et al. (2007). This measure, *REPAT*, is defined as the incremental U.S. tax due when cash is repatriated from foreign subsidiaries. Foley et al. (2007) demonstrate that *REPAT* is associated with foreign cash holdings, and we use this measure as an indirect proxy for the amount of cash held overseas due to the repatriation tax costs. While imperfect, the measure overcomes a central challenge – that the amount of unremitted foreign earnings (the accumulated stock variable) is not disclosed in the financial statements and thus is not observable for the majority of firms.

To calculate *REPAT*, we multiply a firm's foreign pretax income (*PIFO*) by the statutory U.S. tax rate to yield an estimate of the total amount of U.S. tax that would be due upon repatriation if the U.S. did not permit a foreign tax credit. To estimate the foreign tax credit, we then subtract the amount of current foreign taxes payable (*TXFO*) to obtain the net incremental

[7] The market-model parameters are estimated using all the daily data for the period (-370, -253). Following Harford (1999), we calculate the run-up return over the period (-252, -20) and use the value-weighted return from CRSP as a proxy for the market return.

U.S. tax that would be due upon repatriation of the cash generated by the foreign earnings. As in Foley et al. (2007), we set missing values of PIFO and TXFO to zero. Finally, we scale the amount of repatriation tax costs by the firm's total assets.

This measure relies on three key assumptions. First, the calculation assumes that foreign reported earnings are an approximation of foreign taxable income. This assumption is often relied upon in empirical work because tax return data for foreign subsidiaries are unavailable. Second, as Foley et al. (2007) state, the calculation of the repatriation tax cost uses annual foreign income to calculate the incremental U.S. taxes due upon repatriation, even though the measure is intended to capture the taxes on repatriating the unremitted foreign earnings of the company. Thus, the measure assumes that the annual income is proportional to the total stock of foreign earnings that has not yet been repatriated. Finally, Foley et al. (2007) assume that the foreign tax rates applicable at the time that foreign taxes are paid are similar to rates at the time of repatriation. This assumption reflects that the measure includes an estimate of the available foreign tax credit upon an eventual repatriation. Foley et al. (2007) validate these assumptions by showing that *REPAT* is associated with the stock of foreign cash holdings using confidential data from the BEA.

Our second proxy for tax-induced foreign cash is computed using a two stage approach to estimate the predicted amount of foreign cash held due to the repatriation tax. This proxy more explicitly measures the link between a firm's repatriation tax cost and foreign cash. The main disadvantage of this measure, however, is that it relies on confidential data collected by the BEA, which is only available for a small subset of firms and years in our sample.

Appendix B describes the two-stage estimation of our second proxy in detail. Briefly stated, we first regress a firm's foreign cash holdings (from BEA data) on *REPAT* and a set of

control variables as in Foley et al. (2007). This first stage regression allows us to decompose the foreign cash holdings into the following three components: (i) predicted foreign cash due to *REPAT*, (ii) predicted foreign cash due to other determinants of cash, and (iii) an unexplained or residual foreign cash holdings. We use the fitted coefficients from this first stage regression to obtain the predicted value of foreign cash holdings due to *REPAT* (*Predicted Foreign Cash-REPAT*) and due to the control variables (*Predicted Foreign Cash-Controls*) for each firm-year in our Compustat sample. We then use *Predicted Foreign Cash-REPAT* as our second proxy for the tax-induced foreign cash and also include *Predicted Foreign Cash-Controls* as an additional control variable in Eq. (1)-(3).[8]

2.4. Control variables

Our set of control variables for Eq. (1) and (2) comes from Harford (1999). We control for the abnormal return (*Abnormal Return*), sales growth (*SalesGr*), noncash working capital (*WkCap*), leverage (*Leverage*), the market to book value of equity (*MTB*), price-to-earnings ratio (*PE*), and *Size*, defined as the natural logarithm of total assets. Because our sample consists of foreign and domestic acquisitions, we also include separate controls for foreign and domestic sales (*For Sales* and *Dom Sales*) to capture firms' existing activities and growth opportunities in its foreign and domestic jurisdictions. All control variables are measured in the year prior to the acquisition.[9]

Our set of controls for Eq. (3) also follows Harford (1999) and is supplemented by additional controls from more recent studies (e.g., Moeller et al., 2004; Masulis et al., 2007;

[8] As described in Appendix B, we include the predicted components related to *REPAT* and control variables when estimating the regression models for the full Compustat sample. For the smaller BEA sample for which we can observe foreign cash, we also present a specification that includes these two components as well as the residual component.

[9] We measure the control variables as of *t-1* to maximize sample size and for consistency with our return tests. In untabulated analyses, we also calculate *Abnormal Return*, *SalesGr*, *WkCap, Leverage*, *MTB*, and *PE* over the years *t-4* through *t-1,* as in Harford (1999). We obtain the same results.

Malmendier and Tate, 2008; Goodman et al., 2014). Specifically, we control for acquirer-specific variables such as *Size, MTB,* and *Leverage.* We also control for deal-specific variables such as (i) an indicator variable equal to one if the deal was diversifying, so defined if the parent's one-digit SIC code is different than the target's one-digit SIC code (*Diversifying Deal*); (ii) an indicator equal to one if the target was a public company (*Public Target*); (iii) an indicator equal to one if the deal was hostile (*Hostile Deal)*; and (iv) the price paid for the target company, scaled by the acquirer's market capitalization (*Transaction Value*).

3. Sample description and results

3.1. Sample

Our sample selection follows Foley et al. (2007). We start with all C-corporations incorporated in the U.S. We gather Compustat data for the years 1987 to 2003, ending in 2003 (matched with acquisition activity in year 2004) because the AJCA permitted firms to repatriate foreign cash at a lower tax rate in 2005, which likely changed the tax incentives to keep cash offshore.[10] We exclude firms missing industry identifiers as well as financial and utility firms because these companies are subject, respectively, to statutory capital and regulatory requirements that can affect their cash holdings. We require firm-years to have the requisite data to compute the tax induced foreign cash proxies and related controls for the first-stage regression (see Appendix B). As in Foley et al. (2007), we also restrict Compustat data to those firms with greater than $100 million of assets in 1984 real dollar terms, and we further require firms to be multinational corporations because these firms would be subject to the repatriation tax rules for foreign earnings. Specifically, we use Compustat, Compustat segment, and Exhibit 21 data

[10] Foley et al. (2007) start their sample in 1982. However, requiring data on acquisitions results in only 11 total observations for our sample in the years prior to 1987, which forces us to limit our sample to the post-1987 period.

(Dyreng and Lindsay, 2009) to identify and retain all firms that report foreign sales, foreign income, foreign taxes, or foreign subsidiaries in any year in our sample. We further refine our sample to require data on acquisitions and related controls. We eliminate 3,130 firm-years with missing data to compute the control variables in the acquisition regression specifications. Our final sample includes 24,312 firm-years.

For this sample of firm-years, we obtain data on all U.S. and foreign deals with announcement dates from January 1, 1988 through December 31, 2004 from SDC Platinum to match with the 1987-2003 firm-years. We identify only cash deals in our deal sample since our hypotheses relate to the use of cash retained overseas due to repatriation tax costs. The retained transactions include acquisitions of a majority interest, of a partial/remaining interest, and of assets, as well as buybacks and mergers as described in SDC. The sample includes all foreign transactions of U.S. parent firms, which could occur through either U.S. or foreign subsidiaries. Thus, importantly, if a U.S. parent holds cash offshore in a foreign subsidiary and uses that cash to acquire a foreign company, we capture such an acquisition in our data. Our sample of 24,312 firm-years contains deal information for 6,831 cash transactions, 1,097 of which are foreign and 5,734 domestic. Table 1, Panel A outlines the sample selection procedure.

As a final step, we match the firms in the Compustat sample with confidential firm-level panel data from the BEA Benchmark Survey of U.S. Direct Investment Abroad. These surveys provide financial, trade, and intercompany transaction data on U.S. parent companies and all foreign affiliates in which the U.S. parent entity owns at least 10%.[11] Although the BEA issues annual surveys, the most comprehensive data are collected every five years in "benchmark" surveys. Due to penalties for failure to file, the BEA believes that the data coverage is

[11] Foreign affiliates are required to report separately unless they are in both the same country and three-digit industry.

substantially complete and accurate.[12] The data available for each foreign subsidiary varies by the size of the entity; the largest subsidiaries are required to report detailed balance sheet information, including the amount of cash holdings.[13] See Foley et al. (2007), Blouin et al. (2012), and Bilir (2014) for additional discussion of the BEA data.

Using employer identification numbers and by hand-matching, we merge the sample of firms with necessary data to calculate tax-induced foreign cash proxies to the BEA sample of multinational firms represented in the benchmark survey years of 1989, 1994, 1999, and 2004. We obtain data on cash holdings for the beginning and end of each benchmark year. Thus, we are able to obtain foreign cash holdings data for 1989, 1993, 1994, 1998, 1999, 2003, and 2004. We use this sample to estimate the first-stage regression outlined in Appendix B (n=3,012). After eliminating observations with missing financial data to calculate the necessary control variables for the acquisition tests, the BEA/Compustat-merged sample includes 2,726 firm-year observations. This sample contains firm-years with 1,132 acquisitions, of which 287 (845) are foreign (domestic). Table 1, Panel B outlines the sample selection procedure for the final merged Compustat/BEA sample.

Untabulated descriptive statistics on the acquisitions in our sample show that both foreign and domestic transactions are distributed throughout the sample period, with most of the deals occurring in the latter half of the time period our sample covers. The ratio of foreign deals to all deals increased over the sample period, from 11 out of 170 total deals, or 6.50%, in 1988 to 115 out of 533 total deals, or 21.6%, in 2004, with the highest percentage of foreign deals (24.6%) in

[12] In a typical benchmark year, the survey accounts for over 99% of affiliate activity. For example, in 1994, participating affiliates accounted for an estimated 99.8% of total assets, 99.7% of total sales, and 99.9% of total U.S. FDI (Bilir, 2014). Note that, in the event of missing survey responses, the BEA will impute values. For our analysis, we exclude imputed or estimated amounts and only use actual reported values.

[13] In 1989, foreign subsidiaries with $15M or more of total assets, sales/revenue, or net income were required to complete the detailed balance sheet data requested on BE-10B (Long Form). This filing threshold increased to $50M, $100M, and $150M in 1994, 1999, and 2004, respectively.

2002. The average foreign (domestic) transaction size as a percentage of market capitalization is 6% (9%). The 1,097 foreign targets are from 69 different countries, concentrated among Canada (158), France (74), Germany (91), and the United Kingdom (275).

3.2. Descriptive statistics

Table 2, Panel A provides descriptive statistics for the firm-year sample and variables used to test whether there is an association between tax-induced foreign cash and the presence and number of foreign deals. Approximately 4.5% of the firm-year observations report a foreign acquisition (*ForInd*), while 20.6% of the sample firm-year observations have a domestic acquisition (*DomInd*). The mean *REPAT* equals 0.2% of total assets, similar to the value reported in Foley et al. (2007). The average firm in our sample experienced a 17% increase in sales, has a leverage ratio of 70%, and holds 9.9% of total assets as net working capital. The average percentage of foreign sales to total assets is 80%.

Panel B of Table 2 presents descriptive statistics for the deal-level sample and variables used to test the market reaction to a deal announcement. The data reveal that the average five-day abnormal return is 1.16% and comparable to prior research (e.g., Masulis et al., 2007).[14] The market reacts relatively less favorably to foreign than domestic deals (average abnormal return of 0.59% vs. 1.27%). Approximately 16% of the deals are diversifying, which means that the one-digit target SIC code is different than the parent's one-digit SIC code; 60.8% of the acquisitions are of a public target; and 1% of the deals are classified as hostile in SDC. The average transaction value is 8.2% of the acquirer's market capitalization.

3.3. Empirical results

[14] The magnitude seems reasonable given that the abnormal return in Masulis et al., (2007) is 0.798%. Harford (1999) does not provide descriptive statistics on the average return for us to compare.

Table 3 reports the results of the probit regressions testing the effect of tax-induced foreign cash on the likelihood of an acquisition. We standardize all variables to have a mean of zero and a standard deviation of one for ease of interpretation. We report the marginal effect, which measures the impact on the conditional mean of the dependent variable given a one-standard-deviation change in the explanatory variables (Cameron and Trivedi, 2009). Columns 1-3 (4-6) present the results for foreign (domestic) acquisitions. Columns 1 and 4 include the results from estimating Eq. (1) with *REPAT* as a proxy for tax-induced foreign cash. Columns 2 and 5 use *Predicted Foreign Cash-REPAT*, the two-stage-measured proxy derived using BEA data and estimated out of sample for the Compustat sample. Columns 3 and 6 then repeat the specifications in Columns 2 and 5 but restrict the sample to include only the BEA sub-sample of firm-years.

The coefficient on *REPAT* in Column 1 is positive and significant at the 5% level, suggesting that firms with higher tax-induced foreign cash are more likely to engage in foreign acquisitions. In terms of economic significance, a one-standard-deviation increase in *REPAT* (0.4% from Table 2) is associated with a 0.23 percentage point increase in the probability of a foreign acquisition. Given that the unconditional average probability of foreign acquisition (*ForInd* in Table 2, Panel A) equals 4.5%, this result implies a relative increase in the likelihood of a foreign acquisition of 5%. Using *Predicted Foreign Cash-REPAT* as our proxy in Column 2, we find results of similar magnitude and significance. In Column 3, we continue to find a positive marginal effect of similar magnitude using the smaller BEA-only sample of firms, although we note that the coefficient is not statistically significant.

Columns 4-6 present the results for domestic deals. The estimated coefficient for *REPAT* is insignificant, indicating that there is no systematic relation between *REPAT* and domestic

acquisitions.[15] The results using *Predicted Foreign Cash-REPAT* in Columns 5 and 6 are also insignificant and support the inference that our results are different across foreign and domestic deals as we would expect.

Table 4 presents results using Eq. (2), in which the *number* of deals is the dependent variable. As in Table 3, we standardize all variables to have a mean of zero and a standard deviation of one, such that the coefficient measures the effect on the dependent variable given a one-standard-deviation change in each of the independent variables. We find that *REPAT* is positively and significantly related to the number of foreign deals (Column 1). In terms of economic significance, a one-standard-deviation increase in *REPAT* is associated with a 7% increase in the incidence of the number of deals. In Column 2, we present results from Eq. 2 using *Predicted Foreign Cash–REPAT* in the Compustat sample. The results show that β_1 is statistically significant, consistent with tax-induced foreign cash being positively associated with the number of foreign deals. In Column 3 we present results from Eq. 2 using *Predicted Foreign Cash–REPAT* in the BEA sample. The results show that β_1 is positive but statistically insignificant. The results for domestic deals in Columns (4)-(6) show no systematic relation between a firm's tax-induced foreign cash (using either proxy) and the amount of domestic investment. Overall, the results in Tables 3 and 4 suggest that tax-induced foreign cash is positively associated with the likelihood and frequency of foreign, but not domestic, acquisitions.

We now turn to our tests of whether the foreign acquisitions driven by tax-induced foreign cash are value increasing or decreasing. As described above, the sample for these tests

[15] While the magnitude of the coefficients on *REPAT* in Panel A are similar across both models (0.23 vs. 0.33), the economic magnitudes are substantially different. This is because the unconditional mean for foreign (domestic) acquisitions equals 4.6% (20.6%). Thus, the marginal effect translates to a relative change of 5.1% vs. 1.6% in the unconditional probability of foreign and domestic deals, respectively.

includes 6,831 distinct cash acquisition announcements, 1,097 foreign and 5,734 domestic, during the period from January 1988 to December 2004.

Table 5 presents the regression results. As in Tables 3 and 4, we standardize all variables to have a mean of zero and a standard deviation of one, such that the coefficient measures the effect on the dependent variable given a one-standard-deviation change in each of the independent variables. Columns 1-3 (4-6) are presented in a similar manner as in Tables 3 and 4 in terms of variables and samples.

In Column 1, *REPAT* is negatively associated with the average market return around the acquisition. In economic terms, a one-standard-deviation change in *REPAT* translates to a negative market reaction of 32 basis points. Given that the average foreign deal in our sample equals 6% of the acquirer's market capitalization, this represents a loss of 5.3% of the transaction value, or $5.09 million per deal. Using *Predicted Foreign Cash-REPAT*, we find results of a similar magnitude in Columns 2 and 3, although the coefficient in Column 3 on the small sample of BEA-matched deals (n=287) is statistically insignificant. For domestic deals (Columns 4-6), in contrast, there is no relation between our proxies for tax-induced foreign cash and the abnormal return around the acquisition. Overall, our results are consistent with the agency theory view that tax-induced foreign cash leads to more foreign acquisitions and that such deals are value decreasing.[16]

4. Additional analysis and robustness tests

4.1. Effect of the AJCA tax holiday on foreign investment behavior

[16] In addition to return tests, Harford (1999) also shows that cash-rich firms are more likely to engage in diversifying acquisitions. In untabulated analysis, we also find consistent evidence in the context of foreign acquisitions. Specifically, the percentage of diversifying foreign deals is significantly greater than the percentage of diversifying domestic deals (26.9% vs. 13.5%), and this percentage increases with our proxies for tax-induced foreign cash. For instance, 27.95% of foreign transactions are diversifying among firms with positive *REPAT* values, as compared to 26.13% for firms with *REPAT* =$0.

In this section, we study the impact of tax-induced foreign cash on foreign investment behavior subsequent to the 2004 AJCA. The AJCA temporarily reduced the repatriation tax effectively to 5.25% (less foreign tax credits) for a firm's 2004 or 2005 tax year.[17] In response, U.S. MNCs repatriated approximately $312 billion of offshore cash and saved an estimated $3.3 billion in tax payments relative to if the firm had repatriated and paid the full U.S. tax absent the holiday (Senate Permanent Subcommittee on Investigations, 2011).

Recent studies have explored the effects of the repatriated cash on *domestic* investment. For example, Blouin and Krull (2009) and Dharmapala et al. (2011) show that firms used the majority of their repatriated funds for share repurchases. In contrast, Faulkender and Petersen (2012) find that only 25% of repatriated cash was used for share repurchases and that financially constrained firms did use repatriated funds to finance domestic investment. Despite these findings about the AJCA's effect on domestic activities, there is no study of the AJCA's impact on foreign investment behavior.

To test the effects of the AJCA on foreign investment activity, we extend our sample period to include acquisitions in 2005, the year subsequent to the AJCA. This extended sample period permits analysis of firms' investment immediately following the Act and is consistent with the period of the primary domestic reinvestment analysis conducted in Blouin and Krull (2009) and Dharmapala et al. (2011). Extending the sample period increases the sample size to 26,163 firm-years with data on 1,206 foreign and 6,215 domestic deals.

We then estimate the change in acquisition behavior subsequent to the passing of the AJCA using the following specifications:

[17] Internal Revenue Code Section 965 provided an 85% dividends-received-deduction for dividends paid by foreign subsidiaries to the U.S. parent. The U.S. multinational would then be subject to a 35% statutory rate on only 15% of the dividend. In essence, this provision reduced the rate on repatriated cash from 35% to 5.25% (15% taxable portion, times 35% tax rate).

$$AcqInd_{i,t} = \alpha + \beta_1 Year2005 + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (4)$$

$$\#Deals_{i,t} = \alpha + \beta_1 Year2005 + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (5)$$

where *Year2005* is an indicator equal to one if an M&A deal occurs in 2005, and all control variables are the same as those described in Section 2. We report standard errors that are clustered by firm in Eq. (4) as well as by year in Eq. (5) to account for time-series and cross-sectional dependence in the data (Petersen, 2009). We estimate Eq. (4) and (5) separately for foreign and domestic deals using seemingly unrelated regressions to first capture the difference in the level of pre- and post-AJCA investment, and then we test the difference in the coefficient of interest, β_1, across the foreign and domestic results to capture the difference-in-difference effect.

The regression is intended to examine any differential acquisition behavior immediately following the AJCA. If the pre-AJCA deals reflect agency issues (as the results in Table 5 suggest), and if the tax holiday provided a mechanism by which shareholders could demand that managers repatriate capital to reduce free cash flow issues, we would expect a decline in the number of foreign acquisitions immediately following the AJCA. Furthermore, if more cash is repatriated to the U.S., we might expect to see more domestic acquisitions in 2005. A null result could be interpreted as evidence that agency issues in the pre-AJCA period persisted despite the tax holiday. While firms did repatriate over $300 billion during the tax holiday, a significant amount of cash remained offshore, and cash balances have continued to grow to over $2 trillion since 2004 (Casselman and Lahart, 2011; Davidoff, 2011). Therefore, it is plausible that managers continued to exhibit agency-driven acquisition behavior in the post-AJCA period due to the preservation and subsequent accumulation of foreign cash holdings to avoid the U.S. repatriation tax cost.

Table 6 presents the AJCA analysis; the results of estimating Eq. (4) and (5) for foreign (domestic) deals are presented in Columns 1 and 2 (3 and 4). In Column 1, where the dependent variable is *ForInd,* the coefficient on the *Year2005* indicator variable is negative and significant, and in Column 2, where the dependent variable is *#ForDeals,* the coefficient on *Year2005* is also negative (but statistically insignificant). These results suggest that the likelihood and, to a lesser extent, the amount of foreign investment activity immediately following the AJCA declined. In contrast, the likelihood (Column 3) and number (Column 4) of *domestic* deals *increased* immediately following the AJCA. T-tests of the differences between the foreign and domestic coefficients on *Year2005* confirm that the results are significantly different (p-values of 0.09 and 0.10 for the probit and negative binomial specifications, respectively). Therefore, we conclude that the AJCA had significantly different effects on MNCs' foreign and domestic investment decisions due to the reduction in the repatriation tax.[18]

4.2. Analysis of other types of investment

In this section, we investigate if the relation between a firm's repatriation tax cost and acquisitions holds for other types of firm investment. Data on the location of firm investment (foreign vs. domestic) is generally unavailable from public sources. However, the BEA data include information on the level of capital expenditures and R&D expenses for both the U.S. parent firm and its foreign affiliates. We supplement the BEA data used in the main analysis with additional data from the BEA annual surveys from 2000-2003 to create a complete panel of

[18] We focus on deals in 2005 following prior literature (e.g., Blouin and Krull, 2009; Dharmapala et al., 2011). We observe similar but slightly weaker results if we extend the sample to also include 2006 transactions. Specifically, the t-statistic for the coefficient on the 'postAJCA' variable (which is equal to one for years 2005 and 2006) for the foreign (domestic) deals in the probit regressions reduces from 1.77 to 1.53 (2.18 to 2.09), but the difference between the change in foreign and domestic deals is similar in significance (p-value of 0.11).

annual cash holdings and investment activity for the period of 1998-2003.[19] We then match this data set with the existing Compustat data set that includes the control variables for the regression analysis. The final data set includes 2,499 (2,316) firm-years with foreign (domestic) capital expenditure and R&D data.

To test the relation between a firm's tax-induced foreign cash and these alternative types of investment, we estimate the following OLS regressions[20]:

$$CapEx_{i,t} = \alpha + \gamma_1 TIFC_{i,t-1} + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (6)$$

$$R\&D_{i,t} = \alpha + \gamma_1 TIFC_{i,t-1} + Controls_{i,t-1} + \varepsilon_{i,t}, \quad (7)$$

where *CapEx* is the amount of foreign (domestic) capital expenditures in year *t*, scaled by a firm's total assets, and *R&D* is the amount of foreign (domestic) research and development expense in year *t*, scaled by a firm's total assets. All other variables are the same as those described in Section 3 and are measured in year *t-1*.[21] We include year fixed effects and report standard errors that are clustered by firm and year.

Untabulated descriptive and correlation statistics show that foreign capital expenditures and R&D expense comprised 1.16% and 0.32% of total firm assets during this sample period. Domestic capital expenditures and R&D spending were 3.23% and 2.39%, respectively. Table 7 presents the results from estimating Eq. (6) and (7). Columns 1-2 (3-4) present results for *For* (*Dom*) *CapEx* or *R&D*. The control variables are standardized to have a mean of zero and a standard deviation of one, such that the coefficient measures the effect on the dependent variable

[19] The annual surveys request less detailed information than the benchmark surveys and cover fewer foreign affiliates; for example, the number of foreign affiliates who completed BE-11B (Long Form) and BE-11C (Short Form) in the 2000 annual survey is approximately 60% of the total number of foreign affiliates who completed the comparable forms in the 1999 benchmark year. Therefore, we confine use of these annual data to this supplemental analysis.

[20] A significant number of firm-year observations in this sample report $0 foreign and domestic R&D expense. Thus, we also estimate Eq. (7) with a Tobit specification and find consistent and even stronger results than those discussed in the text.

[21] We re-estimate the first-stage analysis described in Appendix B for this sample to generate the predicted values of foreign cash. Consistent with the main results, the coefficient on *REPAT* is 31.23 with a t-statistic of 4.93.

given a one-standard-deviation change in each of the independent variables. The dependent variables are multiplied by 100% for ease of interpretation.

Panel A presents the results for capital expenditures. We find that both proxies for tax-induced foreign cash are positively associated with foreign, but not domestic, capital expenditures. In terms of economic magnitude, a one standard deviation increase in these tax-induced cash holdings is associated with a 0.12% increase in *For CapEx* (a relative increase of 10% when compared to the mean *For CapEx* of 1.16%). We conclude from these tests that the agency-driven spending related to a firm's repatriation tax costs manifests in both foreign capital expenditures as well as acquisitions.

Panel B presents the results for R&D. In this case we find that our proxies for tax-induced foreign cash are positively associated with both foreign and domestic R&D spending. Thus, unlike acquisitions and capital expenditures, we observe that firms' offshore cash holdings due to the repatriation tax cost are also related to *Dom R&D*. This result is consistent with the notion that many U.S. multinational firms continue to conduct R&D work domestically to receive the U.S. R&D tax credit. Subsequent to domestic development, firms transfer intellectual property offshore to facilitate intercompany transfer pricing and the shifting of income from high-tax jurisdictions (such as the U.S.) to low-taxed jurisdictions such as Switzerland, Ireland, and haven countries where intellectual property can be held. Thus, because domestic R&D is often indicative of the type of firm that locates patents offshore and sources income to those offshore patents, it is unsurprising that we observe a positive relation between the amount of offshore cash held due to repatriation tax costs and *Dom R&D*.

In summary, Table 7 shows that the amount of tax-induced foreign cash is positively related to the level of foreign capital expenditures but not domestic capital expenditures, similar

to the results in our main tests for acquisitions. We find that both foreign and domestic R&D are associated with tax-induced foreign cash but conjecture that this is likely due to the confounding factor that R&D is often conducted in the U.S. because of the U.S. R&D credit, and high R&D firms also likely have high offshore cash, leading to the association of tax-induced foreign cash and domestic R&D.

4.3. Non-cash acquisitions

In this section, we return to the analysis of acquisition spending and test if the tax-induced foreign cash affects the financing of deal transactions. The main analysis conducted above on acquisitions focuses on cash deals, as they better pertain to our hypotheses on the use of offshore cash. In this section, we expand our sample to include both stock and hybrid (stock and cash) transactions, for a total deal sample of 8,475 deals, of which 1,321 are foreign and 7,154 are domestic. We then study whether foreign transactions and transactions from firms with high tax-induced foreign cash are more likely to use cash (as opposed to stock) as the source of financing.

Table 8 shows that cash deals are more prevalent than hybrid and stock deals (83% vs. 17%). The frequency of cash deals is also greater for foreign transactions (83.0% vs. 80.2%). We also observe that the percentage of foreign cash deals increases with our proxies for tax-induced foreign cash. For instance, 85.61% of foreign transaction are financed exclusively with cash among firms with positive *REPAT* values, as compared to 81.19% for firms with *REPAT* =$0. We note, however, that this difference is not statistically significant. Overall, evidence in Table 8 suggests that cash is a common source of acquisition financing and that the use of cash in

acquisitions is more common in foreign deals and (weakly) more common in firms with high tax-induced foreign cash.[22]

5. Conclusion

This paper investigates the economic consequences of U.S. repatriation tax costs on the multinational investment policies of U.S. corporations. We contribute to the literature by studying (i) whether the U.S. repatriation tax costs influence the investment policy of U.S. multinationals and, (ii) if so, whether this investment is value enhancing or value decreasing.

We test our hypotheses by examining the relation between two proxies for tax-induced foreign cash holdings and foreign investment activity (acquisitions). We find that both proxies are positively and significantly related to the probability, as well as the number, of foreign (but not domestic) deals. These results suggest that the mobility of foreign cash is constrained and that tax costs can be influential in firm investment behavior overseas.

Next, we examine if the foreign investment is value increasing by examining the five-day abnormal market returns to acquisition announcements. We find a negative association between tax-induced foreign cash holdings and the market reaction to foreign deals, which suggests that the investment activity of firms with high repatriation tax costs is viewed by the market as less value enhancing than the investment activity of firms with lower tax costs. These results are consistent with foreign investment activity reflecting agency-driven behavior.

We then examine how firms' foreign investment strategies changed after the AJCA, when firms could repatriate cash at a reduced tax rate. We find that the likelihood and number of

[22] As an additional (untabulated) analysis, we re-estimate our tests for a subset of firms that only engaged in stock deals (n=126) during our sample period. In contrast with our results with cash transactions, we find no evidence that *REPAT* is associated with foreign stock deals. This result is consistent with our prediction that the tax-induced cash leads to more foreign *cash* transactions as opposed to general foreign investment behavior.

foreign acquisitions declined immediately following the Act, while domestic acquisitions increased. This result offers further evidence that offshore cash holdings affect firms' investment strategies. Finally, we find that investment behavior similar to what we observe for acquisitions also manifests in foreign capital expenditures and foreign R&D activity using confidential BEA data on the location of foreign investment.

Our results are important for understanding the implications of the U.S. worldwide tax system. Prior literature and anecdotal evidence have focused on the foreign cash locked out of the U.S. and the related lost U.S. tax revenue on these overseas earnings. However, our results suggest that prior estimates of the lost revenue are a lower bound on the possible implications of the U.S. worldwide tax system with deferral. That is, the tax frictions are actually more economically significant once foreign value reducing investments (such as M&A transactions) are accounted for. We infer from this evidence that firms are both stockpiling cash and (poorly) investing overseas because U.S. tax policy hinders repatriation for use of cash domestically. Consequently, it is unsurprising that since the AJCA, many firms have lobbied for both additional repatriation tax holidays (Rubin and Drucker, 2011) and, more recently, a territorial tax system under which historical foreign earnings would be taxed at a much lower corporate rate (House Ways and Means Committee, 2011; Lift America Coalition, 2014). A recent comprehensive tax reform proposal attempts to address the U.S. international tax regime problems, including the amount of cash held in foreign subsidiaries (House Ways and Means Committee, 2014). However, the likelihood of successful tax reform in the near term remains uncertain.

We contribute to the literature by showing that U.S. tax policy has a real effect on the investment policy of U.S. multinational companies. Such policies, including investment location

decisions, likely affect firms' other real decisions and overall performance, and they quite possibly have implications for national outcomes in terms of gross domestic product and trade deficits. We look forward to future research that examines such consequences.

Appendix A
Variable Definitions

All variables are calculated using data from Compustat, CRSP, SDC Platinum, and the BEA.

Abnormal Return	Abnormal return calculated using the Fama French three-factor daily market model for year *t-1*. The market-model parameters are estimated using all of the daily data from the year prior to the calculation of abnormal returns.
$CAR_{(-2,2)}$	Five-day cumulative abnormal return around the announcement date of an acquisition in year *t*.
$CAR_{(-250,-20)}$	The run-up return for the period (-250, -20) prior to the announcement date of the transaction, as in Harford (1999). Market-model parameters are estimated over the period (-370,-253).
CapEx	Total capital expenditures, scaled by total assets, in year *t-1*.
Dividend Dummy	Indicator variable equal to one if the firm pays a dividend in year *t-1*, or zero otherwise.
Dom Capex	The amount of domestic capital expenditures in year *t* from the BEA, scaled by the total assets.
#DomDeals	The number of domestic cash deals in year *t.*
DomIncome	Pre-tax domestic income, scaled by total assets, in year *t-1*.
DomInd	An indicator equal to one if the firm made a domestic acquisition in year *t*, zero otherwise.
Dom R&D	The amount of domestic R&D expense in year *t* from the BEA, scaled by the total assets.
Dom Sales	The amount of domestic segment sales, scaled by total assets; both are measured year *t-1*.
Diversifying Acquisition	An indicator equal to one if the target's one-digit SIC code differs from that of the acquirer's.
For Capex	The amount of foreign capital expenditures in year *t* from the BEA, scaled by the total assets.
ForCash	The natural logarithm of the ratio of foreign cash to net assets (total assets minus cash) in year *t-1*.
#ForDeals	The number of foreign cash deals in year *t.*
ForInd	An indicator equal to one if the firm made a foreign acquisition in year *t*, zero otherwise.
For R&D	The amount of foreign R&D expense in year *t* from the BEA, scaled by the total assets.
For Sales	The amount of foreign segment sales, scaled by total assets; both are measured year *t-1*.
Hostile Deal	An indicator equal to one if the deal is coded as hostile in SDC Platinum.
Leverage	The ratio of the book value of debt to the market value of equity in year *t-1*.
Market Leverage	The ratio of total debt to the sum of total debt and the market value of equity, in year *t-1*.

MTB	The ratio of the market value of equity to book value of equity in year *t-1*.
PE	The stock price divided by earnings per share in year *t-1*.
Predicted Foreign Cash-REPAT	The amount of predicted foreign cash due to a firm's repatriation tax cost in year *t-1* (see Appendix B for first stage regression where this is computed). The amount is estimated using BEA data on foreign cash holdings.
Predicted Foreign Cash-Controls	The amount of predicted foreign cash related to determinants other than a firm's repatriation tax cost in year *t-1* (see Appendix B for first stage regression where this is computed). The determinants relate to control variables included in Eq. (B1).
Public Target	An indicator equal to one if the target is identified as public company in SDC Platinum.
R&D	Total R&D expenses, scaled by total assets, in year *t-1*.
REPAT	Measures the incremental U.S. tax due upon repatriation of cash from foreign subsidiaries in year *t-1*. This is calculated by multiplying foreign earnings by the statutory U.S. tax rate of 35%. From this, foreign taxes are subtracted as an estimate of the allowable foreign tax credit. The remaining liability is the estimated U.S. tax due upon repatriation. The maximum of this difference or zero is scaled by total assets (Foley et al., 2007).
Residual Foreign Cash	The residual values in year *t-1* from estimating Eq. (B1) for the BEA sample of firms.
SalesGr	Sales growth in year *t-1*.
Size	The natural logarithm of total assets in year *t-1*.
σ(OpInc)	Standard deviation, over the sample period, of the ratio of the firm's EBITDA to total assets.
Transaction Value	The deal value, scaled by the acquirer's market value of equity.
WkCap	Net working capital (current assets - current liabilities), minus cash and cash equivalents, normalized by total assets in year *t-1*.
Year2005	An indicator equal to one if an M&A transaction occurs in 2005.

Appendix B

We use the sample of BEA firms (described in Section 3 and presented in Table 1, Panel B) to estimate a first stage regression in which we regress a firm's foreign cash holdings on *REPAT* and control variables as in Foley et al. (2007). This specification allows us to partition foreign cash holdings into the following three components: (i) predicted foreign cash due to *REPAT*, (ii) predicted foreign cash due to other determinants, and (iii) an unexplained or residual foreign cash holdings value. The regression specification is as follows:

$$ForCash_{i,t-1} = \alpha + \beta_1 REPAT_{i,t-1} + \sum \mu_n Controls_{n,i,t-1} + \varepsilon_{i,t-1;} \quad \text{(B1)}$$

The dependent variable is the natural logarithm of the ratio of total foreign cash, divided by the firm's total assets. *REPAT* is defined above. The control variables follow those in Foley et al. (2007) and include *Size,* the ratio of domestic income to total assets *(DomIncome)*, an indicator equal to one if the firm pays a dividend or zero otherwise *(Dividend Dummy)*, book value of equity to the market value of equity *(BTM)*, the standard deviation of operating income *(σ(OpInc))*, the ratio of R&D expenses to total assets (*RD)*, the ratio of capital expenditures to total assets (*Capex)*, and market leverage (*Leverage)*.[23] The specification is estimated by year for the years with available data in the BEA database (1989, 1993, 1994, 1998, 1999, and 2003). The estimation of Eq. B1 also includes industry and year fixed effects. Standard errors are clustered by firm. Foley et al. (2007) shows that the coefficient β_1 is positive, suggesting that repatriation tax costs induce firms to retain cash overseas.

The descriptive statistics and results of Eq. (B1) are presented in Table B1. The descriptive statistics in Panel A are consistent with those reported by Foley et al. (2007). The

[23] When predicting foreign cash, Foley et al. (2007) also control for the ratio of foreign income to total assets. We do not include this control because we use Foley et al.'s main measure of *REPAT* which is constructed from foreign income using Compustat data, as opposed to the alternative measure Foley et al. derive from BEA data (and use in Table 5 of their paper). By using Foley et al.'s Compustat measure, we are able to estimate out-of-sample predicted values for foreign cash to test the investment behavior for a large sample of firms.

results of the first stage regression are presented in Panel B. We first present the coefficients from a pooled regression of all years for which foreign cash data is available in Column (1). Consistent with Foley et al. (2007), we find that the coefficient on REPAT (β_1) is positive and statistically significant (coefficient of 45.29). Columns (2)-(7) present the columns for the yearly estimation; other than the 1993 year, the coefficient on *REPAT* (β_1) is consistently positive and significant in each year.

We use the coefficients from the yearly estimations of Eq. (B1) estimated on the BEA sample to estimate out-of-sample values for *Predicted Foreign Cash-REPAT* and *Predicted Foreign Cash-Controls* on the full Compustat sample. To avoid a look-ahead bias, we use the coefficients from either a lagged or concurrent (if possible) model to predict the foreign cash components. For example, we use the coefficients from the model using 1989 BEA data to estimate foreign cash in 1989-1992 (given that BEA data on cash holdings is unavailable in 1990-1992), the coefficient from the 1993 model to estimate the predicted foreign cash components in 1993, the coefficient from 1994 model to estimate foreign cash from 1994-1997, and so on. We then obtain *Predicted Foreign Cash-REPAT* and *Predicted Foreign Cash-Controls* as follows:

$$\textit{Predicted Foreign Cash-REPAT}_{i,t-1} = \widehat{\beta_1} * REPAT_{i,t-1} \quad \text{(B2)}$$

$$\textit{Predicted Foreign Cash-Controls}_{i,t-1} = \sum_{j=1}^{n} \widehat{\mu_n} * Controls_{n,i,t-1} \quad \text{(B3)}$$

Also, for the firms in the BEA (for which we can observe foreign cash), we estimate *Residual Foreign Cash* as the residual from the regression model in Eq. (B1).

Finally, to implement the two-stage research design, we use *Predicted Foreign Cash-REPAT* as the proxy for *TIFC* in Eq. (1) and (2) described in Section 2 above and include *Predicted Foreign Cash-Controls* as an additional control variable when estimating these two

regressions. In addition, we present a specification using the smaller BEA sample in which we present results from estimating Eq. (1) and (2) including *Predicted Foreign Cash-REPAT*, *Predicted Foreign Cash-Controls*, and *Residual Foreign Cash* in the model.

Table B1

Descriptive Statistics for Cash Determinants and Predicted Values of Foreign Cash

Notes: This table presents descriptive statistics of cash determinants for Appendix B (Panel A) and results from OLS regressions that predict the amount of foreign cash related to a firm's repatriation tax cost using BEA data (Panel B) described in Appendix B. Variables are defined as in Foley et al. (2007) and are described in Appendix A. In Panel B, the dependent variable is the log of the ratio of foreign cash to net assets. Results reflect regressions using BEA foreign cash available in 1989, 1993, 1994, 1998, 1999, and 2003. Each specification includes industry and year fixed effects. T-statistics are presented in parentheses. Standard errors are clustered by firm. In Panel B, *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Descriptive Statistics for Cash Determinants

	N	Mean	Std. Dev.
$ForCash_{t-1}$	3,012	-4.897	2.310
$REPAT_{t-1}$	3,012	0.002	0.005
$DomIncome_{t-1}$	3,012	0.034	0.068
$Size_{t-1}$	3,012	7.742	1.443
$Dividend\ Dummy_{t-1}$	3,012	0.722	0.448
BTM_{t-1}	3,012	0.463	0.636
$\sigma(OpInc)_{t-1}$	3,012	0.049	0.031
$R\&D_{t-1}$	3,012	0.030	0.044
$CapEx_{t-1}$	3,012	0.065	0.048
$Market\ Leverage_{t-1}$	3,012	0.263	0.208

Table B1 (continued)

Panel B: Predicted Values of the Repatriation Tax Cost (First Stage Regression)

	Dependent Var: Ln(Foreign Cash/Net Assets)						
	(1) Pooled 1989-2003	(2) 1989	(3) 1993	(4) 1994	(5) 1998	(6) 1999	(7) 2003
$\boldsymbol{REPAT_{t-1}}$	**45.29*** (5.29)**	**56.28*** (2.63)**	**16.17 (0.85)**	**79.42*** (4.28)**	**70.27*** (2.99)**	**47.93** (2.54)**	**25.28* (1.75)**
$DomIncome_{t-1}$	-0.70 (-0.97)	-1.66 (-1.21)	1.92 (1.24)	0.96 (0.61)	-3.03* (-1.81)	0.45 (0.25)	-0.42 (-0.23)
$Size_{t-1}$	-0.14*** (-2.99)	-0.03 (-0.46)	-0.27*** (-3.25)	-0.10 (-1.35)	-0.17 (-1.57)	-0.25** (-2.50)	-0.15 (-1.40)
$Dividend\ Dummy_{t-1}$	-0.19 (-1.32)	0.35 (1.33)	-0.04 (-0.15)	0.08 (0.28)	-0.26 (-0.85)	-0.44* (-1.66)	-0.36 (-1.39)
BTM_{t-1}	-0.04 (-0.67)	0.02 (0.16)	0.05 (0.15)	-0.18 (-0.59)	0.08 (0.18)	-0.18 (-0.66)	-0.07 (-1.14)
$\sigma(OpInc)_{t-1}$	2.80 (1.50)	1.03 (0.30)	-5.59 (-1.48)	-2.75 (-0.73)	9.97*** (2.63)	6.47* (1.87)	3.80 (1.20)
$R\&D_{t-1}$	2.04 (1.39)	3.66 (1.24)	5.09* (1.82)	0.43 (0.17)	-0.69 (-0.25)	1.26 (0.40)	3.59 (1.17)
$CapEx_{t-1}$	1.77 (1.30)	0.61 (0.24)	4.83* (1.72)	0.14 (0.05)	0.84 (0.27)	-2.60 (-0.90)	-5.59 (-1.49)
$Market\ Leverage_{t-1}$	-0.66** (-2.08)	-1.01* (-1.84)	0.23 (0.33)	-0.47 (-0.73)	-1.46* (-1.79)	-0.72 (-1.01)	-0.68 (-1.09)
Observations	3,012	602	471	475	507	511	446
R-squared	0.112	0.207	0.183	0.177	0.228	0.202	0.175

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Table 1
Sample Selection

Notes: This table summarizes the sample selection procedures. We require data necessary to estimate tax-induced foreign cash proxies. The fields where data are required for one such proxy, *REPAT,* or control variables, include total assets (AT), common equity (CEQ), common shares outstanding (CSHO), closing price (PRCC_F), Operating Income Before Depreciation (OIBDP), Capital Expenditures (CAPX), Short Term Debt (DLC), and Long Term Debt (DLTT). For the acquisition tests, the required fields are earnings per share (EPSPI), sales (SALE), total current assets (ACT), total current liabilities (LCT), and information to calculate the abnormal announcement return. We also delete observations if CEQ or EPSPI are equal to zero because these fields are used in the denominators of MTB and PE, respectively.

Panel A: Compustat Sample

	No. of Obs. Dropped	No. of Obs. Remaining
Initial sample of non-financial/utilities U.S. corporations with necessary information to estimate tax-induced foreign cash proxies from 1987-2003		100,984
Eliminate observations with less than $100M in assets	61,519	39,465
Eliminate observations for non-MNCs	12,023	27,442
Eliminate observations with missing financial data for acquisition tests	3,130	24,312
# of Firm-years for Multinational Firms (Tables 3, 4, and 5)		**24,312**
# of Acquisitions (Table 6)		**6,831**
# Foreign Deals		1,097
# Domestic Deals		5,734

Panel B: BEA Sample

	No. of Obs. Dropped	No. of Obs. Remaining
# of firm-years with information to calculate tax-induced foreign cash proxies and with less than $100M in assets (from above)		39,465
Match with multinational firm-years in BEA Benchmark Survey Years of 1989, 1994, 1999, 2004	36,453	3,012
Eliminate observations with missing financial data for acquisition tests	286	2,726
# of BEA Firm-Years (Tables 3, 4, and 5)		**2,726**
# of Acquisitions (Table 6)		**1,132**
# Foreign Deals		287
# Domestic Deals		845

Table 2
Descriptive Statistics

Notes: This table presents descriptive statistics. Panel A (B) presents descriptive statistics for the variables used in the firm-year (deal-level) analyses in Tables 3 & 4 (5). Variables are defined in Appendix A. Predicted values of foreign cash were calculated using BEA data; because firm-specific amounts from the BEA cannot be disclosed, we do not report the median, 5%, or 95% values for the predicted values.

Panel A: Descriptive Statistics for Firm-Year Analysis

	N	Mean	Median	Std. Dev.	5%	95%
$ForInd_t$	24,312	0.045	0.000	0.208	0.000	0.000
$DomInd_t$	24,312	0.206	0.000	0.404	0.000	1.000
$\#ForDeals_t$	24,312	0.056	0.000	0.287	0.000	0.000
$\#DomDeals_t$	24,312	0.279	0.000	0.686	0.000	1.000
Acquisition Determinants						
$REPAT_{t-1}$	24,312	0.002	0.000	0.004	0.000	0.010
Abnormal $Return_{t-1}$	24,312	-0.016	-0.018	0.008	-0.030	0.000
$SalesGr_{t-1}$	24,312	0.170	0.090	0.396	-0.197	0.795
$WkCap_{t-1}$	24,312	0.099	0.087	0.155	-0.134	0.369
$Leverage_{t-1}$	24,312	0.698	0.262	1.589	0.000	2.677
MTB_{t-1}	24,312	2.766	2.015	3.779	0.386	8.178
PE_{t-1}	24,312	17.417	14.886	56.360	-32.489	75.595
$Size_{t-1}$	24,312	6.714	6.454	1.411	4.903	9.458
$For\ Sales_{t-1}$	24,312	0.798	0.380	1.104	0.000	3.001
$Dom\ Sales_{t-1}$	24,312	1.084	0.802	1.195	0.000	3.354
Pred. For. Cash-$REPAT_{t-1}$ (BEA)	24,312	0.088	-	0.245	-	-
Pred. For. Cash-$Controls_{t-1}$ (BEA)	24,312	-4.877	-	1.070	-	-

Table 2 (continued)
Descriptive Statistics

Panel B: Descriptive Statistics for Deal Analysis

	N	Mean	Median	Std. Dev.	5%	95%
$CAR_{(-2,2)}$	6,831	1.162	0.681	7.200	-8.504	12.404
Foreign Deals	1,097	0.590	0.282	5.590	-7.196	9.657
Domestic Deals	5,734	1.271	0.760	7.461	-8.706	12.835
Firm-Specific Variables						
$REPAT_{t-1}$	6,831	0.002	0.000	0.004	0.000	0.011
$CAR_{(-250,-20)}$	6,831	-6.485	-4.805	49.144	-86.621	72.799
$Size_{t-1}$	6,831	7.174	7.008	1.434	5.214	9.859
MTB_{t-1}	6,831	3.331	2.555	3.541	0.825	8.901
$Leverage_{t-1}$	6,831	0.191	0.152	0.177	0.000	0.550
Deal-Specific Variables						
Diversifying Acquisition	6,831	0.156	0.000	0.363	0.000	1.000
Public Target	6,831	0.608	1.000	0.488	0.000	1.000
Transaction Value	6,831	0.082	0.040	0.164	0.001	0.293
Hostile Deal	6,831	0.008	0.000	0.090	0.000	0.000
Pred. For. Cash-$REPAT_{t-1}$ (BEA)	6,831	0.100	-	0.263	-	-
Pred. For. Cash-$Controls_{t-1}$ (BEA)	6,831	-4.870	-	0.955	-	-

Table 3
Likelihood of Deals by U.S. Multinationals

Notes: This table presents the results of probit regressions that test the relation between a firm's repatriation tax costs and the likelihood of a deal occurring; in Columns 1-3 (4-6), the dependent variable is an indicator equal to 1 if the firm made a foreign (domestic) acquisition in year *t,* and zero otherwise. Columns 1 and 4 present analyses for the Compustat sample of firms; Columns 2 and 5 present analyses for the Compustat sample of firms using predicted values from BEA data; Columns 3 and 6 present analyses for the BEA sample of firms. The coefficients provided are the marginal effects of the probit results, multiplied by 100%. All variables are standardized to have a mean of zero and a standard deviation of one, such that the marginal effect measures the percentage effect on the conditional mean of the dependent variable (i.e., the change in the probability) given a one-standard-deviation change in each of the independent variables. All variables are defined in Appendix A. Each specification includes year fixed effects. Z-statistics are presented in parentheses. Standard errors are clustered by firm and year. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3 (continued)
Likelihood of Deals by U.S. Multinationals

	Dependent Var: ForInd			*Dependent Var: DomInd*		
	(1) *Compustat*	(2) *Compustat/BEA*	(3) *BEA*	(4) *Compustat*	(5) *Compustat/BEA*	(6) *BEA*
$REPAT_{t-1}$	**0.23****			**0.33**		
	(2.06)			**(1.00)**		
Predicted Foreign Cash-REPAT$_{t-1}$		**0.24****	**0.28**		**0.17**	**-0.97**
		(2.12)	**(0.59)**		**(0.54)**	**(-1.05)**
Predicted Foreign Cash-Controls$_{t-1}$		**0.13**	**-0.12**		**0.40**	**1.09**
		(0.91)	**(-0.22)**		**(1.00)**	**(1.13)**
$Residual\ Foreign\ Cash_{t-1}$			**1.77*****			**1.24**
			(3.02)			**(1.37)**
$Abnormal\ Return_{t-1}$	-0.33*	-0.33*	-0.17	-1.15**	-1.03*	2.77
	(-1.78)	(-1.72)	(-0.13)	(-2.19)	(-1.84)	(1.33)
$SalesGr_{t-1}$	0.74***	0.78***	1.33***	1.15***	1.27***	1.75*
	(5.12)	(5.44)	(2.76)	(3.54)	(3.50)	(1.83)
$WkCap_{t-1}$	0.48***	0.49***	0.88	1.10**	1.13**	2.55**
	(2.78)	(2.90)	(1.31)	(2.16)	(2.24)	(2.24)
$Leverage_{t-1}$	-1.96***	-1.91***	-2.53***	-7.96***	-7.90***	-8.65***
	(-3.08)	(-2.98)	(-2.66)	(-7.28)	(-6.83)	(-4.75)
MTB_{t-1}	0.36***	0.35***	0.40	1.22***	1.19***	0.15
	(3.37)	(3.39)	(0.94)	(2.78)	(2.74)	(0.13)
PE_{t-1}	0.23**	0.23**	0.50	0.14	0.12	-0.30
	(2.51)	(2.52)	(1.07)	(0.77)	(0.68)	(-0.35)
$Size_{t-1}$	2.13***	2.18***	4.87***	3.61***	3.72***	9.19***
	(13.53)	(13.98)	(7.44)	(6.23)	(6.34)	(7.55)
$For\ Sales_{t-1}$	0.38***	0.38***	0.48	-1.78***	-1.78***	-1.69*
	(2.97)	(3.02)	(0.99)	(-4.38)	(-4.50)	(-1.71)
$Dom\ Sales_{t-1}$	0.43***	0.42***	0.23	2.34***	2.30***	1.27
	(3.91)	(3.95)	(0.47)	(4.03)	(3.98)	(1.45)
Observations	24,312	24,312	2,726	24,312	24,312	2,726
Pseudo R-Squared	0.08	0.08	0.11	0.04	0.04	0.05

Table 4

Number of Deals by U.S. Multinationals

Notes: This table presents the results of negative binomial regressions that test the relation between a firm's repatriation tax cost and the number of M&A transactions; in Columns 1-3 (4-6), the dependent variable is the number of foreign (domestic) deals that occurred in year *t*. Columns 1 and 4 present analyses for the Compustat sample of firms; Columns 2 and 5 present analyses for the Compustat sample of firms using predicted values from BEA data; Columns 3 and 6 present analyses for the BEA sample of firms. All variables are defined in Appendix A and are standardized to have a mean of zero and a standard deviation of one, such that the coefficient measures the effect on the dependent variable given a one-standard-deviation change in each of the independent variables. Each specification includes year fixed effects. Z-statistics are presented in parentheses. Standard errors are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4 (continued)

Number of Deals by U.S. Multinationals

	Dependent Var: #ForDeals			*Dependent Var: #DomDeals*		
	(1) *Compustat*	(2) *Compustat/BEA*	(3) *BEA*	(4) *Compustat*	(5) *Compustat/BEA*	(6) *BEA*
$REPAT_{t-1}$	**0.07****			**0.01**		
	(2.13)			**(0.54)**		
Predicted Foreign Cash-REPAT$_{t-1}$		**0.06****	**0.04**		**-0.00**	**-0.02**
		(1.97)	**(0.66)**		**(-0.01)**	**(-0.50)**
Predicted Foreign Cash-Controls$_{t-1}$		**0.04**	**-0.03**		**0.01**	**0.07**
		(1.04)	**(-0.41)**		**(0.61)**	**(1.59)**
$Residual\ Foreign\ Cash_{t-1}$			**0.28*****			**0.06**
			(3.39)			**(1.56)**
$Abnormal\ Return_{t-1}$	-0.05	-0.04	-0.02	-0.05*	-0.05*	0.09
	(-0.74)	(-0.66)	(-0.14)	(-1.92)	(-1.74)	(1.22)
$SalesGr_{t-1}$	0.21***	0.22***	0.16**	0.09***	0.09***	0.08*
	(6.52)	(6.72)	(2.57)	(4.89)	(5.17)	(1.77)
$WkCap_{t-1}$	0.12**	0.12**	0.07	0.05**	0.05**	0.10**
	(2.20)	(2.29)	(0.80)	(2.10)	(2.19)	(2.16)
$Leverage_{t-1}$	-0.64***	-0.62***	-0.38***	-0.55***	-0.55***	-0.45***
	(-3.16)	(-3.06)	(-2.97)	(-6.54)	(-6.42)	(-4.97)
MTB_{t-1}	0.09***	0.09***	0.02	0.05***	0.05***	-0.02
	(2.62)	(2.58)	(0.33)	(3.21)	(3.11)	(-0.37)
PE_{t-1}	0.07**	0.07**	0.09*	0.01	0.01	-0.00
	(2.20)	(2.24)	(1.72)	(0.43)	(0.36)	(-0.15)
$Size_{t-1}$	0.62***	0.63***	0.60***	0.26***	0.27***	0.42***
	(14.44)	(13.96)	(7.79)	(9.43)	(9.74)	(8.93)
$For\ Sales_{t-1}$	0.10***	0.09***	0.04	-0.13***	-0.13***	-0.06
	(2.86)	(2.84)	(0.56)	(-5.71)	(-5.75)	(-1.47)
$Dom\ Sales_{t-1}$	0.10***	0.10***	0.04	0.10***	0.10***	0.02
	(3.33)	(3.24)	(0.62)	(5.76)	(5.67)	(0.42)
Observations	24,132	24,312	2,726	24,132	24,312	2,726
Pseudo R-Squared	0.07	0.07	0.08	0.04	0.04	0.04

Table 5

Abnormal Returns around Acquisition Announcements

Notes: This table presents results from regressing the five-day market cumulative abnormal return around the deal announcement date on firm and deal characteristics; Columns 1-3 (4-6) include the results from the analysis for foreign (domestic) deals. Columns 1 and 4 present analyses for the Compustat sample of firms; Columns 2 and 5 present analyses for the Compustat sample of firms using predicted values from BEA data; Columns 3 and 6 present analyses for the BEA sample of firms. All variables are defined in Appendix A and are standardized to have a mean of zero and a standard deviation of one, such that the coefficient measures the effect on the dependent variable given a one-standard-deviation change in each of the independent variables. The regression specification includes year, target-industry, and target-country fixed effects. T-statistics are presented in parentheses. Standard errors are clustered by firm and by year. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5 (continued)
Abnormal Returns around Acquisition Announcements

	Dependent Var: Foreign $CAR_{(-2,2)}$			*Dependent Var: Domestic $CAR_{(-2,2)}$*		
	(1) *Compustat*	(2) *Compustat/BEA*	(3) *BEA*	(4) *Compustat*	(5) *Compustat/BEA*	(6) *BEA*
$REPAT_{t-1}$	**-0.32****			**-0.06**		
	(-2.19)			**(-0.47)**		
Predicted Foreign Cash-$REPAT_{t-1}$		**-0.38****	**-0.39**		**-0.04**	**-0.10**
		(-2.30)	**(-1.27)**		**(-0.32)**	**(-0.40)**
Predicted Foreign Cash-$Controls_{t-1}$		**-0.06**	**-0.38**		**-0.03**	**0.14**
		(-0.31)	**(-0.72)**		**(-0.20)**	**(0.45)**
$Residual\ Foreign\ Cash_{t-1}$			**0.09**			**0.07**
			(0.28)			**(0.29)**
$CAR_{(-250,-20)}$	-0.39	-0.40	0.53	-0.04	-0.06	-0.50*
	(-1.62)	(-1.63)	(1.22)	(-0.25)	(-0.40)	(-1.86)
$Size_{t-1}$	-0.04	-0.05	-0.15	-0.38**	-0.40***	-0.56**
	(-0.21)	(-0.27)	(-0.28)	(-2.50)	(-2.86)	(-1.99)
MTB_{t-1}	-0.12	-0.09	-0.01	-0.14	-0.14	-0.23
	(-0.76)	(-0.60)	(-0.04)	(-0.92)	(-0.91)	(-1.56)
$Leverage_{t-1}$	0.15	0.14	-0.44	0.30	0.29	-0.07
	(0.92)	(0.91)	(-0.68)	(1.41)	(1.27)	(-0.17)
Diversifying Acquisition	0.39	0.40	0.85	-0.51	-0.49	0.37
	(0.91)	(0.94)	(1.02)	(-1.61)	(-1.55)	(0.69)
Public Target	-0.46	-0.45	-0.72	0.36	0.37	-0.34
	(-0.82)	(-0.82)	(-0.99)	(1.24)	(1.29)	(-0.77)
Hostile Deal	-0.40	-0.45	-3.00**	-3.91***	-3.93***	-1.83**
	(-0.29)	(-0.33)	(-2.05)	(-5.40)	(-5.35)	(-2.12)
Transaction Value	-0.12	-0.11	-0.60	0.42***	0.42***	1.20*
	(-0.64)	(-0.65)	(-1.31)	(2.83)	(2.85)	(1.77)
Observations	1,097	1,097	287	5,734	5,734	845
R-squared	0.09	0.10	0.18	0.02	0.02	0.036

Table 6
Analysis of the American Jobs Creation Act of 2004

Notes: This table presents analysis of the level of M&A deal activity immediately following the American Jobs Creation Act of 2004. Columns 1-2 (3-4) report the results from analyzing foreign (domestic) deal activity; Columns 1 & 3 (2&4) present results from probit (negative binomial) regressions that measure the likelihood (number) of deals occurring. The coefficients in Columns 1 and 3 are the marginal effects of the probit results, multiplied by 100%. All variables are defined in Appendix A and are standardized to have a mean of zero and a standard deviation of one, such that the marginal effect measures the percentage effect on the conditional mean of the dependent variable (i.e., the change in the probability for the probit specifications) given a one-standard-deviation change in each of the independent variables. *Z*-statistics are presented in parentheses. Standard errors are clustered by firm and by year. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Foreign Deals, 1988-2005		*Domestic Deals, 1988-2005*	
	(1) ForInd	(2) #ForDeals	(3) DomInd	(4) #Deals
Year 2005	**-0.25***	**-0.12**	**2.10****	**0.08**
	(-1.77)	**(-1.08)**	**(2.18)**	**(1.60)**
$Abnormal\ Return_{t-1}$	0.07	0.04	-0.70	-0.03*
	(0.44)	(1.13)	(-1.06)	(-1.85)
$SalesGr_{t-1}$	0.72***	0.21***	1.18***	0.09***
	(4.55)	(6.34)	(3.99)	(5.31)
$WkCap_{t-1}$	0.45***	0.11**	1.29***	0.06***
	(2.75)	(2.19)	(2.69)	(2.72)
$Leverage_{t-1}$	-2.12***	-0.66***	-8.42***	-0.57***
	(-3.27)	(-3.31)	(-7.40)	(-7.01)
MTB_{t-1}	0.48***	0.12***	1.54***	0.07***
	(4.53)	(3.76)	(3.08)	(4.63)
PE_{t-1}	0.26***	0.08**	0.19	0.01
	(2.90)	(2.45)	(1.00)	(0.65)
$Size_{t-1}$	2.19***	0.61***	3.58***	0.26***
	(13.15)	(14.86)	(6.38)	(9.52)
$For\ Sales_{t-1}$	0.45***	0.12***	-1.80***	-0.13***
	(3.64)	(3.64)	(-4.97)	(-5.94)
$Dom\ Sales_{t-1}$	0.51***	0.12***	2.11***	0.09***
	(5.03)	(3.87)	(3.61)	(5.13)
Observations	26,163	26,163	26,163	26,163
Pseudo R-Squared	0.07	0.07	0.03	0.03

Table 7
1998-2003 Analysis of Foreign Investment

Notes: This table presents the results of analyzing foreign investment behavior in the period 1998-2003. Panel A (B) includes results of OLS regressions that test the relation between a firm's repatriation tax cost (the amount of predicted cash due to repatriation tax costs) and the amount of capital expenditures scaled by total assets (the amount of R&D expense scaled by total assets). Columns 1-2 (3-4) include results for foreign (domestic) investment. The control variables are standardized to have a mean of zero and a standard deviation of one, such that the coefficient measures the percentage effect on the dependent variable given a one-standard-deviation change in each of the independent variables. Variables are defined in Appendix A. Each specification includes industry and year fixed effects. T-statistics are presented in parentheses. Standard errors are clustered by firm and by year. **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Analysis of Capital Expenditures

	Dependent Var: For CapEx		*Dependent Var: Dom Capex*	
	(1)	(2)	(3)	(4)
$\boldsymbol{REPAT_{t-1}}$	**0.10***		**-0.06**	
	(1.74)		**(-0.68)**	
Predicted Foreign Cash-REPAT$_{t-1}$		**0.12****		**-0.02**
		(2.11)		**(-0.20)**
Predicted Foreign Cash-Controls$_{t-1}$		**0.04**		**-0.30*****
		(0.61)		**(-3.59)**
$\boldsymbol{Residual\ Foreign\ Cash_{t-1}}$		**0.21*****		**-0.10**
		(4.36)		**(-1.17)**
$Abnormal\ Return_{t-1}$	0.12	0.12	0.37***	0.38***
	(0.90)	(0.96)	(3.27)	(3.00)
$SalesGr_{t-1}$	0.15*	0.15*	0.33***	0.33***
	(1.82)	(1.80)	(3.45)	(3.31)
$WkCap_{t-1}$	-0.33***	-0.31***	-0.36***	-0.39***
	(-4.78)	(-4.77)	(-4.47)	(-4.92)
$Leverage_{t-1}$	0.03	0.03	-0.23***	-0.28***
	(0.77)	(0.83)	(-3.06)	(-3.36)
MTB_{t-1}	-0.02	-0.03	0.24*	0.26**
	(-0.38)	(-0.56)	(1.90)	(2.05)
PE_{t-1}	-0.03	-0.03	0.00	-0.00
	(-0.61)	(-0.67)	(0.08)	(-0.04)
$Size_{t-1}$	-0.16**	-0.15**	0.01	-0.09
	(-2.18)	(-2.03)	(0.08)	(-0.92)
$For\ Sales_{t-1}$	0.02	-0.01	-0.31***	-0.28***
	(0.35)	(-0.22)	(-5.01)	(-4.50)
$Dom\ Sales_{t-1}$	-0.09	-0.08	0.41***	0.41***
	(-1.42)	(-1.40)	(3.92)	(3.91)
Observations	2,499	2,499	2,316	2,316
Pseudo R-Squared	0.053	0.067	0.120	0.127

Table 7 (continued)
1998-2003 Analysis of Foreign Investment

Panel B: Analysis of R&D Expense

	Dependent Var: For R&D		*Dependent Var: Dom R&D*	
	(1)	(2)	(3)	(4)
$REPAT_{t-1}$	**0.04****		**0.58*****	
	(2.26)		**(3.93)**	
Predicted Foreign Cash-REPAT$_{t-1}$		**0.03***		**0.54*****
		(1.72)		**(4.40)**
Predicted Foreign Cash-Controls$_{t-1}$		**0.08*****		**1.12*****
		(3.73)		**(4.42)**
$Residual\ Foreign\ Cash_{t-1}$		**0.06*****		**0.05**
		(3.71)		**(0.53)**
$Abnormal\ Return_{t-1}$	0.04	0.04	0.11	0.09
	(1.34)	(1.38)	(0.57)	(0.58)
$SalesGr_{t-1}$	-0.01	-0.00	-0.32***	-0.29***
	(-0.43)	(-0.31)	(-6.32)	(-7.47)
$WkCap_{t-1}$	-0.01	0.00	-0.37**	-0.29*
	(-0.36)	(0.14)	(-2.03)	(-1.78)
$Leverage_{t-1}$	-0.02	-0.01	-0.50***	-0.31**
	(-1.36)	(-0.80)	(-3.25)	(-2.05)
MTB_{t-1}	0.06**	0.05**	0.62***	0.53***
	(2.33)	(2.17)	(5.41)	(4.75)
PE_{t-1}	-0.02	-0.02	-0.10	-0.07
	(-0.92)	(-0.89)	(-1.02)	(-0.70)
$Size_{t-1}$	-0.03	-0.01	-0.28**	0.09
	(-0.92)	(-0.24)	(-2.05)	(0.66)
$For\ Sales_{t-1}$	0.02	0.01	0.18	0.06
	(0.97)	(0.26)	(1.29)	(0.48)
$Dom\ Sales_{t-1}$	-0.07***	-0.07***	-0.25**	-0.25**
	(-4.87)	(-5.03)	(-2.34)	(-2.32)
Observations	2,499	2,499	2,316	2,316
Pseudo R-Squared	0.039	0.059	0.105	0.178

Table 8
Consideration Used in Transactions

Notes: This table presents deal-level analysis of the type of consideration paid. The sample includes both cash and non-cash (hybrid and stock) deals. The tables compare the percentage of deal frequency by location (foreign vs. domestic) and by the level of a firm's repatriation tax cost (*REPAT = $0* vs. *REPAT > $0).*

	% of Deals by Type of Consideration			*% of Foreign Deals*		
Type of Deal	**Foreign %**	**Domestic %**	**Diff.**	***REPAT = $0***	***REPAT > $0***	**Diff.**
Cash	83.0%	80.2%	2.8% (p=0.105)	81.19%	85.61%	4.41% (p=0.183)
Hybrid & Stock	17.0%	19.8%		18.81%	14.39%	