FOREIGN CASH HOLDINGS AND THE INVESTMENT AND PAYOUT RESPONSE OF U.S. MULTINATIONAL CORPORATIONS TO PROVISIONS OF THE TAX CUTS AND JOBS ACT OF 2017

by

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ABSTRACT

WILLIAM SOFSKY: Foreign Cash Holdings and The Investment and Payout Response of U.S. Multinational Corporations to Provisions of The Tax Cuts and Jobs Act Of 2017
(under the direction of DR. HUGHLENE BURTON)

The passage of the Tax Cuts and Jobs Act of 2017 (TCJA) provides a unique context in which to examine the effects of U.S. taxation of foreign earnings on the behavior of multi-national corporations (MNCs). Prior to the TCJA, the U.S. levied corporate income tax on an MNC's worldwide earnings, deferred until firms repatriated the funds to U.S. The worldwide taxation and deferral until repatriation led to firms holding significant amounts of cash offshore. By 2017, there was an estimated $2.8 trillion of repatriatable funds "trapped" offshore. Prior legislation intended to encourage repatriation offered temporary "tax holiday" measures. The TCJA lowered corporate tax rates for all firms and eliminated future U.S. tax on repatriated earnings after payment of a one-time transition tax, creating a "permanent tax holiday" for foreign earnings. I examine the relationship between foreign cash holdings disclosed by MNCs in their fiscal year 2017 financial reports and their shareholder payout and investment behavior in the two years immediately following enactment of the TCJA. Similar to research into the effects of the temporary tax holidays in prior legislation, I find share repurchases in the post-TCJA period are associated with pre-TCJA foreign cash holdings. I further find that research and development and capital expenditures increase in the second year following the TCJA. These findings indicate that the foreign earnings provisions of the TCJA may have had some longer-term effects in line with its legislative intent. This contrasts with the findings of prior research and should be of interest to policymakers, particularly as the current administration considers changes to the corporate tax regime, while providing a basis for future research.

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DEDICATION

I dedicate this dissertation with love and appreciation to my wife, Donna Sofsky, for encouraging me to stay the course and pursue my doctoral degree. Without your love, patience and encouragement, this work would not have been possible.

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LIST OF ABBREVIATIONS

AJCA	The American Jobs Creation Act
ASC	Accounting Standards Codification
BEAT	base erosion anti-abuse tax
BDMR	Beyer, B.; Downes, J.; Mathis, M.; and Rapley, E. (2020)
DRD	dividends received deduction
EBIT	earnings before interest and taxes
EBITDA	earnings before interest, taxes, depreciation and amortization
ETR	effective tax rate
FDII	foreign-derived intangible income deduction
FY or FYE	fiscal year or fiscal year-end
GAAP	U.S. generally accepted accounting principles
GILTI	global intangible low-taxed income
I.R.C.	Internal Revenue Code
MNC	multinational corporation
OLS	ordinary least-squares regression
PRE	permanently or indefinitely reinvested foreign earnings
TCJA	The Tax Cuts and Jobs Act of 2017
TIFC	tax-induced foreign cash
TRA86	The Tax Reform Act of 1986
UFE	untaxed, unremitted, or undistributed foreign earnings

CHAPTER 1: INTRODUCTION

In the present study, I examine the behavior of U.S. multinational corporations (MNCs) in response to the foreign tax provisions in the Tax Cuts and Jobs Act of 2017 (TCJA)[1]. In particular, I examine the relationship of foreign cash and cash equivalent balances disclosed by U.S. MNCs in the period of enactment of the TCJA (hereafter referred to as pre-TCJA foreign cash holdings) and their shareholder payouts (share repurchases and dividends), capital expenditures, research and development expenditures, business acquisition expenditures and leverage levels in the two years immediately following enactment. I find statistically significant associations between pre-TCJA foreign cash holdings and share repurchases in both years post-TCJA. Further, I find statistically significant positive associations for pre-TCJA foreign cash holdings with research and development and capital expenditures in the second year following enactment. This suggests that there may be longer term effects of the more permanent foreign tax provisions in the TCJA than the one-year "tax holidays" in prior legislation. I do not find statistically significant relationships between pre-TCJA cash holdings and post-TCJA leverage levels or acquisitions. The findings of the present study should be interesting to researchers in the areas of tax policy and economics as well as to policymakers as it provides some insight into whether the corporate foreign earnings provisions in the TCJA may have had effects consistent with the stated policy goals of the drafters of the legislation. This may be of particular interest to current policymakers as President Biden and the current administration have expressed interest in reviewing and possibly modifying the corporate tax provisions of the TCJA. The findings of the present study offer some insight and provide a basis for further research into whether the foreign

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[1] The official name of the TCJA as enacted is "An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018" (Public Law 115-97)

earnings provisions of the TCJA have resulted in any increase in job-creating domestic investment.

The U.S. Congress passed the TCJA in December of 2017 and former President Trump signed it into law on December 22nd of that year. The TCJA affects the taxation of individuals and all forms of business organizations in the U.S. The TCJA is the most sweeping U.S. tax reform legislation since the Tax Reform Act of 1986 (TRA86).

The TCJA had several stated policy goals. Those most relevant to the present study are tax competitiveness for the U.S. vis-à-vis other countries and promoting domestic investment by U.S. companies. These objectives are primarily expected to be accomplished through lowering the statutory corporate tax rate from 35% to 21%, expanding certain accelerated depreciation deductions and converting the U.S. tax system from a worldwide system to a territorial system.

Prior to the TCJA, U.S. multinational corporations (MNCs) were subject to U.S. tax at a 35% rate on their worldwide income. In general, earnings of foreign subsidiaries were taxed when the earnings were "repatriated" in the form of dividends from those foreign subsidiaries to the U.S. owner. To avoid double taxation on foreign earnings, the tax code allowed for credits for foreign taxes paid. The U.S. tax due was equal to the U.S. tax rate applied to the worldwide taxable income less the foreign taxes paid.[2] This worldwide tax system encouraged firms to find ways to shift income to foreign subsidiaries in low tax jurisdictions and hold those earnings offshore to defer, and potentially avoid, U.S. tax. This deferral possibility created a so-called "lock-out" effect where firms retained earnings offshore and deferred repatriation, and the

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[2] In a simplified example, if a U.S. MNC earned pre-tax income of $100 in foreign subsidiaries taxed at 15% (on average across all foreign subsidiaries) it would owe $15 of tax to the foreign jurisdictions and would be subject to U.S. tax of $20 ($100*35%-$15) when those earnings are repatriated.

associated incremental U.S. tax, as long as possible. Another factor contributing to the "lock-out" effect was that U.S. Generally Accepted Accounting Principles (GAAP) financial reporting rules also permitted firms to not only defer payment of taxes until repatriation, but also the recognition of deferred tax expense in their income statements by designating some or all of their foreign retained earnings as "indefinitely reinvested" in foreign subsidiaries.

The TCJA includes three key provisions to encourage firms to repatriate earnings from foreign subsidiaries; presumably to encourage domestic investment that could result in job creation. Lowering the statutory rate removed some of the incentive to hold earnings offshore as it reduced (but in most cases did not eliminate) the incremental U.S. tax over the foreign taxes paid. There is also a permanent "participation exemption" established for dividends from foreign subsidiaries of qualifying multinational corporations (MNCs) with significant ownership and control by U.S. entities for years following the enactment of the TCJA. Lastly, the TCJA includes a "transition tax" or deemed repatriation tax on previously unremitted foreign earnings (UFE). The rates applied to these pre-TCJA foreign earnings are lower than the statutory rate both pre- and post-TCJA and are designed to encourage firms to repatriate some or all of those foreign UFE to the U.S.

The present study focuses on provisions in the TCJA aimed at encouraging U.S. MNCs to repatriate foreign earnings with the intent of having those firms increase domestic investment and employment and discouraging certain types of tax avoidance. The results of prior research indicate that many U.S. MNCs had built up higher cash balances in foreign subsidiaries as a result of previous U.S. tax policy. I examine whether firms that disclosed an accumulation of higher proportional cash balances in foreign subsidiaries prior to the TCJA deployed that foreign cash for increased shareholder payouts, capital investment, research and development,

acquisitions or debt reduction in response to the transition tax and participation exemption provisions of the TCJA.

The present study follows theory and methods from prior research examining the relation between significant U.S. tax policy changes affecting the taxation of foreign source earnings and MNC earnings repatriation, investment, payout and operating behavior. The present study is intended to extend the research in this area by applying these theories and methods to examine the effect of the foreign earnings provisions in the TCJA on MNC behavior.

There is an extensive body of research in this area prior to the enactment of the TCJA, most notably research examining the effect of the temporary tax holiday provided by the American Jobs Creation Act (AJCA) in 2004. However, the TCJA provides a current and novel context for examination of these relationships in that it is the most comprehensive tax reform since the Tax Reform Act of 1986 (TRA86) and represents a significant and permanent change to key tax provisions affecting MNCs and their foreign-derived income. The present study contributes to the literature by examining these effects in this current and novel context and how certain responses of MNCs to the TCJA differ from those documented in empirical examinations of their responses to the AJCA and the findings of preliminary analyses of the effects of the TCJA.

Much has been written in the popular press regarding the impact of the TCJA on individuals, corporations, and the U.S. economy at large. There are also several working papers currently in circulation and a few articles published in peer reviewed journals on these impacts. The findings of studies that have examined impacts to U.S. MNCs are mostly in line with the findings of the research surrounding the AJCA. However, most of this published work provides only a preliminary view of those impacts. I would suggest that sufficient time had not passed for

these studies to have enough information to draw anything other than preliminary and limited conclusions. Specifically, given that the transition tax was mandatory and unavoidable, and the rate reductions and participation exemptions are intended to be permanent, I posit that it is possible that there are some significant differences in payout, investment, and leverage management behavior in the periods after the initial post-TCJA year from what has been observed in prior research and the current body of research focused on the TCJA to date.

The TCJA was passed in late December of 2017. Many of the provisions and instructions related to the law were not finalized until 2018, the tax year for which the law was effective. The Financial Accounting Standards Board (FASB) and Securities and Exchange Commission (SEC) had to hastily respond with guidance on making estimates of the TCJA's impact for inclusion in firms' financial reporting for fiscal 2017 and subsequent guidance for 2018 and later. Given that firms did not have sufficient time to assess the impact of the TCJA on their specific tax position and had to hastily attempt to prepare estimates for 2017, I posit that they may not have had an opportunity to do more holistic tax planning until sometime in 2018. This limited time horizon most likely resulted in affected firms focusing on some, but not all provisions of the TCJA and addressing only the most urgent or easily addressed issues in 2018. As such, any analysis that relies on archival financial data that does not include financial information for fiscal years ending during 2019 and beyond may not capture important information about differences in response to the more permanent TCJA provisions from the temporary aspects of prior tax law changes. The disclosures included with the fiscal year 2019 financial statements should provide more insight into the ultimate response of firms to the TCJA provisions of interest affecting MNCs.

The U.S. had been considering changes to tax rules and a shift to a more territorial system for a few years prior to the enactment of the TCJA (Joint Committee on Taxation, 2015) in an

attempt to encourage repatriation of capital being held offshore to make it available for domestic investment and to ensure that the U.S. was competitive with other countries in attracting investment. While a temporary tax holiday was offered in the AJCA with similar policy objectives, empirical evidence suggests, overall, these objectives were not met. While the tax holiday resulted in approximately $312 billion in foreign earnings being repatriated (Redmiles, 2008), these repatriated funds were used primarily for share repurchases (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala, Foley, & Forbes, 2011), and not for domestic investment; except in certain narrowly defined populations (Dong & Zhao, 2018; Faulkender & Petersen, 2012). Given the results of these prior studies, the examination in the present study of whether or how MNC responses to the repatriation tax provisions of the TCJA are different from those related to the AJCA could be of interest to researchers in the areas of tax or accounting as well as regulators and policymakers.

There is evidence that there was a substantial amount of previously untaxed foreign retained earnings held offshore by subsidiaries of U.S. firms just prior to the enactment of the TCJA. Researchers at the Institute for Tax and Economic Policy (ITEP) and Audit Analytics estimated that there were $2.6 and $2.8 trillion, respectively, just prior to enactment of the TCJA (McKeon, 2018; Phillips, Gartner, Robins, & Surka, 2017).

Aggregate data from the U.S. Bureau of Economic Analysis (BEA) indicates that $1.37 trillion was repatriated in the 9 quarters reported after the enactment of the TCJA through the first quarter of 2020. This is about $1.0 trillion more than a rolling 9 quarter average amounts repatriated from Q1 2014 to Q4 2017 but only about half of the pre-TCJA estimated amounts of previously untaxed foreign earnings. There is also evidence of an increase in share repurchases in 2018 which has been highlighted in the popular and business press (Menton, 2019;

Smolyansky, Suarez, & Tabova, 2019; Tankersley, 2018a; Valetkevich, 2018). Some preliminary empirical research has found an association between this increase in repurchases and the foreign earnings provisions of the TCJA (Bennett, Thakor, & Wang, 2019; Beyer, Downes, Mathis, & Rapley, 2019).

However, the prospect that the effect of the TCJA could be longer tailed than the temporary tax holiday of the AJCA can already be seen in the aggregate data available through Q1 of 2020. Data from the BEA show that there was a substantial increase in repatriation of funds in the first quarter of 2018, the first quarter post-TCJA, vis-à-vis the quarterly average for the prior two years. These higher-than-historical-average repatriations persist, although to varying degrees, through Q1 of 2020 (see figure 1). This can be contrasted with the spike seen in 2005, the primary year for qualified repatriation under the AJCA, after which repatriations persist at slightly more than pre-AJCA levels and remain there until 2018 (see figure 1).

[Insert Figure 1 Here]

The unique context provided by the one-time "deemed repatriation" transition tax coupled with a permanent shift to a mostly territorial tax system with no incremental tax on repatriation thereafter embedded in the TCJA, provides a setting for re-examining the theoretical propositions regarding MNC behavior in response to U.S. tax policy and the empirical findings of prior research in this area. The present study exploits this unique context and extends this theory and the extant literature by examining U.S. MNC response to the changes in taxation of foreign earnings in the TCJA.

The present study should be of interest to researchers in tax and accounting and to policymakers. For policymakers in particular, it is worth examining if the stated policy objectives of the repatriation tax provisions in the TCJA are achieved in whole or in part. The

examination of the timing of the reaction of MNCs to the TCJA should also be interesting for policymakers given the more permanent nature of the foreign tax provisions in the TCJA compared to those of prior legislation.

The transition tax in the TCJA is mandatory and unavoidable while the participation exemption is designed to be permanent. There also aren't any expressly approved or disallowed uses for the repatriated funds to benefit from the tax reduction. These provisions represent a significant difference from the AJCA temporary tax holiday where the dividend received deduction was temporary and where there were prescribed permitted and non-permitted uses of the repatriated funds. These differences could lead to significant differences in the magnitude and timing of repatriations. Given that the transition tax on previously unremitted foreign earnings is unavoidable and mandatory and the participation exemption for future dividends from foreign subsidiaries permanently eliminates U.S. tax on those dividends, firms are not under any time pressure to repatriate and reinvest any of their foreign cash. I believe that certain potential uses, such as capital expenditures, R&D investment, acquisitions, or debt reduction may take longer for firms to execute, which could lead to results that differ from the findings in prior research. The present study extends the currently published literature examining the effects of the TCJA by including data from financial reporting periods not previously examined in what have so far been preliminary studies of the TCJA. Specifically, the present study includes data from two years leading up to the enactment of the TCJA and two full years after enactment.

The remainder of this dissertation is structured as follows: Chapter 2 presents a review of the relevant literature and development of the hypotheses to be tested. In Section 2.1, I provide a brief description of the key provisions of the TCJA as it affects corporate taxation. The focus is on key provisions affecting multinational corporations (MNC) focused on corporate tax rates, tax

on repatriation of foreign earnings, and taxation of intangible assets. In Section 2.2, I present a brief review of the U.S. taxation of foreign corporate earnings prior to the TCJA for the purpose of highlighting key historical events relevant to the present study. In section 2.3, I present a discussion of U.S. GAAP financial reporting rules regarding current and deferred income taxes both pre- and post-TCJA. Section 2.4 provides a review of relevant theory underlying the present study and prior research on the effects of major tax legislation on MNC behavior. The review of the literature focuses on studies examining the effect on U.S. taxation of foreign earnings, capital investment, income shifting and foreign earnings repatriation by MNCs. Of particular interest, is an extensive body of research into the "lockout effect" of the pre-TCJA worldwide tax system and effects of a temporary "tax holiday" for repatriated foreign earnings enacted with the AJCA in 2004. The previously mentioned "deemed repatriation" transition tax and the participation exemption constitute a "permanent tax holiday" for certain foreign earnings of U.S. MNCs which can be contrasted with the setting of the "temporary tax holiday" for repatriated foreign earnings in the AJCA. Section 2.4 closes the review of the extant research with a review of research focused on the TCJA, the expected effects of its international provisions and the currently limited number of empirical analyses examining the effects of these provisions. The intent of the present study is to extend this body of empirical research. Section 2.5 presents the hypotheses for the present study including the theoretical and empirical underpinnings and rationale for those hypotheses.

Chapter 3 presents the research design, sample selection, and data for the present study, including a detailed description of the variables for the models and the methods employed in the tests of the hypotheses.

Chapter 4 presents the results of the tests of the hypotheses and supplemental analyses. Chapter 5 provides a discussion of the results and their implications as well as limitations in the present study and opportunities for future research.

CHAPTER 2: LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Review of relevant U.S. tax and financial reporting provisions

2.1 a) Key provisions of the TCJA affecting U.S. MNCs

Decreased corporate tax rates

As regards corporate taxation, the main feature of the TCJA is the reduction of the U.S. corporate tax rate from 35% to 21%. This represents a significant reduction in the U.S. tax rate but is still higher than the general statutory corporate tax rate in many countries, such as Ireland which has a 12.5% corporate tax rate.

Shift from worldwide to territorial tax system

While the change in tax rates is certainly the most significant change for corporate taxpayers, the provisions in the TCJA of primary interest to the present study are those converting the U.S. tax code from a worldwide system to a "modified" territorial system.

Under a worldwide system, MNCs are taxed by their home country at home country rates on all of their worldwide taxable income, no matter where that income is earned or derived. Under a territorial tax system, earnings are taxed by host countries and there are no additional income taxes imposed by the home country. Most countries following worldwide systems allow either tax credits or deductions for foreign taxes paid. Prior to enactment of the TCJA, the U.S. was the last member of the G-7 following a worldwide system.

Pre-TCJA worldwide U.S. tax system

Prior to the TCJA, U.S. corporations were subject to a tax on their worldwide earnings and paid tax at the U.S. tax rate on ordinary income for any repatriation of earnings from a

"controlled foreign corporation" (CFC)[3] with offsetting foreign tax credits (FTC) for foreign

taxes paid. Firms could defer tax on foreign earnings until they were repatriated in the form of

dividends to their U.S. parent companies.

This system resulted in full tax deferral on foreign earnings until repatriation. At the same

time, the U.S. generally accepted accounting principles (GAAP) permitted a delay of recognition

in financial reports for current or deferred tax expense on foreign earnings that were designated

as permanently reinvested (PRE)[4] in foreign operations. The avoidance of U.S. tax until

repatriation and the opportunity to delay expense recognition through the PRE designation led to

many MNCs holding cash and assets "offshore" from a U.S. tax perspective (Foley, Hartzell,

Titman, & Twite, 2007; Krull, 2004). This behavior has been referred to by some as the "lockout

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[3] A controlled foreign corporation (CFC) is any foreign corporation in which more than 50 percent of the total combined voting power of all classes of stock entitled to vote is owned directly, indirectly, or constructively by U.S. shareholders on any day during the taxable year of such foreign corporation or more than 50% of the total value of the stock is owned directly, indirectly or constructively by U.S. shareholders on any day during the taxable year of the corporation.
    A U.S. shareholder is a U.S. person (defined in IRC 957(c)) who owns directly, indirectly, or constructively 10 percent or more of the total combined voting power of stock entitled to vote or 10 percent or more of the total value of all classes of stock entitled to vote in a foreign corporation. IRC 958(a) provides rules for determining direct and indirect stock ownership of a corporation. IRC 958(b) provides that the constructive ownership rules of IRC 318(a) apply to the extent that the effect is to treat a U.S. person as a U.S. shareholder or a foreign corporation as a CFC. (source: https://www.irs.gov/irm/part4/irm_04-061-007)
    [4] Accounting Standards Codification topic 740 (ASC 740) has a presumption that all undistributed earnings of a subsidiary will eventually be transferred to the parent entity (ASC 740-25-3). However, ASC 740-30-25-17 permits an exception to this presumption if sufficient evidence shows that the subsidiary has invested or will invest the undistributed earnings indefinitely or that the earnings will be remitted in a tax-free liquidation. A parent entity shall have evidence of specific plans for reinvestment of undistributed earnings of a subsidiary which demonstrate that remittance of the earnings will be postponed indefinitely. These criteria required to overcome the presumption are sometimes referred to as the indefinite reversal criteria.
    These indefinite reversal criteria are referred to as "permanently reinvested earnings" (PRE) in most of the academic literature reviewed for this paper. Consistent with prior research, the term PRE will be used to signify these indefinitely reinvested earnings in the present study.

effect" of U.S. tax and financial reporting policy (Clemons & Kinney, 2009; Graham, Hanlon, & Shevlin, 2010).

The Participation Exemption for Repatriated Foreign Earnings

The newly revised Internal Revenue Code (I.R.C.) section 965 and associated updated regulations detail the provisions under the TCJA regarding a "participation exemption" for the taxation of dividends from foreign subsidiaries for tax years beginning on or after January 1, 2018 and the transition tax for prior years' foreign income not previously taxed. The participation exemption under IRC Sec. 965 allows U.S. MNCs to exclude dividends received from qualified foreign subsidiaries or affiliates from U.S. taxable income for fiscal years beginning on or after January 1, 2018. Foreign personal holding company income (FPHCI) under the Subpart F rules continues to be included in U.S. taxable income in the year earned and the associated tax offset by FTC attributable to that income[5].

To transition to the new system, the TCJA included a provision requiring a "transition tax" on post-1986 foreign earnings for years up to and including fiscal 2017, sometimes referred to as the "deemed repatriation tax". U.S. shareholders must pay a transition tax on the untaxed foreign earnings (UFE) of certain "specified foreign corporations" (SFC)[6] as if those earnings had been repatriated to the United States. The new tax applies to the last taxable year of any SFC

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[5] FPHCI is defined as part of Subpart F income in I.R.C section 952. FPHCI generally includes a CFC's income from dividends, interest, annuities, rents, royalties, net gains on dispositions of property, and other forms of "passive" income. FPHCI is included in taxable income (and therefore taxed) in the year in which it is earned, regardless of when it is repatriated.
While there were significant changes to certain aspects of the Subpart F rules in the TCJA, the rules regarding FPHCI were left substantially unchanged except for an attribution rather than a pooling approach for FTCs.
[6] A "specified foreign corporation" means either a controlled foreign corporation ("CFC"), or a foreign corporation (other than a passive foreign investment company), that is not also a CFC which has a United States shareholder that is a domestic corporation.

beginning before January 1, 2018. The top transition tax rate is 15.5% for undistributed foreign earnings (UFE) held in cash or equivalents and 8% for UFE held in other asset categories. These rates are lower than the pre- and post-TCJA corporate tax rates and may be partially offset by foreign tax credits. Per IRC Sec 965, the one-time transition tax is includible in the U.S. shareholder corporation's tax return for the year in which the SFC's last fiscal year beginning before January 1, 2018 is included and in the provision for income taxes in the financial statements for that fiscal year (fiscal year 2017 for the purposes of the present study). Payment can be made in installments over eight years, but financial statement recognition of the tax expense may not be deferred. The amount of UFE subject to the transition tax is determined in accordance with IRC Sec. 965(a). The deemed repatriated "Section 965(a) earnings amount" is the greater of the UFE at November 2, 2017 or December 31, 2017, regardless of the SFC's fiscal year end. Because these dates are so close to the date the TCJA was enacted and they are fixed and not dependent on companies' fiscal year ends, MNCs were not able to use tax planning or other strategies to reduce their transition tax. For calendar year filers, the tax was be included with their 2018 tax return.

Firms who qualify for the participation exemption, after accounting for the transition tax, are able to repatriate pre-2018 UFE and any future foreign earnings to the U.S. without any further tax[7]. The 15.5% and 8% transition tax rates on pre-2018 UFE, which are lower than the incremental U.S. tax rate that would have been paid pre-TCJA, and the shift to a more territorial

[7] That is provided they are not also subject to the global intangible low-taxed income (GILTI) net of foreign-derived intangible income (FDII) deduction, or base erosion anti-abuse tax (BEAT) provisions of the TCJA.

system in the TCJA through the participation exemption create a sort of "permanent tax holiday" as regards U.S. tax on repatriation of foreign earnings.

[Insert Figure 2, Table from Tax Policy Center (Toder, 2018) here.]

Anti-avoidance and income shifting measures: GILTI, FDII and BEAT

The TCJA includes certain provisions aimed at discouraging tax avoidance and income shifting by U.S. MNCs. These include a tax on the global intangible low-taxed income (GILTI) net of foreign-derived intangible income (FDII) deduction, and a base erosion anti-abuse tax (BEAT). The provisions for GILTI and FDII can be found in I.R.C. sections 245A and 250.

While a detailed discussion of these provisions is beyond the scope of this study, it is worth noting that for MNCs subject to GILTI, FDII and BEAT, these provisions offset some of the benefit provided by the participation exemption. It is also worth noting that since the calculation of these additional taxes are based on global balances of tangible fixed assets, they may actually encourage investments in fixed assets abroad rather than in the U.S. (Dharmapala, 2018; Gravelle & Marples, 2018).

2.1 b) The AJCA and the foreign earnings "tax holiday"

The AJCA was passed by Congress and signed into law by President George W. Bush in October of 2004. The key provisions of the AJCA were included in I.R.C. section 965, which has since been amended by the TCJA. Brumbaugh (2006) provides an excellent summary of the legislative history of the AJCA and it key provisions. One of the key stated policy goals of the AJCA was also to incentivize firms to invest in job creating capital projects in the U.S. Of particular interest to the present study and most of the extant literature, was a one-year 85% foreign "dividends received deduction" (DRD) for "qualifying extraordinary dividends" from a

"controlled foreign corporation" (CFC)[8]. The DRD had the effect of temporarily lowering the U.S. tax rate on repatriated earnings to 5.25% (15% of the 35% statutory rate) resulting in a temporary "tax holiday" for dividends from foreign affiliates. The DRD was designed to encourage repatriation of foreign earnings and cash, with the goal of spurring domestic investment in activities that would benefit the U.S. economy and workers.

To take advantage of the DRD, firms had to file a Domestic Reinvestment Plan. The subsequent guidance provided by the IRS enumerated which types of investments were permitted and which were not. Permitted uses included hiring of new employees or training of existing staff, increase in the employees' salary or benefits, excluding executives, research and development (R&D) conducted in the U.S, investments in infrastructure (property, plant and equipment or systems), intangible property and other capital investments, certain types of debt repayment, advertising or marketing, and acquisitions of business entities (foreign or U.S.). Investments that were not permitted included executive compensation, intercompany transactions, shareholder distributions, stock redemptions, portfolio investments, local, State or Federal tax payments and purchases of Treasury bills, and municipal or corporate bonds (Brumbaugh, 2006; Redmiles, 2008). Because the DRD directly resulted in lower reported tax expense in MNCs' financial statements, the amount repatriated subject to the DRD was required to be disclosed in the income tax footnote in the reporting years affected.

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[8] A CFC is one in which U.S. shareholder entities own at least 50% of the voting interest either directly, indirectly, or constructively, and where each owner owns at least a 10% share. Qualifying extraordinary dividends were those that exceeded the average dividends from the corporation's CFCs during a "base period" including the five years prior to the AJCA, excluding the highest and lowest years. The 85% dividends received deduction was available for either the tax year immediately preceding or the first tax year after the enactment of the AJCA (Clausing, 2005).

This "tax holiday" and the associated required disclosures, afforded researchers a unique opportunity for a sort of "natural experiment" examining the effect of tax policy changes on MNC behavior. The fact that the tax change was temporary allowed an event study style of examination of firms' behavior in the period before the AJCA, in the period when the tax change was anticipated just prior to the effective date, during the tax holiday and then afterward.

2.1 c) Accounting and Financial Reporting for the effects of the TCJA

The U.S. GAAP financial reporting and disclosure of income taxes, including the effects of tax changes, is prescribed in Accounting Standards Codification (ASC) topic 740, *Income Taxes*. ASC 740-10-25-47 requires that deferred tax impacts for tax law changes should be reflected in the year the new tax law is enacted. Given the fact that the TCJA was signed on December 22, 2017 and took effect on January 1, 2018, standard setters had very little time to provide guidance to companies related to the financial reporting requirements for calendar year 2017 statements. In response, the SEC issued Staff Accounting Bulletin (SAB 118) (Securities and Exchange Commission Staff, 2017) on December 22, 2017 recognizing that there were aspects of the TCJA for which a company may not have the information necessary to complete the calculation of the effects of the tax law changes on their current or deferred tax expenses. SAB 118 indicated that a company should include and disclose the amount of any effects for which calculations could be completed and include estimated "provisional" amounts for the any effect in the financial statements for the period that includes December 22, 2017. In cases where companies cannot provide provisional amounts, they must disclose that fact. SAB 118 allowed for a "measurement period" for companies to complete their calculation and report the effects of the TCJA. "The measurement period begins in the reporting period that includes the Act's enactment date and ends when an entity has obtained, prepared, and analyzed the information

that was needed in order to complete the accounting requirements under ASC Topic 740" (Securities and Exchange Commission Staff, 2017), not to exceed one year from the enactment of the TCJA. For companies with UFE at November 2 or December 22, 2017, the transition tax most likely caused an increase in their reported effective tax rate (ETR) for fiscal 2017, many companies (particularly calendar year companies) needed to estimate these effects with a "true-up" measurement period adjustment in fiscal 2018. (S. Chen, Erickson, Harding, Stomberg, & Xia, 2019; Financial Accounting Standards Board, 2018; Securities and Exchange Commission Staff, 2017) S. Chen et al. (2019) sampled 121 calendar year reporting companies and found that 100% of their sample provided estimates for 2017 and that the companies' 2017 estimates were generally accurate and, on average, measurement period adjustments were not material.

While the deferred tax effects of the reduced corporate tax rate, transition tax (undiscounted) and participation exemption were required to be estimated, where possible, and included in calendar year 2017 or non-calendar fiscal year ending during 2018, the effects of GILTI, FDII and BEAT were only reported as components of current tax expense in fiscal years in which the MNC incurred those taxes. (Financial Accounting Standards Board, 2018, 2019, 2020; Securities and Exchange Commission Staff, 2017)

2.2 Theoretical Background and Literature Review

What follows is a brief review of the literature relevant to the present study starting with the theoretical underpinnings through key studies examining the effects of prior U.S. tax policy regarding foreign earnings on MNC behavior, including the "lockout effect". That is followed by a review of key studies examining the effects of the temporary tax holiday afforded by the AJCA on foreign earnings repatriation and the behavior of firms who repatriated earnings contemporaneously with, and presumably in response to, that legislation. Finally, I review some

of the key literature so far regarding the TCJA, which my proposed study is expected to build on and extend.

2.2 a) Key theoretical underpinnings for examining tax effects on MNC behavior

Most of the prior literature looking at tax law changes and/or tax related incentives and resultant behavior by MNCs finds its underpinning in a few key theoretical works from the finance and economics disciplines. The decision by a firm of whether to repatriate foreign earnings to redeploy it for uses in the home country or for payouts to owners is grounded in internal capital markets theory (Gertner, Scharfstein, & Stein, 1994; Stein, 1997). A full review of internal capital markets theory is beyond the scope of this paper and I would refer readers to Busenbark, Wiseman, Arrfelt, and Woo (2017) for a complete review of this theory and its origins. I do, however, briefly trace the origins of that theory from prior works in the field of finance, followed by a short review of the main premises of internal markets theory through the lens of Busenbark et al. (2017).

In 1983, S. C. Myers, the president of the American Finance Association at the time, first presented and then published "The Capital Structure Puzzle" (Myers, 1984). In it, Myers introduces two hypotheses or "frameworks" for thinking about capital structure. The first, he calls the "static trade-off framework" in which the firm sets a target capital structure or debt-to-value ratio and works toward it. The other he calls the "old-fashioned pecking order framework" where the firm prefers internal financing over external financing and prefers issuing debt over issuing equity if it goes to the financial market for financing. In the pecking order framework, the firm does not have a target debt-to-value ratio. (Myers, 1984, p. 576)

The static trade-off framework stems from the theories of Miller and Modigliani, first published in their seminal work "The Cost of Capital, Corporation Finance and the Theory of

Investment" (Modigliani & Miller, 1958). These are widely referred to as the Miller-Modigliani

theorems and are still included today in most corporate finance textbooks. Miller and Modigliani

first posited that, assuming efficient markets and perfect information, firms' choice of capital

structure, the mix of debt versus equity financing, is not particularly relevant to the value of the

firm. In an update to their theory (Modigliani & Miller, 1963), they introduce the idea that the

"tax shield" offered by the deductibility of interest costs on debt financing increases after-tax

cash flow, which in turn can increase the firm value which is based on an estimate of the present

value of future cash flows. Investors should choose to invest in a firm with a capital structure or

debt to equity mix that optimizes future cash flows. This would seem to favor debt over equity

financing while balancing the risk and cost of bankruptcy with the tax benefits of debt financing.

Miller later updated this theory in his "Debt and Taxes" paper (Miller, 1977) wherein he argues

that managers' choice for debt financing is limited not only by bankruptcy and agency costs, but

also by the aggregate demand for debt in the markets. Miller (1977) argues that, in the

equilibrium achieved by efficient markets with full information, the corporate income tax

advantages of debt are offset, in whole or in part, by the tax cost borne by investors. He thus

contends that "even in a world in which interest payments are fully deductible in computing

corporate income taxes, the value of the firm, in equilibrium will still be independent of its

capital structure (Miller, 1977, p. 262)."

Myers (1984) asserts that Miller and Modigliani's arguments and the stream of research

that followed them fall short in explaining firm-level capital structure choices. Myers argues that

the pecking order framework is at least as good at explaining firms' choices related to capital

structure choices and its impact on share prices as the static trade-off framework, if not better.

The static trade-off theory would lead to the presumption that firms with higher statutory tax

rates would favor debt financing over firms with lower rates or other deductible net operating losses. It would also hold that, given the real and reputational costs of bankruptcy that, ceteris paribus, riskier firms ought to borrow less. The assumption that firms would prefer debt over equity financing indicates to investors that firms will only want to issue equity when it is over-priced vis-à-vis debt. Investors on the other hand, would know this and would only be willing to purchase equities if the firm has exhausted its capacity to issue debt such that issuing more would become too costly. This asymmetric knowledge between issuers and investors forces firms into a pecking order framework in which firms will prefer internal financing over external. Because of this knowledge asymmetry, when the firm has exhausted its debt capacity, both debt and equity are expensive vis-à-vis internal financing sources, leading the firm to a capital structure choice that prefers internal over external sources. This preference for internal financing to fund operations and capital projects may explain why firms might use internal transfer payments, including repatriating foreign earnings, to fund operations or capital projects with higher returns after accounting for the tax impact of repatriation.

In another important theoretical work, M. C. Jensen (1986) addresses agency costs associated with managers' decisions regarding capital structure choice and the decision to use internal capital and free cash flow to fund operations or invest in capital projects rather than distributing that capital to shareholders. Jensen (1986) posits that since managers' interests may be more aligned with growing the firm and continuing operations, they have an incentive to invest in operations or capital projects, even when those investments produce negative net present values when discounted at the firm's cost of capital. This is misaligned with shareholders' interests, which are to invest their capital with firms or in securities offering the

highest return on that capital, other things being equal. Jensen's free cash flow theory asserts that these agency costs are highest when free cash flow is highest.

In theory, if managers' interests were aligned with investors', managers of firms with higher free cash flow would return capital to investors whenever there are no operations or capital projects available to them that have prospective returns higher than their cost of capital, the target return investors demand. Further, given evidence that the payment or announcement of dividends or share repurchases are positively associated with increases in share price, Jensen (1986) asserts that a firm could enhance value for investors by issuing more debt. He argues that issuing debt essentially creates a promise to pay out future cash flows. Issuing debt and using the proceeds to payout or announce share repurchases or dividend increases would, in theory, be value creating.

However, Jensen's examination of leveraged buyouts of the early 1980s and diversification programs and takeovers in the oil and gas industry in the 1970s and early 1980s provided evidence that managers made value-destroying decisions by investing free cash flow in lower returning activities rather than returning capital to shareholders. Jensen asserts that his theory of agency costs and free cash flows may explain this behavior.

Jensen (1986) focused his theory on mergers and acquisitions, which he refers to as "corporate takeovers". He states: "Free cash flow theory predicts which mergers and takeovers are more likely to destroy, rather than to create, value; it shows how takeovers are both evidence of the conflicts of interest between shareholders and managers, and a solution to the problem. Acquisitions are one way managers spend cash instead of paying it out to shareholders. Therefore, the theory implies managers of firms with unused borrowing power and large free cash flows are more likely to undertake low-benefit or even value-destroying mergers.

Diversification programs generally fit this category, and the theory predicts they will generate

lower total gains. The major benefit of such transactions may be that they involve less waste of

resources than if the funds had been internally invested in unprofitable projects" (Jensen, 1986,

p. 328) However, the theory of agency costs and free cash flow can be applied in a number of

settings where free cash flow is generated.

Harford (1999) finds explicit support for the free cash flow hypothesis by developing a

base-line model of normal cash reserves a firm would hold. He used this model to identify cash-

rich firms in a sample of U.S. corporations for the period between 1950 and 1994. He then

examined the investment behavior of these cash rich firms, particularly acquisitions and the

effect on firm value. The author found that cash-rich firms made more value-destroying

acquisitions than non-cash-rich firms. More recent studies have provided further evidence of this

agency cost effect in the context of U.S. MNCs with excess foreign cash holdings and their

relation to repatriation tax costs (Edwards, Kravet, & Wilson, 2016; Hanlon, Lester, & Verdi,

2015; Harford, Wang, & Zhang, 2017). The agency cost effect embedded in Jensen's free cash

flow theory is relevant to the present study in the context of firm behavior following the

enactment of the TCJA in that tax cuts generate free cash flow for the firms that benefit from

them and the agency problem may influence whether and how firms take advantage of those tax

cuts and their decisions regarding reinvestment or distribution of the resultant fee cash flow.

The theories and propositions above intertwine in what is referred to as internal capital

markets theory. Capital allocation is the process by which managers of multidivisional firms,

including multinational firms by definition, allocate finite financial capital resources to operating

units or projects. Internal capital markets exist in that managers of business units or projects

must compete for these finite capital resources. Internal capital markets are considered to be

efficient when decision makers allocate capital in a way that maximizes the value of the firm. Internal capital markets encompass both capital allocation and evaluation of the costs or benefits of using internal capital versus external capital to fund investment. Busenbark et al. (2017) indicate that while the terms are often used interchangeably, it is important to distinguish capital allocation efficiency from internal capital market efficiency. Capital allocation efficiency involves evaluating each business unit separately and deciding how to deploy capital based on their return prospects. Internal capital market efficiency involves evaluating prospective investments in comparison to how external capital providers would evaluate the same investment as a stand-alone entity. (Busenbark et al., 2017). External capital markets are assumed to be efficient, thus, comparing capital investment opportunities in this way results in a de facto efficient investment of internal capital. Taxes are an important consideration in these evaluations as they represent a financial market friction (Degennaro & Robotti, 2007) that influence the cost of employing either internal or external capital market resources available to the firm.

The effect of taxes on capital markets choices

Fama and French (1998) attempted to isolate the tax effects of various financing choices on firm value. The authors developed a cross-sectional regression approach that, while unsuccessful in isolating tax effects on firm valuation and tending to support Miller's (1977) hypothesis, demonstrated the "richness of information about value in financing and investment decisions (Fama & French, 1998, p. 821)" Their analyses showed the significance of dividend payments, leverage, capital investment and R&D investment as predictors of firm value. For this reason, their model has become a widely used standard for similar analyses and was employed in, to some extent, in a number of the studies cited in this paper.

Existing theory regarding the effect of tax rates on multinational firms' decisions regarding repatriation of foreign earnings or the location for investment comes from Hartman (1985), who indicates that firms have an incentive to invest abroad whenever the after-tax return is greater in the foreign affiliate than the after-return in the U.S. (home country) parent. Conversely, firms will repatriate only when the after-tax return in the home country is greater than the after-tax return that can be earned in the foreign affiliate. Hartman (1985) asserts, somewhat counterintuitively, that for firms with "mature" foreign affiliate operations, those than can fund their investment from retained earnings without contributions from the parent, domestic tax rates are not relevant in determining whether to make a foreign investment. Only the after-tax return based on the foreign tax rate matters. This assertion assumes that eventual repatriation of foreign earnings and payment of any U.S. tax is inevitable and unavoidable, and is also contingent on the ability of the firm to defer payment of domestic taxes on the foreign earnings and the ability to avoid double taxation through either a foreign tax credit or deduction[9]. Hartman (1985) further shows that this holds true whether the foreign tax paid can be credited or if there is a deduction for foreign taxes against the domestic taxes on repatriation. As mentioned above, however, this assertion is contingent on the firm being able to defer domestic tax until repatriation.

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[9] The author put forth a parsimonious model to demonstrate this point wherein the after-tax domestic return is represented by $(1-t)(1+r)$ and the foreign after-tax return is $(1-t^*)(1+r^*)$ where t and t* represent the domestic and foreign tax rates, respectively and r and r* representing the respective returns on prospective investments. Whenever $t>t^*$, if a firm repatriates foreign earnings, the parent will receive $(1-t)/(1-t^*)$ after-tax for every dollar repatriated, leaving the firm with less funds to reinvest. Therefore, whenever $(1-t^*)(1+r^*)>(1-t)(1+r)$, the firm should invest abroad using foreign retained earnings and not repatriate.

Further, while Hartman's propositions were cited in almost all studies examining the effect of tax rates on MNC behavior prior to the TCJA, it is important to note that Hartman's assertions do not hold for "immature" firms that do not have the ability to defer repatriation indefinitely. Further, as Clausing (2005) points out, Hartman's propositions depend on an assumption that the earnings must eventually be repatriated, and the U.S. tax incurred, at some point over the n-period time horizon and does not anticipate a permanent tax holiday. Given that the transition tax and the participation exemption in the TCJA are intended to be permanent, Hartman's propositions are less relevant in this setting, other than to the extent that firms may anticipate that future tax law changes could increase the U.S. tax on foreign earnings at some point in the future.

Several empirical studies have extended Hartman's theory and, despite his assertion that the domestic tax rate is not relevant in the firm's investment decision, most studies have found evidence that the frictional cost of having a domestic tax on repatriation did affect firms' behavior and repatriation decisions. In particular, it affects the amount of cash or financial assets that firms hold offshore (De Simone, Piotroski, & Tomy, 2017; Foley et al., 2007; Laplante & Nesbitt, 2017; Waegenaere & Sansing, 2008), their dividend payout policies (Desai, Foley, & Hines, 2001, 2007), where they borrow and hold their debt (Altshuler & Grubert, 2003; Mills & Newberry, 2004), whether or when to repatriate based on tax rate differences and tax credit position (deficit or excess) (Hines Jr & Hubbard, 1990; Rego, 2003), the firm's size (Blouin & Krull, 2009; Clemons & Kinney, 2008), financial reporting considerations (Blouin, Krull, & Robinson, 2012; Graham, Hanlon, & Shevlin, 2011; Graham, Hanlon, Shevlin, & Shroff, 2014; Krull, 2004; Shaheen, 2014), and their expectations or assumptions regarding future tax policy (Clausing, 2005; De Simone et al., 2017).

2.2 b) Research into the effects of U.S. tax law provisions on MNCs

What follows is a brief review of the literature on the effects of the U.S. worldwide taxation system on MNC income shifting, earnings repatriation and investment behavior. This includes a review of studies examining these effects in the unique setting of the tax holiday afforded by the AJCA. This is followed by a review of the research to date on the TCJA and its effects on U.S. MNCs.

TRA86 policy effects on MNC behavior

Readers are directed to J. R. Hines, Jr. (1996) for a comprehensive review and synthesis of the most significant extant literature on the effect of TRA86 on MNCs in the first decade post-TRA86. I provide a brief review here of some of the most cited works that focused on the TRA 86 as it related to U.S. MNCs.

Harris (1993) examined the behavior of U.S. and MNC in relation to capital location and income shifting as a result of tax rate and deduction provisions in the TRA86 both separately and in tandem. Harris (1993) predicted and found that MNCs would shift income into the U.S. and capital investment away from the U.S. in 1987 and 1988 as a result of the provisions of the TRA86 with the effects magnified for firms with greater financial flexibility. J. R. Hines (1994) examined the impact of provisions in TRA86 that reduced tax incentives for investing in research and development (R&D) activities in the U.S. on the location of MNCs R&D investments post-TRA86. The author found, however, there was very little marginal change in non-U.S. versus U.S. R&D investment post-TRA86. This finding was primarily due to the interaction of the lower corporate tax rates in the TRA86 leading some MNCs to move from a foreign tax credit (FTC) deficit (foreign taxes paid were less than U.S. statutory rates applied to foreign income) to having excess FTC (foreign taxes exceeding U.S. on foreign income).

In a study examining the effective tax rates (ETR) for 19,737 firm years from 1990 to 1994 for 5,379 U.S. domestic and MNCs, S. O. Rego found that larger firms had higher worldwide ETR, but that firms with higher worldwide pre-tax income had lower ETR and firms with more extensive foreign operations had lower ETR than those with less foreign operations (Rego, 2003). The author concluded that her results support the notion that large firms with high worldwide taxable income have the greatest financial flexibility or capacity and the greatest incentive to do extensive tax planning. For firms with foreign operations, having foreign affiliates in more countries further enhances these firms' ability to use their corporate structures and the locations of their foreign affiliates to avoid tax. Rego (2003) demonstrates the salience of examining firm-level ETR and looking at firm size and financial flexibility, which should enhance a firm's opportunities for tax planning and avoidance, when examining the impact of tax reform or policy on corporate behavior and for MNCs in particular.

Lastly, in a study examining the effect of tax incentives on the level and location of income reporting by large foreign controlled corporations (FCC), Mills and Newberry (2004) found that these MNCs' worldwide tax positions varied significantly based on the tax regime in the domicile of the foreign parent. The authors found that these firms held more debt in their companies in high-tax jurisdictions; of which the U.S. is one. They also found evidence consistent with the premise that these large firms are better able to take advantage of tax rate differences through tax planning. In fact, 34% of the FCCs in their sample showed zero U.S. taxable income (Mills & Newberry, 2004, p. 90). Similar to the findings of J. R. Hines (1994) and (Rego, 2003), their results indicate that researchers and policy makers should not view MNCs as a homogeneous group and that the impacts of tax incentives will end up being very much company-specific.

In summary, finance and economic theory has evolved to recognize that, in the presence of asymmetry of information between investors and managers, firms have a "pecking order" for their preferences for attracting and allocating capital for operations and investment (Myers, 1984). This pecking order reflects a preference for internal sources over external sources of capital. Further, the choices firms' managers make regarding how much capital to retain and the allocation and investment of their internal capital are affected by agency considerations (Jensen, 1986) and frictional costs, including taxes (Degennaro & Robotti, 2007). The effect of the removal of the frictional cost represented by the pre-TCJA repatriation tax on MNCs' capital and investment decisions is the focus of the present study.

The "lockout effect' of U.S. tax policy on foreign earnings: foreign cash and PRE

Stephen Shay offers a definition of "lockout" as "the phenomenon of U.S. multinational enterprises retaining low-taxed foreign earnings in foreign subsidiaries to benefit from deferral of U.S. taxation." (Shay, 2015, p. 1393). Several studies have examined and demonstrated a so-called "lockout effect" of the U.S. worldwide tax system prior to the enactment of the TCJA coupled with the financial reporting for deferred taxes under U.S. GAAP mentioned earlier. These studies have documented a positive relation between higher repatriation tax costs and foreign cash holdings (Clemons & Kinney, 2009; Foley et al., 2007; Hanlon et al., 2015; Harford et al., 2017; Laplante & Nesbitt, 2017), designation of foreign earnings as indefinitely or permanently reinvested (PRE) for financial statement deferral (the GAAP lockout effect) (Clemons & Kinney, 2009; Graham et al., 2011; Graham et al., 2010; Shaheen, 2014) and a negative association with dividend payout by foreign subsidiaries of U.S. MNCs, i.e. repatriation (Desai et al., 2001, 2007).

Desai et al. (2001) examine the effect of repatriation taxes on MNCs' decisions of whether or not to repatriate foreign earnings through dividend payments from foreign subsidiaries to their parent companies by comparing the behavior of incorporated foreign subsidiaries to that of foreign branches. U.S. MNCs can avoid U.S. incremental tax on the earnings of foreign incorporated entities until repatriation, while the earnings of foreign branches are taxed immediately at the U.S. rate. Using BEA data from 1982 to 1997, they found a significant association between the U.S. taxes on the earnings of these entities and dividend payments for the unincorporated branches, but not for the incorporated subsidiaries on which the tax could be avoided. This difference implied a significant association between U.S. tax rates and the decision to not pay dividends from the incorporated entities, consistent with the "lockout effect". The authors extrapolate from their results that a 1% reduction in repatriation tax rates is associated with 1% higher dividends. They conclude that the repatriation taxes in the pre-TCJA worldwide tax system reduced aggregate dividend payouts from foreign subsidiaries by almost 13%, resulting in reduced "efficiency" in their use of capital. The authors argue in favor of a territorial system to eliminate this inefficiency and "enhance the competitive positions of American firms in the world marketplace." (Desai et al., 2001, p. 829) The authors extend this analysis in a later study (Desai et al., 2007) wherein they consider other non-tax motivations for firms to repatriate earnings from foreign subsidiaries. They find that dividend repatriations are quite regular and that tax motivations alone cannot explain the dividend policies inside firms. Other potential explanations are the cost and availability of external financing and the agency considerations discussed earlier. The authors found that firms engage in tax-penalized repatriation behavior more often when subsidiaries are partially- rather than wholly-owned

subsidiaries or when the parent was financially constrained. These findings notwithstanding, tax avoidance remained a significant determinant in internal dividend policy.

Graham et al. (2010) and Graham et al. (2011) both use data from a survey of senior tax executives to assess the impact of repatriation tax costs and the ability to avoid reporting deferred tax expense on foreign earnings designated as PRE on firms' decision making, respectively. The analysis in Graham et al. (2010) focused on firms' repatriation decision in reaction to the AJCA tax holiday and the subsequent uses or intended uses of the funds repatriated or "freed up". Their primary finding related to the "lockout effect" was that repatriation tax costs affected firm behaviors including increased U.S. borrowing and investing foreign earnings in lower yielding assets offshore. Graham et al. (2011) focused on responses to the GAAP deferred tax and financial reporting questions in the survey. They found that 33% of respondents indicated that GAAP provision to avoid or defer recognition of tax expense on PRE was important to their decision to locate operations outside the U.S., and 60% report that this provision was important to the decision to invest in foreign countries, while 44% indicated that this provision was important to decisions regarding repatriation. The authors found that both of these impacts were greater for publicly traded firms, those with foreign assets, and those with investments in intangible assets (Graham et al., 2011, p. 140).

While there is clear evidence of the "lockout effect" of the pre-TCJA worldwide tax system, some have argued (and demonstrated) that firms can access their foreign retained earnings without triggering tax through the employment of specific tax planning and investment strategies (Altshuler & Grubert, 2003; Shay, 2015), and the data show that much of these "locked out" earnings are invested in U.S. based deposits or securities (Shay, 2015, p. 1397; U.S. Senate

Permanent Subcommittee on Investigations, 2011); thus calling into question the potential benefit to the U.S. economy of eliminating the incremental U.S. tax on repatriation.

Altshuler and Grubert (2003) demonstrate how tax planning structures could afford U.S. MNCs the opportunity to avoid repatriation taxes in the pre-TCJA era while constructively having global access to the ostensibly "locked out" funds. They proposed a model whereby MNCs invest foreign retained earnings in passive assets against which the parent can borrow elsewhere (even in the U.S.) to fund real investment. Even if the earnings on the passive investments are taxed, avoiding the repatriation tax costs still makes this a viable strategy for MNCs with foreign affiliates in low-tax jurisdictions as the associated borrowing costs are tax deductible, offsetting the earnings on the passive assets. This strategy is sometimes referred to in the literature (but not by the authors) as "negative leverage". Another alternative is a triangle strategy where, instead of investing in passive assets, the foreign sub in the low-tax jurisdiction can invest in or lend to a foreign affiliate. The down-stream foreign affiliate (presumably in a high tax jurisdiction) could then repatriate earnings to the parent without residual U.S. tax impacts. A third possible strategy exists where a U.S. parent invests in a higher tax foreign subsidiary which passes the investment through to a subsidiary in a low-tax jurisdiction. Low tax sub dividends earnings up which results in a blended foreign tax rate for credits against repatriated earnings. With these models, Altshuler and Grubert (2003) imply that firms that are in a position to employ these strategies can avoid repatriation taxes indefinitely.

Shay (2015) expands the arguments of Altshuler and Grubert giving current and precise examples of tax provisions that give rise to the strategies that are employed by U.S. MNCs to avoid tax on their foreign source earnings. Shay demonstrates that these strategies often result in effectively untaxed repatriation of funds held in foreign subsidiaries by large U.S. MNCs as

these entities borrow money to fund U.S. investment and shareholder payouts in substantial

amounts while avoiding U.S. repatriation tax. Shay also highlights the fact that, while U.S.

MNCs cannot avoid repatriation tax if they invest foreign held assets in their U.S. operations

directly, a large portion of U.S. MNC's unremitted foreign earnings may be invested in U.S.

dollar financial assets including U.S. treasury and agency securities. Thus, unremitted foreign

earnings of U.S. MNCs employing these strategies are not truly "locked out" of the U.S.

economy. Shay implies that, while the "lockout" effect of the U.S. worldwide tax system is real,

its effect on the U.S. economy may be overestimated by policymakers. He also highlights an

element of disingenuousness in the argument that U.S. tax policy alone is responsible for this

lockout effect by pointing out that it sidesteps the fact that firms have chosen to invest in or shift

income to foreign jurisdictions with lower tax rates and then subsequently cite the U.S. tax

policy as their rationale for not repatriating their foreign earnings. Shay found that the lockout

effect seems to be focused on a few of the largest MNCs, predominantly in the technology and

healthcare sectors, who already have access to these funds for U.S. investment, Shay asserts that

the (at the time) proposed shift to a territorial system, while probably leading to some

repatriation of foreign earnings, is not likely to substantially benefit the U.S. economy at large.

He argues against the present change stating "the evidence does not support a claim that lockout

is a primary reason to exempt multinationals' foreign dividends from active business income."

(Shay, 2015, p. 1393)

Further, some studies have examined the implications of strategies similar to those

proposed by Altshuler and Grubert (2003) and found evidence that these strategies are not

costless (Clemons & Kinney, 2009; Dyreng & Markle, 2016). (Clemons & Kinney, 2009) point

to the fact that firms who could have availed themselves of these strategies repatriated funds in

reaction to the AJCA as evidence that firms would repatriate if incented to do so. Dyreng and Markle (2016) posited and found that firms that are financially constrained may not be able to bear the costs of income shifting and tax avoidance and may need to repatriate funds sooner than they would prefer to meet domestic capital needs. As such, much of the extant research includes some assumption of eventual repatriation in examining the "lockout effect".

Foley et al. (2007) provide support for the notion that tax incentives or disincentives related to a particular organization structure, capital structure or activity, has an effect on specific firm behavior. Their study looked specifically at the effects of repatriation tax costs on foreign earnings of U.S. MNCs on cash holdings and, in particular, foreign cash holdings. Foley et al. (2007) examined financial statement data from Compustat for U.S. MNCs and their foreign subsidiaries and branches from 1982 to 2004 and foreign cash holdings data from the U.S. Bureau of Economic Analysis (BEA) benchmark surveys in 1982, 1989, 1994 and 1999; all pre-AJCA repatriation tax holiday. Their results showed that U.S. MNCs with higher repatriation tax costs[10] held significantly more cash compared to other firms and held proportionately more cash in non-U.S. affiliates and subsidiaries. They further found that foreign branches, which are subject to U.S. tax on their earnings in the year they are earned and do not benefit from deferral of tax until repatriation, held less cash than their incorporated foreign affiliates. The methods employed by Foley et al. (2007) and their findings formed the basis for a number of subsequent studies examining the lockout effect of U.S. tax policy on foreign asset holding by U.S. MNCs.

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[10] Measured as the difference between the firm's foreign effective tax rate and its marginal U.S. tax rate calculated using Graham (1996). Marginal tax rate, the rate paid on the next increment of taxable income, is considered a better measure than statutory rates for examining the effect tax on corporate behavior (Clemons & Kinney, 2008; Foley et al., 2007; Graham, 1996), although statutory rates and reported effective tax rates are often used for expediency.

Waegenaere and Sansing (2008) examined the effect of PRE on the value of a foreign subsidiary to the parent firm. They found that the effect of PRE on the value of the subsidiary depends on whether PRE is invested in operating assets or financial assets. Firms with PRE that have positive net present value (NPV) operating investment opportunities show higher subsidiary value. This relationship is logical because there is no opportunity cost to PRE when firms use them to invest in operating assets, as they have no incentive to repatriate those foreign retained earnings and thus could avoid the repatriation tax indefinitely. Firms that invest PRE in financial assets show a negative association between PRE and firm value. However, the authors developed a theoretical model that demonstrates that firms with PRE may still be better off if they invest these funds in financial assets rather than repatriating them.

With their theoretical model, Waegenaere and Sansing (2008) demonstrate that a firm that has reached its optimal level of investment in foreign operating assets could benefit from choosing to hold PRE in financial assets in that foreign subsidiary if they anticipate the possibility of a future tax holiday on repatriated earnings. Their model provides a theoretical explanation for why some firms may accumulate cash and other financial assets in low tax foreign subsidiaries in anticipation of the possibility of future repatriation tax relief.

Bryant-Kutcher, Eiler, and Guenther (2008) extended this model in examining the relationship of PRE disclosed to firm value. The authors examined the valuation of firms that disclosed PRE and further examined those that held "excess cash" which they estimate using the model from Foley et al. (2007). They found that the value of PRE is lower for firms reporting a positive repatriation tax cost. Further, after separating firms that had lower value assigned to PRE between those holding excess cash and not, they found that this discount of PRE by

investors was confined to those that invest their PRE in financial assets versus those that invest in operating assets, supporting the hypothesis at the core of Waegenaere & Sansing's model.

Clemons and Kinney (2009) leveraged the setting of the AJCA tax holiday to examine the lockout effect. The authors used PRE reported in the year prior to the AJCA as a proxy for "locked out" foreign earnings. Examining a sample of 213 firms that repatriated foreign earnings during the tax holiday, the authors found a positive association between PRE and repatriation tax costs and the level of foreign cash holdings prior to the AJCA. They also found that the change in PRE from the year prior to the AJCA to the year affected by the tax holiday was positively associated with the difference between the firm-specific repatriation tax rates before and during the tax holiday and that the change in PRE is positively associated with the change in cash holdings for that period, consistent with Waegenaere and Sansing (2008). Lastly, they found that their sample firms disclosed a significant increase in PRE in the year immediately following the tax holiday further demonstrating the "lockout effect" of the higher repatriation tax costs.

Blouin et al. (2012) asserted that the lockout effects of the repatriation tax cost and financial reporting standards are both directly related to the repatriation tax rate; the difference between a firm's foreign effective tax rate and the U.S. statutory rate. The authors examined whether firms with greater financial reporting incentives were more sensitive to the incremental repatriation tax rate. They did this by examining firms' use of the indefinite reversal exception in U.S. GAAP (by designating foreign earnings as PRE) based on the magnitude of the rate difference and proxies for financial reporting incentives involving capital markets measures and managers' expectations of the need to meet or beat benchmarks. They considered public firms to have more financial reporting incentives than private firms. They examined repatriation behavior vis-à-vis the repatriation tax cost and proxies for stock price sensitivity to earnings,

histories of beating analyst forecasts and lower levels of dedicated institutional ownership as indicators of greater financial reporting incentives. They found that repatriation by public firms was more sensitive to repatriation tax rates than private firms. They also found that repatriation by public firms making more extensive use of the PRE designation was more sensitive to repatriation tax rates than other public firms.

Hanlon et al. (2015) and Edwards et al. (2016) both leverage the Foley et al. (2007) model to estimate "trapped cash" or excess foreign cash holdings due to repatriation tax costs in examining whether firms with higher levels of "trapped cash" used those funds to make foreign acquisitions. Both extend the work of Harford (1999) in examining the agency problem leading to management using excess cash for "value destroying" acquisitions rather than returning the excess funds to shareholders. Hanlon et al. (2015) examined acquisitions prior to the AJCA tax holiday (1988 to 2004), while Edwards et al. (2016) included deals from 1993 through 2012. Hanlon et al. (2015) found a positive association between excess foreign cash holdings and the probability of a foreign acquisition. Their results indicated that a one-standard-deviation increase in tax-induced foreign cash holdings was associated with a 5% increase in the probability of a foreign acquisition (Hanlon et al., 2015, pp. 180-181). Their results did not necessarily indicate these foreign acquisitions were value destroying. However, based on market reaction to deal announcements, they did find that tax-induced excess foreign cash was associated with lower incremental returns on these acquisitions. This finding implied that these investments were less value enhancing than other firms' foreign acquisitions. Edwards et al. (2016) found that firms with larger amounts of foreign cash made less profitable acquisitions. They also found, perhaps more significantly, that this association was not seen during the tax

holiday, implying that the repatriation tax cost is associated with manager's decision to invest abroad, even if that investment will produce an inferior return.

De Simone and Lester (2018) used company-level BEA benchmark survey data to examine the association between trapped cash they label as "tax-induced foreign cash" (TIFC) and domestic liabilities or borrowing. The authors derived their measure for TIFC using the estimation technique in Hanlon et al. (2015). The authors attempted to quantify the magnitude of domestic liabilities and internal lending attributable to TIFC at the firm level, which they then extrapolated to aggregate estimates for presentation in their paper. They found that firms in the top quartile of their TIFC measure had higher domestic liabilities and debt issuances. They then tested three potential drivers of the need for domestic cash: payouts to shareholders, domestic investment, and domestic employment, in relation to TIFC; indicating firms which may need to borrow domestically to meet these needs. They found that domestic liabilities were proportionally higher for high-TIFC firms with higher payouts, particularly for repurchases, or increasing or special dividends. They further found that high-TIFC firms with the highest levels of R&D expense and those that engaged in all-cash acquisitions had higher proportional domestic liabilities. They did not find this association with domestic capital investment or employment; suggesting that high-TIFC firms fund these expenditures primarily out of domestic cash and cash flows rather than debt.

The literature reviewed in this section examined and documented the existence of a "lockout effect" of the U.S. worldwide taxation of foreign earnings upon repatriation. Firms with a positive repatriation tax cost hold proportionally greater amounts of their foreign earnings offshore (Foley et al., 2007), designate more of those unremitted foreign earnings as indefinitely reinvested or PRE (Clemons & Kinney, 2009) and invest more in acquisitions (Hanlon et al.,

2015) and financial assets (Desai et al., 2001; Waegenaere & Sansing, 2008) in foreign subsidiaries and even borrow more domestically (De Simone & Lester, 2018) rather than repatriating funds for domestic investments. The research reviewed in section 2.4 e) below and the present study examine the extent to which the "lockout effect" is mitigated by the reduction or elimination of the repatriation tax cost. The prospect of in freeing up tax-induced trapped capital for domestic investment is a primary premise for the provisions reducing or eliminating repatriation tax costs in the AJCA and TCJA. Similar to much of the post-AJCA research reviewed in the next section, the present study examines the effect of removing the repatriation tax cost that led to the "lockout" of foreign earnings by examining the post-TCJA payout and investment behavior of MNCs with proportionally higher pre-TCJA foreign cash holdings.

Key Post-AJCA research

As mentioned earlier, the one-year 85% dividends received deduction for funds repatriated from foreign subsidiaries offered a unique opportunity to examine the impact of reducing repatriation tax costs on MNCs' capital allocation and investment behavior. In an analysis of the temporary repatriation tax holiday shortly after passage of the AJCA, Clausing (2005) posited that while the tax holiday would result in significant repatriations based on pre-AJCA estimates of foreign earnings held offshore by U.S. MNCs, those repatriations were unlikely to result in significant change in domestic investment that was not already planned by those MNCs. She bases her view on the fact that these companies tend to be large and have capacity for sophisticated tax planning and that these companies will also tend to have sound credit ratings and thus would already have cost effective access to capital. Clausing (2005), and others including the Joint Committee on Taxation (2004), expected that the tax holiday would lead firms to hold back repatriating temporarily in anticipation of the change, an extraordinary

temporary increase in repatriation (and U.S. tax revenues) in the tax holiday year and a reduction in repatriations in subsequent years.

The subsequent extant literature examining the effects of the ACJA show that Clausing's predictions were essentially correct. On the temporary increase in repatriations, studies using IRS data (Redmiles, 2008) and Bureau of Economic Analysis (BEA) data (Dharmapala et al., 2011) showed a significant increase in repatriations in 2005 (the year most affected by the tax holiday) and immediate decrease the year(s) thereafter. The empirical evidence on the effect on U.S. investment is mixed, but mostly in line with Clausing's expectation that the repatriations would not have a significant incremental effect on U.S. domestic investment. There were several studies that exploited the unique setting of the temporary tax holiday in the AJCA to examine repatriation decisions and how repatriating firms deployed the repatriated funds. Dong, Cao, Zhao, and Deshmukh (2019) present a review of the extant literature in this stream of research. The authors noted the research opportunity presented by the ACJA indicating "researchers took advantage of this natural experiment and provide evidence that elucidates the effect of repatriation tax on MNCs' repatriation and investment decisions."(Dong et al., 2019, p. 122) The authors further discussed how this research coupled with the recent passage of the TCJA presents a unique opportunity. The present study is in part a response to the "opportunities to re-examine research questions" in that review. In fact, the authors specifically mention the research opportunities presented by the TCJA in demonstrating the salience of their review. In particular, "How do uses of the repatriated funds differ between the TCJA and the AJCA?"(Dong et al., 2019, p. 119 & 120).

There are six studies discussed in this section that leveraged the unique setting provided by the temporary tax holiday in the AJCA to show a clear association between the frictional tax costs of repatriation and MNC behavior and provide a blueprint for future research in this area.

Clemons and Kinney (2008) examined repatriations associated with the ACJA and the uses of the funds by the repatriating firms. Their review of the 2005 financial statements of their sample firms showed that 379 firms had repatriated foreign earnings that year. Of those, the 364 firms for which sufficient financial information was available had repatriated approximately $283 billion of foreign earnings in that year.

The authors compared their "repatriating" firm sample to 1,454 "nonrepatriating" MNCs and the entire Compustat universe of 5,571 firms for 2004 and observed that "repatriating firms are larger than nonrepatriating multinational firms and the Compustat universe of U.S. firms based on total assets." (Clemons & Kinney, 2008, p. 241). They further found that the foreign operations of repatriating firms were more profitable than non-repatriating MNCs.

The authors used financial statement data for a subset of the repatriating firms to examine characteristics of repatriating firms and whether the repatriated funds were used for permitted purposes under the AJCA. They found that repatriation choice and magnitude was positively associated with the difference between the firm's marginal tax rate and their foreign effective tax rate. However, they did not find evidence that repatriation was positively associated with growth opportunities; leading them to conclude that the "results tend to support the supposition that firms were more motivated to repatriate under the act to reap tax savings rather than to fund domestic growth opportunities" (Clemons & Kinney, 2008, p. 244) The authors examined relationships between repatriation and whether the funds were used for permitted or non-permitted uses. For permitted uses, only the relation between the amount repatriated and change

in capital expenditures was significant, but surprisingly, these were negatively associated with repatriation. For the non-permitted uses, there was no significant association for dividends, but share repurchases showed a significant positive association with the amount repatriated. This led the authors to conclude that while the tax holiday did result in repatriation a significant amount of foreign earnings as was hoped and expected, the repatriated funds were largely used for share repurchases, a disallowed purpose.

Blouin and Krull (2009) also examined the characteristics of MNC firms that repatriated earnings in the tax holiday period and how those firms used the repatriated funds. The authors extended the theory from Hartman (1985) and posited that repatriating firms are those that have few high-return investment prospects in which to invest either in the U.S. or abroad. In an examination of financial data and financial statement disclosures for 357 repatriating firms and 2,339 non-repatriating firms for the period between 2001 and 2005 (including the pre-AJCA and post-AJCA periods), Blouin and Krull (2009) found a positive relation between free cash flow in foreign affiliates (indicators of a lack of high-return investment prospects) and repatriation. They further found, consistent with free cash flow theory, that repatriating firms increased distributions to shareholders rather than investing in capital projects in the U.S. The authors found that repatriating firms increased distributions to shareholders in the period after repatriation, with 50% of the repatriated funds estimated to have gone to share repurchases (Blouin & Krull, 2009, p. 1056). These firms disclosed investment in some other activities and uses of the funds that would have qualified under the AJCA, but the timing and magnitude of the share repurchases led the authors to conclude they were associated with the availability of the repatriated funds.

Dharmapala et al. (2011) employed survey data from the Bureau of Economic Analysis (BEA) as well as financial statement data to examine the characteristics of repatriating MNCs (the authors refer to them as multinational enterprises (MNEs)) and the subsequent investment behavior by repatriating firms. Their approach differs somewhat from Blouin and Krull (2009) in that they employ a two-stage "instrumental variable" (IV) regression approach to address the endogeneity concern that the decision to repatriate is firm-specific. The authors found that repatriating firms were mostly not financially constrained and that repatriations were not associated with increased domestic investment or employment; rather, repatriations were most often associated with distributions to shareholders primarily through share repurchases (Dharmapala et al., 2011, p. 771).

Faulkender and Petersen (2012) extended the research in this area and addressed what the authors saw as empirical shortcomings of the approaches of the previous two studies as it related to grouping firms as "repatriating" on "not repatriating" for their difference in differences analyses. Faulkender and Petersen (2012) found that repatriating firms were more likely to be large and have available free cash flow on average, thus, not financially constrained pre-AJCA. To better address the endogeneity concerns stemming from the fact that repatriation decision and subsequent investment decisions are firm specific, Faulkender and Petersen (2012) partitioned their sample firms into three groups for their analysis of repatriating versus non-repatriating firms by focusing on whether the firms indicating repatriation were in a position to benefit from the tax holiday (those that disclosed PRE or other indications of unrepatriated foreign earnings in low tax jurisdictions). The authors further found that, once partitioned in this way, repatriating firms did not significantly increase U.S. investment on average, consistent with the prior two studies. However, after partitioning based on free cash flow, the authors found that firms with

insufficient free cash flow to fund incremental investment pre-AJCA showed an increase in domestic investment relative to book value (Faulkender & Petersen, 2012, p. 3377). In other words, financially constrained firms that repatriated in response to the AJCA increased domestic investment, consistent with the policy intent of the AJCA. However, it should be noted that the financially constrained firms which the authors identified as having a high probability of repatriation represented 44% of repatriating firms but only 27% of the estimated total amount repatriated. Given their estimate that these firms deployed approximately 78% of their repatriated funds into domestic investment, their results imply that only approximately 21% of the aggregate repatriation amount was spent for the targeted purpose of domestic investment. Thus their results contrast with, but do not refute the findings of Blouin and Krull (2009) and Dharmapala et al. (2011).

In a separate but concurrent study, Graham et al. (2010) surveyed tax executives U.S. MNCs, regarding their decision to repatriate funds in response to the tax holiday in the TCJA and their use of the repatriated funds, including funds "freed up" as a result of the repatriation. The authors found that firms that repatriated foreign earnings in response to the AJCA DRD "tax holiday" were larger, in terms of assets, market capitalization and sales, had higher market to book ratios and higher effective tax rates, and larger amounts of PRE reported pre-AJCA.

The authors also found, not surprisingly, that firms that repatriated used the funds for permitted purposes including U.S. capital investments (24%), hiring or training (24%), research and development (15%) or debt redemption (12%). These firms also reported 7% of the repatriated funds were used to fund acquisitions, and 5% was still held in cash at the end of 2006, while 10% went for various "other" permitted purposes. Despite the fact that share repurchases and dividends to shareholders were expressly not permitted under subsequent guidance to the

AJCA, repatriating firms reported that 4% of repatriated funds went for these purposes (Graham et al., 2010, pp. 21-22). However, when examining the use of funds "freed up" by the repatriation, the authors found that 47% of respondents indicated they used "freed up" funds to pay down domestic debt, while 40% indicated they used these funds to repurchase shares and 17% indicated they used "freed up" funds for dividends (Graham et al., 2010, pp. 16-17). While Graham et al. (2010) did not measure the magnitude of the "freed up" funds or the amounts used for the purposes stated by respondents, their results are not inconsistent with Blouin and Krull (2009), Dharmapala et al. (2011) or Faulkender and Petersen (2012).

More recently, Dong and Zhao (2018) extended the research on the AJCA repatriation tax holiday with a closer examination of the relationship between repatriation and R&D investment. The authors found that on average the ACJA tax holiday led to an increase in R&D investment by repatriating firms and assert that their research bridges the gap between studies that did not find an association between repatriation and domestic investment (Blouin & Krull, 2009; Dharmapala et al., 2011) and those that do (Faulkender & Petersen, 2012; Graham et al., 2010).

Their results indicated that repatriating firms increased their investment in R&D more than non-repatriating firms and that a typical repatriating firm spent 8.8% of the repatriated funds on R&D. Here again, the results are different from, but do not refute the findings of prior studies that most of the repatriated funds were used for shareholder distributions (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011).

In summary, examination of repatriation of foreign earnings by MNCs in response to the temporary reduction in repatriation tax costs in the AJCA indicated that approximately 62% of foreign earnings that were estimated at the time to be "locked out" were repatriated. However, examination of the uses of these funds indicated that they were primarily used for shareholder

payouts, predominantly in the form of share repurchases (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011). Other studies found that, while most of the repatriated funds were used for payouts, some of the repatriated funds were used for domestic capital investment (Faulkender & Petersen, 2012) and R&D (Dong & Zhao, 2018). A survey of tax executives indicated that firms reported using the funds for approved purposes including paying down debt, domestic capital investment, R&D and non-executive compensation while using funds "freed up" by the tax relief for payouts and repurchases. The present study examines similar relationships between lowering repatriation tax costs and the payout and investment behavior of the firms most affected by the tax reduction. It examines the relation between higher levels of pre-TCJA foreign cash that would be "freed up" by the foreign earnings tax provisions in the TCJA and post-TCJA payout and investment expenditures. The expenditures examined are similar to those examined in the AJCA research including shareholder payouts (dividends and repurchases), capital expenditures, R&D, business acquisitions, and leverage reduction.

TCJA literature

A Google Scholar search for "Tax Cuts and Jobs Act" yields more than 5,200 publications. Many of these are analyses of the TCJA itself and potential impact on the economy or taxpayers, either in the aggregate or on specific cohorts (Gale, Gelfond, Krupkin, Mazur, & Toder, 2019; Mertens, 2018; Page, Rosenberg, Nunns, Rohaly, & Berger, 2017; TPC Staff, 2017) and reports by and for government agencies on the TCJA's anticipated and initial effects (Gravelle & Marples, 2018; Joint Committee on Taxation, 2017a, 2017b; Smolyansky et al., 2019). While a review of these impacts is beyond the scope of the present study, it is worth noting that in the case of the TCJA, these analyses offer somewhat of a consensus that the changes in the law will be initially positive for economic growth, as measured by increases in

gross domestic product (GDP), but not revenue neutral. By all estimates, the law will increase the federal budget deficit.

There are also numerous articles in practitioner publications such as The CPA Journal , Journal of Accountancy, and various law journals focused primarily on provisions in the law (Avi-Yonah, 2018; Nevius, 2018; Schreiber, 2019a, 2019b), implementation issues (Lougen, 2018; Schreiber, 2019b) and financial reporting concerns (Honaker & Thomas, 2019; Ren, Sankara, & Trimble, 2020). It has also proved a popular and sometimes controversial topic in newspapers and financial periodicals such as the New York Times, Fortune, Forbes and Bloomberg; including highlighting firms that were holding significant balances offshore and the initial perceived effects of the TCJA on repatriation of funds and MNCs' uses of those funds (Garber, 2017; Meyer, 2018; Tankersley, 2018a, 2018b; Valetkevich, 2018; Weller, 2019).

There have been a few articles published in peer-reviewed academic journals, but most of the empirical analysis regarding the TCJA its potential effect on MNC corporate behavior to date is comprised of conference papers and SSRN working papers (Bennett et al., 2019; Beyer, Downes, Mathis, & Rapley, 2020; Dharmapala, 2018; Hanlon, Hoopes, & Slemrod, 2018) and the list is growing. To date, however, I am not aware of any published research that offers more than preliminary conclusions or speculative prospective estimates. These preliminary results and speculations will need to be re-examined empirically when there is more sufficient data.

TCJA research of particular interest to the research questions in the present study

There are three recently published papers that focus on research questions similar to those being examined in the present study regarding the effect of the provisions in the TCJA concerning taxation of foreign source earnings on U.S. MNC behavior (Bennett et al., 2019; Beyer et al., 2020; Smolyansky et al., 2019). It is important to note here that given the

differences in the disclosure requirements between the AJCA tax holiday and the TCJA, there is very little data available on actual repatriation of foreign earnings by U.S. MNCs at the firm level. As such, other than the economic studies examining aggregate repatriation amounts and potential uses, there are no TCJA-related studies that use actual repatriation as a variable of interest.

Smolyansky et al. (2019) produced a report for the Fed Board of Governors on FEDS Notes providing BEA data for full year 2018 showing $777 billion in repatriations for the full year. The authors used aggregate data to show the increase in repatriations (see the BEA data in figure 1). The authors also highlight an increase in share repurchases, as well as capital expenditures and R&D, although less than repurchases. They then examined financial data for the top 15 cash holding non-financial firms compared to all other non-financial firms in the S&P 500. They found that repatriations increased significantly for the top 15 cash holding firms from 2017 to 2018. With the top 5 cash holding firms accounting for 65% of the amount repatriated by the top 15. These top 15 firms repatriated more, as a percent of total assets, than the other nonfinancial firms and were net sellers of financial assets after several years of being net investors. The authors also noted a corresponding increase is share repurchases, particularly by the top 15 cash holders; leading to their inference that the repatriated funds have been used to fund these repurchases. The authors did not find evidence of any increase in dividends by the top 15, relative to other firms. The authors did note an increase in investment by the repatriating firms in the top 15, but not significantly different from their pre-TCJA trajectory. They note, however, that there may be more repatriation to come and that it may be too early to see the effect on investment as these decisions may take firms a bit more time. The authors examined trends in aggregate and firm level data and made comparisons across groups of firms based on

size of cash holdings, but their analyses do not include any models estimating the associations between elements of the data or regression analyses.

Bennett et al. (2019) examines share repurchase data gathered from 10K and 10Q filings for 2017 and 2018 to examine the impact of the TCJA on repurchases. The authors examined repurchase announcements and monthly data from January 2017 to September 2018 (a post-TCJA period of just nine months). They used a difference-in-differences design where they compared high foreign profits firms with low foreign profits firms and repatriation announcements for months in pre-TCJA and post-TCJA periods in their sample. They found that repurchases increased after the TCJA on average for all firms in their sample. "Economically speaking, an average firm almost doubles its share repurchases after the TCJA." (Bennett et al., 2019, p. 15) However, post-TCJA repurchases increased more for firms with higher foreign profits. Further, the authors found that repatriations were lower for firms domiciled in states where the federal participation exemption or dividends received deduction is not allowed. This led the authors to assert that the increase in repatriations is due to the deemed repatriation and participation exemptions in the TCJA rather than the tax rate decrease. These findings are in line with the main findings from the AJCA-period research (Blouin & Krull, 2009; Dharmapala et al., 2011) and more recent preliminary research relating to the TCJA (Beyer et al., 2020; Smolyansky et al., 2019). These findings, while significant, should still be considered very preliminary for examining the impact of the TCJA.

Beyer et al. (2020) examined the relationship between the reduction in repatriation tax costs and firms' investment behavior, particularly their foreign cash. While not attempting to do so explicitly, Beyer et al. (2020) extended the work of Smolyansky et al. (2019) by proposing a model estimating shareholder payouts (repurchases or dividends) and/or capital expenditures by

MNCs given their level of foreign cash holdings and whether or not they were financially constrained based on their pre-TCJA financial data. In line with Smolyansky et al. (2019), Bennett et al. (2019), and much of the AJCA focused research (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011), Beyer et al. (2020) found evidence of increased repurchases post-TCJA for firms holding proportionally higher amounts of foreign cash pre-TCJA. The authors also found some less significant indications of post-TCJA domestic investment, but only for firms classified as "marginally weak" financially.

Beyer et al. (2020) used a sample of financial data from 400 MNCs for the calendar years 2015, 2016 and 2018[11] to estimate regression models estimating expenditures, shareholder payouts (dividends and repurchases) and capital expenditures, by firm by year based on the firm's proportional holdings of cash in foreign subsidiaries in 2014, pre-TCJA. The independent variables of interest were foreign cash balances scaled to total assets reported for calendar yearend 2014 and an interaction term for these scaled foreign cash balances with a dummy variable "*POST*" indicating whether the foreign cash observation is from a pre- or post-TCJA year. The model included control variables related to other provisions in the TCJA and possible drivers for payouts and capital expenditures from prior literature. A significant positive coefficient on the interaction term would indicate a positive relationship between the post-TCJA-year payout or capital expenditure measure and the scaled 2014 foreign cash balance. This condition was present for share repurchases, but not for dividends, or capital expenditures.

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[11] The authors omitted 2017 as it is the year the TCJA was enacted which, in their view could include both pre- and post-TCJA effects. This may not have been necessary for a study only including calendar year reporting entities given the mandatory nature of the transition tax and the late-December enactment of the TCJA leaving little or no time for effective tax planning in 2017.

To test if the results of their main analysis were indeed, as they contended, primarily related to the foreign tax provisions of the TCJA, the authors conducted a cross-sectional analysis partitioning their sample firms based on pre-TCJA repatriation tax costs, estimated using the difference between their pre-TCJA domestic and foreign effective tax rates. A similar measure of repatriation tax cost has been shown in prior research to be associated with accumulations of foreign cash (Foley et al., 2007; Laplante & Nesbitt, 2017). They found that the findings from their main tests were present and more pronounced for firms with high levels of pre-TCJA cash holdings and high pre-TCJA repatriation costs, but not at a statistically significant level for low-repatriation-cost firms. This would suggest that the observed positive association between pre-TCJA foreign cash holdings and post-TCJA share repurchases is at least in part due to the pre-TCJA repatriation tax cost and the foreign earnings repatriation provisions of the TCJA.

The authors also performed a difference-in-differences analysis by replacing their foreign cash measure with a binary variable identifying MNCs versus domestic-only firms, equal to 1 for an MNC and 0 otherwise. Those firms that reported any foreign income in 2012 and 2013 were designated as MNCs, those that did not were considered strictly domestic firms. Since all firms were affected by the decrease in the U.S. statutory tax rate, (as well as the depreciation, net operating loss deduction, and interest expense limitation changes) differences between the two groups would indicate an effect of the foreign tax provisions. They found positive and significant associations for total payouts and repurchases with their MNC variable interacted with their post-TCJA dummy. Their results indicated that the observed effects on post-TCJA expenditures related to foreign cash accumulations in their main analysis are relevant for MNCs but less so for

domestic-only firms, further supporting the notion that the observed effects are primarily related to the foreign tax provisions in the TCJA.

The present study is an extension of Beyer et al. (2020) (hereafter BDMR) which employs similar regression estimations with a cross-sectional analysis based on repatriation tax costs to examine the relation between foreign cash holdings and post-TCJA payout and investment behavior. I also include a differences-in-differences analysis to better determine if the observed relationships are indeed due to the foreign tax provisions or possibly from the broader tax rate decrease which affected both domestic firms and MNCs alike.

There are three important ways in which the present study extends BDMR. First, the present study includes both fiscal year and calendar year reporting firms in the sample where BDMR included only calendar year firms. I would argue that including only calendar year firms may exclude some relevant data from important fiscal year reporters (including Microsoft, Apple, Home Depot, NVIDIA, and Adobe to name just a few). Second, the present study expands the post-TCJA period to include two fiscal years immediately following the enactment of the TCJA where BDMR included only one year in their post-TCJA period. Given the unavoidable nature of the transition tax, the fact that it can be paid in installments over eight years and the intention that the participation exemption is permanent, I posit that there will be more extended impacts from the TCJA compared to the AJCA and that the responses in year 2 (and beyond) will be different from those in the initial post-TCJA year. Third, the present study expands the potential responses examined beyond payout and capital expenditures, including R&D expenditures, acquisitions, and debt reduction. I expect that these types of investment may be more prevalent in the periods beyond the first year post-TCJA enactment.

2.3 Hypothesis development:

The present study examines the shareholder payout, capital investment, R&D investment, corporate acquisition, and debt reduction responses to the foreign earnings tax provisions in the TCJA. Specifically, it seeks to identify if and how the responses of MNCs to the permanent tax holiday in the TCJA regarding repatriation and uses of repatriated funds differ from the responses to the temporary tax holiday in the AJCA evidenced in prior research and, how those responses may be different beyond the first year after enactment from those observed in the preliminary studies focused on the TCJA thus far.

While all of the studies focused on the effects of the repatriation tax holiday in the AJCA found that firms did repatriate significant amounts of foreign earnings, most did not find that the repatriated funds were used for domestic investment; with the exceptions of Faulkender and Petersen (2012) and Dong and Zhao (2018) who found certain narrow cohorts of firms that increased domestic investment in capital expenditures and R&D. Preliminary results in the current TCJA literature have found increases in share repurchases and some limited evidence of capital expenditure. To date, there are no studies examining a relationship between the foreign earnings provisions of the TCJA and R&D or acquisition investments. The examination of the effect of the TCJA on leverage thus far has focused on the interest deduction limitations under the new tax law and not the permanent tax holiday for foreign earnings.

Proxy for Repatriation of Foreign Earnings

Hartman (1985) provided a theoretical model demonstrating that, assuming that foreign earnings must eventually be repatriated under tax rates that will remain constant, repatriation tax costs should not be relevant to a mature firm's decision to reinvest or repatriate foreign earnings. Only the after-tax return on offshore reinvestment matters; specifically, whether that return

exceeds the after-tax return that could be earned in the U.S. Despite the soundness of the

Hartman (1985) theoretical model, as mentioned, most of the studies examined in my literature

review provide empirical evidence that repatriation tax rates do indeed impact a firm's decision

regarding whether and/or when to repatriate foreign earnings.

As much of the post-AJCA literature points out, however, Hartman's propositions depend

on the assumption that the foreign earnings will ultimately be repatriated and taxed at the higher

of the foreign or domestic tax rate. It does not account for a scenario whereby the domestic tax

rate is lowered temporarily, as in the AJCA or indefinitely, as in the TCJA.

In their early post-AJCA study, Clemons and Kinney (2008) pointed out this distinction

and posited that MNCs would have at least one of two motivations for repatriating during the tax

holiday: either to harvest tax savings on their built up foreign retained earnings or to alleviate a

capital constraint on domestic investment opportunities. The difference between each firm's

marginal U.S. tax rate and its effective foreign tax rate is an important factor in assessing either

motive or the likelihood of repatriation in response to the tax holiday. As such, the authors

asserted, and found, that firms with lower average foreign tax rates, those most likely operating

in tax havens and also most likely to be in an FTC deficit position, would be most likely to

repatriate during a tax holiday. Other AJCA-focused studies (Blouin & Krull, 2009; Dharmapala

et al., 2011; Faulkender & Petersen, 2012) also included variables for the difference between

estimated foreign tax rates and the U.S. statutory rate in measuring the likelihood that a firm

repatriates under the AJCA in their models. Following this logic, I expect that firms with lower

average foreign tax rates vis-à-vis their marginal tax rate pre-TCJA are more likely to have

accumulated "locked out" unremitted foreign earnings that will now be "freed up". These firms

should be more likely to repatriate and will most likely repatriate more of their foreign retained earnings in response to the TCJA.

However, unlike the post-AJCA period, data indicating which firms repatriated, and how much, are not yet available in the context of the TCJA. While firms were required to disclose the amounts repatriated in response to the AJCA and indicate in their dividend reinvestment plan how they intended to deploy the repatriated funds, no such requirements are in place related to the TCJA. As a result, most firms have not referred to their repatriation intentions in their public disclosures or statements and very few firms have disclosed actual amounts repatriated, if any.[12] Data on repatriations will become available with the next release of the BEA benchmark survey, however, these data are not available for inclusion in the present study.

That said, prior research regarding the "lockout effect" of the pre-TCJA worldwide tax system has shown a clear connection between repatriation tax costs and foreign cash accumulation (Foley et al., 2007; Hanlon et al., 2015; Laplante & Nesbitt, 2017). Prior to the TCJA, many firms disclosed their holdings of cash and cash equivalents in their liquidity disclosures in the management discussion and analysis in their annual forms 10k. This information has been hand-gathered in prior studies (Beyer et al., 2020; X. Chen, 2015; Laplante & Nesbitt, 2017). As such, I follow the approach taken by BDMR and use a pre-TCJA foreign

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[12] Some firms included references to the foreign earnings provisions in the TCJA in their earnings releases and SEC filings (see Apple for an example). However, they provide few or no specifics on the amounts and timing of any repatriations. One recently published study that examined S&P 500 firms' public announcements of TCJA-related actions found 94 firms making such an announcement in Q1 of 2018. A review of the Americans for Tax Reform (ATR) list used for that study (updated through August of 2020) did not reveal any firms making specific reference to repatriations of foreign earnings.

cash balance scaled to total assets as a proxy for repatriatable funds to examine MNC payout and investment behavior in response to the TCJA.[13]

Deployment of repatriatable funds

The lowering of repatriation tax rates reduces the cost of internal capital available for investment in positive net present value projects in a firm's home country. According to the finance theory cited earlier in this paper, firms will prefer internal financing over external (Myers, 1984) so lowering the cost of internal capital should increase the potential after-tax return on that capital. Further, lowering the tax cost will remove some of the cost of capital and tax planning rationale that managers may use for holding retained earnings in the firm offshore, thus decreasing the agency cost effect influencing the decision to withhold these funds from investors if they have limited opportunities for investing them in higher returning assets or activities (Jensen, 1986). There are a number of potential uses for the capital that will be "freed up" by the lowering of these internal capital and agency costs. The list of approved uses under the AJCA provides insight into the types of active domestic investment that policy makers enacting the tax laws would prefer including hiring, training and non-executive compensation for employees, domestic R&D, domestic capital expenditures in property plant and equipment or intangible assets, advertising or marketing, and/or business acquisitions. In the absence of opportunities to invest in these types of investments that earn more than the firm's cost of capital, managers may also choose to return capital to investors by paying down debt, paying dividends or repurchasing company stock.

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[13] Changes in foreign cash from pre-TCJA levels to post-TCJA levels might also serve as an effective proxy for repatriation amounts, however, far fewer firms are disclosing their foreign cash balances in their 10K reports for post-TCJA years. Some notable companies that have dropped the disclosure are Apple, Alphabet (Google), Microsoft, Netflix and Oracle (Kochkodin, 2018).

While all of the studies examining the repatriation tax holiday in the AJCA found that firms did repatriate significant amounts of foreign earnings in response to the tax holiday, most did not find that the repatriated funds were used for domestic investment.

Most of the post-ACJA studies cited in this paper found a significant association between repatriation and share repurchases and concluded that share repurchases was the most significant ultimate use of the repatriated funds (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011). Faulkender and Petersen (2012) and Dong and Zhao (2018), however, found certain narrow cohorts of firms meeting specific criteria that increased domestic investment in capital expenditures and R&D. These findings, however, covered a smaller portion of the total estimated funds repatriated and did not refute the findings that the bulk of the repatriated funds were used for share repurchases. Graham et al. (2010) also found that tax executives indicated that repatriated funds had been used for approved purposes under the AJCA, but respondents reported other uses for the funds "freed up" by the repatriation, including share repurchases.

In some more recent studies of the initial effects of the TCJA, there is further evidence that repatriated funds are used by firms to repurchase shares. Smolyansky et al. (2019) found significant amounts of repurchases reported by a sample of large firms occurring concurrently with the spike in repatriation of foreign earnings reported in the aggregate balance of payments data reported by the BEA for 2018.   Bennett et al. (2019) also examined the relationship between the increase in share repurchases in the first three quarters of 2018 and the provisions of the TCJA. The authors performed analyses seeking to isolate the effect of the repatriation tax change and found that the repurchase activity is more associated with the elimination of the repatriation tax than the decrease in the corporate tax rate.

Firms may also distribute excess capital to shareholders by increasing dividends or paying one-time extraordinary dividends. However, prior research that has examined the relationship between foreign earnings repatriation and dividends has not found a significant positive association. Researchers have argued that this is most likely due to the "sticky" nature of investor expectations regarding dividends. Increases in dividends tend to lead to an expectation of maintenance of higher levels of dividend payout and future increases. In developing their hypotheses, Blouin and Krull refer to extant literature and argue that "firms prefer to use repurchases to distribute transitory cash flows because, unlike dividends, open market repurchases do not typically require an ongoing commitment" and that, from a shareholder perspective, repurchases are tax preferred for shareholders as they are taxed as capital gains while dividends are taxed as ordinary income. (Blouin & Krull, 2009, p. 1037)

Taken together, the findings of most post-AJCA studies (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011) and the more recent studies of the initial effects of the TCJA (Bennett et al., 2019; Beyer et al., 2020; Smolyansky et al., 2019) indicate that any foreign earnings repatriated in response to the TCJA are more likely be used for share repurchases than for other purposes. As such, I expect, that repatriatable funds will be used in large part to fund share repurchases. Therefore, I make the following hypothesis:

> **H1a**: *MNCs with higher levels of foreign cash pre-TCJA are, on average, more likely to increase shareholder payouts in the form of repurchases in response to the TCJA.*

Notwithstanding the primary finding of the post-AJCA research and indications of the aggregate data and initial empirical results of research associated with the TCJA expressed in hypothesis 1a, the fact remains that one of the policy objectives of the TCJA is to encourage

domestic investment. Given that the AJCA had similarly stated objectives, prime candidates for examination are the "permitted uses" for funds repatriated in the AJCA tax holiday period including domestic employment and compensation, domestic capital investment, domestic R&D expenditure and certain acquisitions. Thus, the question of whether firms increased investment in response to the TCJA is a relevant and important question to examine given the important difference between the temporary nature of the tax holiday in the AJCA and the one-time, yet permanent effects of the transition tax and the intended permanence of the participation exemption provisions in the TCJA.

Further, according to aggregated annual data recently released by the BEA in their report on the activities of U.S. MNEs (their term for MNCs), U.S. MNEs increased employment (primarily in the U.S.), capital expenditure on PP&E by $921 billion (79% of that increase in the U.S.) and R&D by $384 billion (85% of that increase in the U.S.) in 2018, the first year after the TCJA. The increases in PP&E and R&D are substantial, but the U.S. portions represent only about 1/3 of the $2.8 trillion estimated pre-TCJA foreign cash holdings estimated to be available for repatriation (U.S. Bureau of Economic Analysis, 2020a). This amount is roughly in line with the aggregate amounts repatriated according to separate balance of payments data from the BEA[14].

Therefore, in line with prior research, the present study examines associations between pre-TCJA proportional foreign cash holdings and capital expenditures (Beyer et al., 2020; Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011; Faulkender & Petersen,

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[14] There is no separate BEA data on shareholder payouts (dividends and share repurchases) included in the report.

2012), R&D expenditures (Dong & Zhao, 2018) and acquisitions (Bird, Edwards, & Shevlin, 2017; Edwards et al., 2016; Hanlon et al., 2015).

All else equal, one would expect that reducing the frictional repatriation tax costs on unremitted foreign earnings would "free up" this capital, particularly if it is held as cash and cash equivalents, to be used more efficiently in the firms' internal capital markets for operational investment. As such, I expect that firms may have increased their investments in capital expenditures, R&D, or acquisitions in response to the foreign earnings provisions of the TCJA. Therefore, I make the following hypotheses:

H1b: *MNCs with higher levels of pre-TCJA foreign cash are more likely to increase investments in capital expenditures in response to the TCJA[15].*

H1c: *MNCs with higher levels of pre-TCJA foreign cash are more likely to increase investments in R&D spending in response to the TCJA.*

H1d: *MNCs with higher levels of pre-TCJA foreign cash are more likely to increase expenditures for acquisitions in response to the TCJA.*

Another way for firms to return excess capital to investors is to pay down outstanding debt. While, as noted by Myers (1984) in his "pecking order", firms will prefer debt over equity when attracting external financing based primarily on the "tax shield" offered by the deductibility of the interest, some firms may have been employing strategies similar to those described in prior literature of accessing capital markets to borrow against foreign invested assets to fund domestic capital investment (Altshuler & Grubert, 2003; Blouin & Krull, 2009; Clausing,

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[15] While there currently isn't sufficient publicly available data at the firm level to test this hypothesis in a way that separates domestic from foreign investment in capital expenditures, R&D and acquisitions, the aggregate BEA so far would indicate that findings of increased investment by MNCs included in the study are more likely than not to be domestic investment.

2005; Waegenaere & Sansing, 2008). Firms that have employed these strategies will most likely show higher than average leverage (debt to total assets) pre-TCJA than those that have not. It is possible that these higher leverage firms would use repatriated funds to pay down (or issue less) debt.

In their survey of tax executives, Graham et al. (2010) found that debt reduction was the most reported intended use for funds repatriated during the AJCA tax holiday. However, it is worth noting that the none of the empirical studies using firm level financial data of the effects of the AJCA tax holiday reviewed above (Blouin & Krull, 2009; Clemons & Kinney, 2008; Dharmapala et al., 2011; Faulkender & Petersen, 2012) found a significant negative association between repatriation amount and leverage. More recently, nearly two-thirds of companies in a 2017 survey by Bank of America/Merrill Lynch regarding firms' intentions for how they would use cash repatriated after the TCJA indicated they would use the freed up funds to pay down debt (Garber, 2017). Further, given the effect of the significant decrease in the corporate tax rate in the TCJA on the "tax shield" from deducting interest expense and changes to interest deduction limitations, firms may be more inclined to use repatriated funds to paydown (or issue less) debt after the TCJA than as a result of the temporary tax holiday under the AJCA.

Taken together, these considerations lead to an expectation that firms with higher leverage pre-TCJA may benefit from using repatriated funds to paydown (or issue less) debt in the post-TCJA environment. Therefore, I make the following hypothesis:

> **H1e:** *MNCs with higher levels of pre-TCJA foreign cash are more likely to use their repatriatable funds to reduce their leverage by paying down debt or avoiding additional borrowing.*

Given the important difference between the temporary nature of the "tax holiday" afforded by the increased dividends received deduction in the AJCA and the more permanent "participation exemption" for qualified foreign earnings in the TCJA, it is possible that the pattern of repatriations will be different.

After the AJCA, there was a surge in repatriations after which repatriations in aggregate returned to pre-AJCA levels (Smolyansky et al., 2019). It is likely, in light of the fact that repatriation taxes are not expected to increase for the foreseeable future, that repatriations will have dropped off after an initial surge in fiscal 2018 but remain significantly higher than pre-TCJA levels, setting a "new normal" level for many firms. This pattern can be seen in the BEA data discussed earlier and presented in Figure 1. This behavior could result in some delayed effects of the foreign earnings provisions in the TCJA that would not be evident from the calendar year 2018 data alone. In light of the facts that the AJCA had a one-year window for repatriation and most of the research to date on the effects of the TCJA include only one year of post-TCJA data (or less), the primary findings of prior research that "freed up" or repatriated funds have been deployed primarily for share repurchases may only be part of the story.

There are several potential explanations for why repurchasing shares may be an attractive short-term option for firms that have capital freed up by a tax benefit. Repurchasing shares tends to be accretive to earnings per share (EPS), at least in the short run. Repurchasing shares may also be a preferred choice for firms with excess capital for which there is no immediate operational use. Further, firms with an ongoing need for a stock of their own shares for distribution through employee stock ownership plans or for senior management compensation plans that do not want to dilute EPS or the share values for current shareholders by issuing new shares have an incentive to use excess capital to repurchase shares. Repurchased shares can also

be held and used as acquisition currency should an appropriate target come available in the future. Thus, for firms with a stock of "locked out" foreign cash, it is possible that repurchasing shares is an action that takes less time to plan, receive board approval for and initiate than other potential uses of the capital freed up by reduced repatriation tax costs.

This may provide some explanation for the main findings of the post-AJCA research and the aggregate data in the initial post-TCJA period that firms appear to be using repatriated funds primarily for share repurchases. However, as MNCs continue to repatriate funds without any incremental repatriation tax costs, they may begin to use their "freed up" foreign capital for other uses. I posit that, with the possible exception of firms that have announced and established on-going share repurchase programs, repurchases of shares by firms that had built up higher levels of foreign cash pre-TCJA will decline in the second fiscal year following enactment. Thus, I make the following hypothesis:

> **H2a**: *The level of association between share repurchases and higher levels of pre-TCJA foreign cash will decline in the second reporting year post-TCJA from that in the first reporting year post-TCJA.*

Capital investments and R&D programs on the other hand, would normally be part of a company's long-term capital planning process. These plans normally run on multi-year cycles and normally are tied to strategic plans involving new production efforts or new product development. A one-year time horizon would most likely be too short to observe any meaningful change in these types of longer-term investment. In the case of the AJCA, the one-year window for repatriation would not have allowed for any new capital investment over and above what was already planned. This short time window could explain in part the results presented in Graham et al. (2010) indicating that most firms used their repatriated funds during the AJCA tax holiday for

permitted uses while reporting that they used other funds "freed up" for non-permitted uses like repurchases. It is also noteworthy that the aggregate balance of payments data from the BEA indicates that a smaller portion (approximately 30%) of the total $2.8 trillion estimated "locked out" foreign earnings from 2017 had been repatriated during 2018 compared to the roughly 62% (approximately $310 billion) repatriated during the one-year post-AJCA window out of the estimated $500 billion locked out just prior to the AJCA. This proportional difference in the amounts repatriated in the initial period after the tax change indicates that a significant portion of pre-TCJA UFE has been held back by U.S. MNCs, presumably pending a more long-range plan for more deliberately redeploying these funds and any future foreign earnings for which they can take advantage of the participation exemption. For these reasons, I believe it is likely that MNCs will continue to redeploy their foreign cash over a more extended period than that observed after the AJCA and that it is more likely that those funds will be used for capital investment, R&D and acquisitions as opposed to share repurchases in subsequent years.

As such, I make the following hypotheses:

H2b: *The level of association between investment in capital expenditures by MNCs and higher levels of pre-TCJA foreign cash will increase in the second reporting year post-TCJA from those in the first reporting year post-TCJA.*

H2c: *The level of association between investment in R&D expenditures by MNCs and higher levels of pre-TCJA foreign cash will increase in the second reporting year post-TCJA from those in the first reporting year post-TCJA.*

H2d: *The level of association between investment in acquisitions by MNCs and higher levels of pre-TCJA foreign cash will increase in the second reporting year post-TCJA from those in the first reporting year post-TCJA.*

CHAPTER 3: RESEARCH DESIGN, SAMPLE AND DATA

The present study is focused on examining the financial disclosures regarding firms'
foreign cash holdings in the period prior to enactment of the TCJA and the post-TCJA behavior
of MNCs with higher proportional pre-TCJA foreign cash holdings. I expect, based on evidence
from prior research, that firms with higher proportional foreign cash balances have accumulated
those balances offshore primarily for tax avoidance or deferral purposes. As evidenced by Rego
(2003), firms that practice the most tax avoidance tend to be larger firms with the greatest
financial flexibility and opportunities for tax planning. These firms will be most affected by the
transition tax in the TCJA and are most likely to repatriate and/or redeploy that cash in the post-
TCJA period. The sample for the present study is comprised of S&P 500 constituent firms
included in the index for all five years in the study period (excluding financial services and
utilities). This sample includes large firms with greater financial flexibility and tax planning
sophistication.

3.1 Replication and extension of Beyer et al. (2020)

The tests of the hypotheses listed in the previous chapter are, in large part, a replication of
the tests performed for the main analysis and difference in differences analysis in BDMR.

As discussed in chapter 2, for their main analyses, BDMR estimate a series of regression
models, hereafter referred to as the "BDMR model", to examine the relationship between
shareholder payouts (dividends and repurchases) or capital expenditures post-TCJA and the
firm's proportional holdings of cash in foreign subsidiaries in 2014, pre-TCJA. BDMR
estimated their model using a sample of financial data from 400 MNCs for the calendar years
2015, 2016 and 2018. Their sample included firms in Compustat reporting foreign cash balances
for calendar year 2014 with the requisite data for the variables in the model.

The BDMR model is as follows: (Beyer et al., 2020, p. 11)

$$Expenditure_{i,t} = \alpha_0 + \alpha_1 ForCash_i + \alpha_2 Post_t + \alpha_3 ForCash_i \times Post_t +$$

$$\alpha_4 DomCash_i + \alpha_5 Book\ ETR_i + \alpha_6 Cash\ ETR_i + \alpha_7 Loss_{i,t} + \alpha_8 Size_i + \alpha_9 Earnings_{i,t} +$$

$$\alpha_{10} Cash\ Flow_{i,t} + \alpha_{11} Leverage_{i,t} + \alpha_{12} MTB_{i,t} + \alpha_{13} SalesGrowth_{i,t} + \alpha_{14} CapEx2014_i +$$

$$\alpha_{15} RD_{i,t} + \alpha_{16} ACQ_{i,t} + \alpha_{17} FirmAge_{i,t} + \alpha_{18} RE/BV_{i,t} + \alpha_{19} Returns_{i,t} + \alpha_{20} Options_{i,t} +$$

$$\alpha_{21} St.Dev.Earnings_{i,t} + \alpha_{22} Dividends_{i,t-1} + \alpha_{23} Repurchases_{i,t-1} + \varepsilon$$

The dependent variable $Expenditure_{i,t}$, is defined as either shareholder payouts (total payout, dividends and repurchases) or capital expenditures, by firm by year. *Total Payout* is the sum of dividends paid and the cost of share repurchases scaled to total assets. *Dividends* is the cash dividends paid scaled to total assets. *Repurchases* is equal to the cost of purchases of common and preferred stock less any decrease in the redemption of preferred stock or less any decrease in preferred stock if the redemption value of preferred stock is missing. *CapEx* is capital expenditures scaled by total assets.

The independent variables of interest are foreign cash balances scaled to total assets reported for calendar yearend 2014 and an interaction term for these scaled foreign cash balances with a dummy variable "*POST*" indicating whether the dependent variable observations for time *t* are from a pre- or post-TCJA year. A significant positive coefficient on the interaction term would indicate a positive relationship between the post-TCJA- year payout or capital expenditure measure and the scaled 2014 foreign cash balance. The model included control variables related to other provisions in the TCJA and possible drivers for payouts and capital expenditures from prior literature. Where the dependent variable *Expenditure* is related to shareholder payout (total payout, dividends or repurchases), the BDMR model estimated a Tobit or censored regression

equation. Where *Expenditure* represents capital expenditures, the model estimates an ordinary

least squares regression excluding the controls for payout rather than a censored Tobit regression

as the values for capital expenditures are mostly non-zero. Table 4 in Appendix 1 contains a

complete list of the BDMR model variables and their definitions.

The present study extends the tests in BDMR in three important ways. First, the present

study includes both calendar year and non-calendar year fiscal year reporting entities. There are

several non-calendar fiscal year reporting entities that held significant cash and cash equivalents

balances in foreign subsidiaries that were excluded from the BDMR analyses, the inclusion of

which could have significant effects on the results. Second, the present study includes two years

of post-TCJA data as opposed to the two years pre-TCJA with one year post-TCJA approach in

BDMR. This allows for a more fulsome test of the hypotheses and brings to light the differences

between the effects observed in the initial post-TCJA year and any longer-term effects. Third,

the present study expands the list of potential management actions examined for firms holding

proportionally higher foreign cash balances prior to the TCJA. Beyer et al. (2020) included total

shareholder payouts (including dividends and share repurchases) and capital expenditures in their

dependent variable *"Expenditure"*. These are examined in the present study as well. In addition,

the present study examines the relation between pre-TCJA foreign cash holdings and R&D

expenditures *(RD)*, business acquisitions *(ACQ)* and any decreases in debt or debt issuance

(Leverage).

The model for the present study also differs from BDMR in setting the independent

variable of interest, *ForCash,* equal to foreign cash holdings at the end of the firm's fiscal year

2017 (FY 2017) scaled to total assets at that same point, where BDMR used balances from

calendar year 2014. I believe that the FY 2017 foreign cash balance is the most relevant for the

present study for a few reasons. First, despite the fact that some form of tax reform including a

potential shift to a territorial system had been discussed in Congress for a few years prior the

TCJA, significant elements continued to change very late in the process and firms ultimately had

very little advanced knowledge of the potential provisions in the TCJA. Second, the cash and

operating asset balances on which the transition tax was based were fixed at one of two dates in

late 2017, not of the firm's choosing. Firms had little or no time to do tax planning or

redistribute assets to limit the impact of the transition tax. Lastly, the information in the

aggregate data from the BEA and in some of the firm-specific lists in studies prior to the TCJA

(McKeon, 2018; Meisler, 2017; Phillips et al., 2017) indicate that U.S. MNCs continued to hold

(and accumulate) significate amounts of cash and cash equivalents in foreign subsidiaries.

Therefore, the available evidence suggests that firms continued to accumulate cash in foreign

subsidiaries and had very little time or incentive to redistribute those foreign cash holdings prior

to the enactment of the TCJA in December of 2017.

Lastly, while not an extension of BDMR, the model employed in the present study

includes control variables for the management actions added to the definition of the dependent

variable "*Expenditure*" that were not in the BDMR model. These controls were chosen based on

their inclusion in or findings of prior research. Specifically, controls are changed or added

related to tax rates, interest deduction limitations and lagged investment controls for specific

definitions of *Expenditure*. The pre-TCJA effective tax rates in BDMR are replaced by a measure

of the marginal tax rate (MTR) as measured in Graham (1996). Marginal tax rates are typically

seen as a more effective measure for examining the potential tax effects of management

decisions. Further, given the preliminary findings of Carrizosa, Gaertner, and Lynch (2020)

regarding the relationship between post-TCJA leverage and the interest limitation provisions in

the TCJA, the equation estimated in the present study includes a control variable, *IntLimPre*, indicating whether a firm had interest expense exceeding 30% of EBITDA in the pre-TCJA period[16]. Further, given the addition of R&D expenditure and expenditures for business acquisitions to the potential investment alternatives being examined, the control variables for competing investment or management choices are adapted as follows. Where an independent control variable for investment or leverage matches the dependent variable being estimated, the control variable is changed to a Pre-TCJA measure of the dependent variable; all other control variables remain as defined in the estimated equation below. For example, when the dependent variable being estimated for *Expenditure* is R&D expenditure, the control variable $RD_{i,t}$, R&D expenditure in time t scaled to total assets, is replaced with $RDPre_i$, average annual R&D expenditure in the pre-TCJA period (FY 2015 and FY 2016) scaled to total assets. The same approach is applied for the *Leverage, CapEx, and ACQ* control variables in models where these variables are the dependent variable.

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[16] The TCJA contains a provision modifying section 163(j) of the IRC limiting the tax deductibility of interest expense to 30% of a taxpayer's "adjusted taxable income" which is essentially equal to earnings before interest, taxes, depreciation, and amortization (EBITDA). This measure will change in 2022 to no longer add back depreciation and amortization expense.

Carrizosa et al. (2020) found preliminary evidence that firms that would most likely be affected by the new interest limitation, those with pre-TCJA interest expense greater than the new 30% of EBITDA limitation, reduced leverage in the first year post-TCJA, mainly through reduced debt issuance, more than those that would most likely not be affected.

3.2 Proposed model

The hypotheses enumerated at the end of Chapter 2 are tested by estimating a regression model that substantially replicates the BDMR model with the extensions and differences noted above.

The regression model is as follows:

$$Expenditure_{i,t} = \alpha_0 + \alpha_1 ForCash_i + \alpha_2 Post1_t + \alpha_3 ForCash_i \times Post1_t +$$

$$\alpha_4 Post2_t + \alpha_5 ForCash_i \times Post2_t + \alpha_6 DomCash_i + \alpha_7 MTR_i + \alpha_8 Loss_{i,t} + \alpha_9 Size_i +$$

$$\alpha_{10} Earnings_{i,t} + \alpha_{11} OpCashFlow_{i,t} + \alpha_{12} MTB_{i,t} + \alpha_{13} SalesGrowth_{i,t} + \alpha_{14} Leverage_{i,t} +$$

$$\alpha_{15} CapExPre_i + \alpha_{16} RD_{i,t} + \alpha_{17} ACQ_{i,t} + \alpha_{18} FirmAge_{i,t} + \alpha_{19} RE/BV_{i,t} + \alpha_{20} Options_{i,t} +$$

$$\alpha_{21} Dividends_{i,t-1} + \alpha_{22} Repurchases_{i,t-1} + \alpha_{23} IntLimPre_i + \varepsilon \qquad \textbf{(1)}$$

The dependent variable, *Expenditure*$_{i,t,}$ shown in the model in Equation (1) above is a generic name for variables representing the set of potential post-TCJA uses of built up pre-TCJA foreign cash balances that I estimate using that equation. These variables include *Total Payout, Dividends, Repurchases, CapEx, RD, ACQ and Leverage.* These variables are all are measured scaled to total assets at the end of fiscal year 2017. *Total Payout* is the sum of dividends paid and the cost of share repurchases scaled to total assets. *Dividends* is equal to the cash dividends paid scaled to total assets. *Repurchases* is equal to the cost of purchases of common and preferred stock less any decrease in the redemption of preferred stock or less any decrease in preferred stock if the redemption value of preferred stock is missing. *CapEx* is capital expenditures scaled by total assets. *RD* is total R&D expense scaled to total assets. *ACQ* is cash spent on mergers and acquisitions scaled to total assets. *Leverage* is long-term debt scaled to total assets. Similar

to BDMR, where *Expenditure* represents shareholder payout, R&D expenditures, or acquisitions, the equation above is estimated using a Tobit regression procedure. Tobit models are appropriate for estimating these variables as they will generally have values between 0 and 1 with 0 a distinct possibility as some firms will not have made any payouts, R&D investments, or acquisitions in a given year. Equation (1) above is estimated using a standard ordinary least squares regression procedure where *Expenditure* represents capital expenditures or leverage as these variables will tend to have non-zero values.

The primary independent variable of interest, *ForCash*, is the balance of cash and cash equivalents held in foreign subsidiaries (hand-collected from 10-Ks) at the end of fiscal year 2017, defined consistently with the data item "fyear" in Compustat[17]. (The rationale for using fiscal 2017 rather than 2014 as used in BDMR is discussed above.) *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. I employ interaction variables for *ForCash* with *Post1* and *Post2*, respectively, in an attempt to isolate the post-TCJA reporting year in which the effects of the law are indicated (or not) and to examine if the effects in future periods are different from those in the period immediately after enactment. A positive and significant estimated coefficient on the interaction of $ForCash_i \times Post1_t$ indicates support for the related hypothesized relationship of the dependent variable being estimated in the first reporting year following enactment. and pre-TCJA *ForCash*. Similarly, a positive and significant estimated coefficient on the interaction of $ForCash_i \times Post2_t$ indicates support for

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[17] Fiscal years ending on or before May 31 revert to an "fyear" of the previous four-digit year. For example, a company with a fiscal year end of April 30, 2019 would show an "fyear" value of 2018 while a company with a fiscal year ending on June 30, 2019 would show an "fyear" of 2019.

the related hypothesized relationship of the dependent variable of interest in the second reporting year following enactment and pre-TCJA *ForCash*. This second-year interaction will provide information about whether the observed relationships (if any) from year TCJA+1 are also present or are different in year TCJA+2. *DomCash* represents the pre-TCJA domestic cash balance and is equal to total cash and cash equivalents in fiscal year 2017 scaled to total assets less *ForCash.* *DomCash* is essentially a control variable in that it represents a potential source of funds for the *Expenditure* other than foreign cash holdings.

The control variables included in the model are mainly consistent with BDMR and prior literature examining capital investment and R&D expenditure (Canace, Jackson, & Ma, 2018), acquisitions (Hanlon et al., 2015), shareholder payouts (Brawn & Šević, 2018; Nessa, 2017), and leverage (Beyer, Downes, & Rapley, 2017; Carrizosa et al., 2020).

To control for potential effects of the reduction in the U.S. corporate tax rate for all firms I have included *MTR* which is the firm's marginal tax rate in their 2016 fiscal year; the reporting year just prior to the year including the estimated deferred tax effects of the TCJA (TCJA-1). Firms with higher MTR will benefit most from the corporate tax rate reduction. Marginal tax rates, if they can be effectively estimated, are generally viewed as a more appropriate measure for estimating the potential tax effects of management actions. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in that table, MTR is estimated using the firm's effective tax rate for fiscal year 2016 derived from data in Compustat. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise to control for firms less likely to benefit from the tax rate reduction due to losses and/or net operating loss carryforwards.

The next set of control variables represent firm characteristics that could influence firms' payout, investment, and borrowing behaviors overall regardless of their holdings of cash and cash equivalents in foreign subs. *Size* is equal to the natural logarithm of total assets. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat scaled to total assets. *OpCashFlow* is the cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1*, divided by sales from time *t-1*. *Leverage, CapEx, RD and ACQ* are as defined above. In instances where these variables are the same as the dependent variable being estimated, the matching independent variable will be pegged to the same variable for the pre-TCJA years as described above. For example, the variable *CapExPre* is the average capital expenditures for the pre-TCJA years, FY 2015 and 2016, scaled to total assets.

The next set of controls are consistent with prior research and are expected to be positively associated with payouts to shareholders. *FirmAge* is the natural logarithm of the number of years the firm has been included in the Compustat database. *FirmAge* has been found to be positively associated with shareholder payouts, dividends in particular. *RE/BV* is equal to retained earnings scaled to the book value of equity and is a measure of firm maturity and dividend capacity. *Options* is a proxy indicating the level of stock options outstanding indicating an anti-dilutive incentive to repurchase shares. *Options* is measured consistent with Cuny, Martin, and Puthenpurackal (2009) and Nessa (2017) and is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. I have included one-year lagged measures for $Dividends_{t-1}$ and $Repurchases_{t-1}$ as lagged payout

measures have been included in prior research and could be expected to be positively associated with current year payouts[18].

The final control variable in the model, *IntLimPre*, is a control related to the potential effect of the new limitations on interest deductibility in the TCJA on firms' leverage decisions. Consistent with Carrizosa et al. (2020), *IntLimPre* is a binary variable indicating equal to one if the firm had interest expense greater than 30% of EBITDA, the new limit for deductibility in the TCJA, in fiscal reporting year 2016, the reporting year prior to the enactment of the TCJA, and zero otherwise. Firms with a value of one for this variable are those most likely to be affected by the new limitations. Reductions in their *Leverage* measure may be associated with their exposure to the interest limitation rather than, or in addition to, their level of foreign cash holdings.

3.3 Sample and Data

Compustat was used to gather most of the data necessary to compute the variables in Equation (1). Holdings of cash and cash equivalents in foreign subsidiaries were hand-gathered from sample firms' forms 10-K. A Python script was used to conduct a keyword search of the liquidity discussion in the management discussion analysis (MD&A) and other disclosures in the sample firms' forms 10-K on the EDGAR database to facilitate hand-gathering of that data. Foreign income tax and foreign pre-tax income from Compustat are used to derive the foreign ETR for the calculation of the REPAT variable used in the cross-sectional analysis partitioning

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[18] I have excluded the control variable from the BDMR model *St.Dev.Earnings* as the lagged dividends and repurchases control variables showed higher positive coefficients and statistical significance for dividends and repurchases, respectively in Beyer et al. (2020).

the final sample based on the pre-TCJA repatriation tax costs. Consistent with BDMR and other prior research, all continuous variables are Winsorized at the 1st and 99th percentiles.

The sample for the present study is drawn from constituent firms in the S&P 500 for all five fiscal years in the study period (2015 -2019). Consistent with prior research, financial firms (sic codes 6000 to 6999) and utilities (sic codes 4900 to 4999) are excluded from the sample as these firms operate in industries where regulation may limit their ability to use current capital resources for the potential uses being examined. I chose to limit the sample to S&P 500 firms in part to make the hand-gathering of foreign cash holdings data more tractable. The S&P 500 should, however, provide a sufficient sample in that it includes many of the largest U.S. MNCs and domestic public entities and would include the majority of firms with significant foreign cash holdings. The final sample includes all S&P 500 constituent firms that were included in the index for all five years included in the study period (2015 through 2019) that disclosed cash balances in foreign subsidiaries in their FY 2017 financial reports and the requisite data for the variables in Equation (1) described in section 3.2 above.

Based on data from Compustat, there were 387 firms that had been included in the S&P 500 for all five years in the period examined (FY 2015 to FY 2019). After excluding utilities and financial firms, there are 277 firms for which data could be included in the study. Of these, 115 firms (41.5%) provided sufficiently specific disclosure of their cash and cash equivalents

balances[19] held by foreign subsidiaries or in foreign jurisdictions at fiscal yearend 2017[20]. The

amount of foreign cash (and cash equivalent) holdings disclosed by these firms totaled

approximately $610 billion. These 115 firms are included for the main tests of hypotheses in the

present study provided they also included sufficient disclosure of the other data needed for all

variables in Equation (1). The final sample includes 453 firm years.

The summary descriptive statistics for the final sample for all variables in Equation (1)

are shown in Table 1.

[insert Table 1 here]

Table 2 provides a correlation matrix for the variables included in the main tests of the

hypotheses in the present study. The Pearson correlation coefficients are reported with those that

are statistically significant at the 10% level bolded and italicized. The positive correlations and

statistically significant correlations between the interaction variables and *Total Payout,*

Repurchases, and *RD,* particularly for the *Post2 X ForCash* variable, are noteworthy and give an

initial indication of support for some of the hypotheses. Surprisingly, there are negative

correlation coefficients for some of the *Expenditure* variables with *Post1* and *Post2*, indicating

that these types of shareholder payouts or investments may not have increased as expected in the

post-TCJA years for the firms that disclosed foreign cash balances at FYE 2017. The relatively

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[19] These disclosures were primarily found in the liquidity disclosures in the Management
Discussion and Analysis in the firms' 10K filings. Some of the amounts disclosed include marketable
securities. These amounts have been included as foreign cash balances for the purposes of the present
study.

[20] Another 25 firms included some discussion of foreign cash balances without disclosing an
amount or percentage that could be used for inclusion in the study. There 140 firms (50%) that made no
disclosure. These firms were excluded from the main tests and were not assumed to hold zero foreign
cash balances.

large positive correlations at statistically significant levels for *Total Payouts* and its components, *Dividends* and *Repurchases*, as well as those for the *Expenditure* variables and their lagged or pre-TCJA average counterparts are in line with expectations.

[insert Table 2 here]

3.4 Analyses performed

3.4a) Replication and extension of BDMR

In order to isolate any effects of sampling differences on the results of Equation 1 and the BDMR model, I first conduct a series of tests using the BDMR model. The first test attempts to replicate the estimation of the BDMR Model for the calendar year reporting firms in the final sample that met the criteria for inclusion in the BDMR model (Replication). There are 201 firm years included in the sample that meet those criteria. The smaller sample is primarily due to excluding fiscal year reporting firms and including one less year of post-TCJA data. Thereafter, I re-estimate the BDMR Model from the Replication including both calendar year and fiscal year reporting entities from the final sample that reported a foreign cash balance in fiscal 2014 (Extension 1). The sample for Extension 1 includes 333 firm years. Next, I re-estimate the BDMR model from Extension 1 expanding the post-TCJA years to include data for the second fiscal year following enactment of the TCJA (Extension 2). The sample for Extension 2 includes 441 firm years. These tests are intended to help to isolate significant differences, if any, between the results of Equation (1) in the main tests for the present study, and the results and findings of BDMR that may be due to adding fiscal year reporting entities and an additional year of post-TCJA data to the analysis. It should be noted here that while BDMR includes industry fixed effects in their analysis, I chose not to include any industry fixed effects given the smaller size of and exclusion of specific industries, utilities and financial services, from my final sample.

3.4 b) Main tests of hypotheses

The next step is to estimate Equation (1) to test the hypotheses enumerated in Chapter 2 and to examine the three most significant extensions of BDMR in the present study. These extensions include: (1) expanding the definition of *Expenditure* to include R&D expenditures, acquisitions, and leverage reduction, (2) using FY 2017 foreign cash balances as the most appropriate indicator of firms most likely to be affected by the TCJA, and (3) examining any differences in relationships of pre-TCJA foreign cash holdings between those observed for the first post-TCJA year (*Post1)* and the second post-TCJA year (*Post2)*.

3.4 c) Cross-sectional analysis for tax-induced foreign cash holdings

Prior research on the "lockout effect" has shown that firms with a lower foreign effective tax rate (ForETR) vis-à-vis their worldwide tax rate were more likely to have balances of "trapped" foreign earnings or cash (Foley et al., 2007; Hanlon et al., 2015; Laplante & Nesbitt, 2017). As such, firms with higher pre-TCJA repatriation tax costs are more likely to have been holding more of their foreign earnings offshore. These firms are most likely the "targets" of the foreign tax provisions in the TCJA. I perform a cross-sectional analysis of the of the results of the model in Equation (1) using a proxy for pre-TCJA repatriation tax costs to partition the sample between firms whose foreign cash holdings are most likely to have been tax-induced and those that are less likely to have been tax-induced. To perform this analysis, I calculate a variable, *REPAT,* equal to the difference between the firm's MTR and ForETR for their fiscal 2016 (TCJA-1) reporting year. I use the variable *REPAT* to partition the sample into two groups: firms with *REPAT* above or below the median for this measure. Equation (1) is run for each of the dependent variables for each group and the results compared between these two groups.

3.4 d) Difference-in-Differences Analysis: MNC versus Domestic

Lastly, I conduct a difference-in-differences analysis similar to one performed by BDMR whereby I replace the *ForCash* variable in Equation (1) with a variable called MNC_i to indicate if a sample firm is an MNC or a purely domestic entity. MNC_i is an indicator or dummy variable that is equal to one if the firm had foreign pre-tax earnings in either of the two fiscal years prior to fiscal reporting year including the enactment of the TCJA, and zero otherwise. Since both MNCs and domestic firms are impacted by the tax rate, interest limitation, net operating loss and depreciation provisions of the TCJA, a significant positive association between the interaction terms $MNC \times Post1$ or $MNC \times Post2$ and the relevant variable for *Expenditure* would support an assertion that any findings from the main analysis were related to the foreign tax provisions and not the other provisions in the TCJA.

The results of this test for differences between MNC firms and non-MNC firms are inconclusive for asserting that the findings from the main analysis are primarily related to the foreign tax provisions of the TCJA.

The inconclusive results of the difference-in-differences analysis lead me to conduct an additional robustness test to examine the relation between foreign cash holdings disclosed by MNC firms and *Repurchases*, *RD* and *CapEx* for the broader sample of firms including those that did not disclose any foreign cash holdings pre-TCJA. One of the core premises behind the hypotheses in the present study is an assumption, supported by the findings of prior research, that firms holding higher proportional foreign cash balances pre-TCJA were most likely doing so to avoid repatriation tax costs. These firms are more likely to be affected by the foreign earnings provisions in the TCJA of interest in this study. They are essentially the "targets" of the foreign

earnings provisions. At the same time, all MNCs could potentially be affected by the other

provisions of the TCJA. This additional analysis provides a view of the potential effect of the

foreign earnings provisions on those MNCs that are more likely to be directly impacted by those

provisions as opposed to the other provisions of the TCJA when the sample is expanded to

include firms that did not hold or did not disclose a foreign cash balance at FYE 2017. Of the

277 firms in the full sample, 238 are identified as MNCs of which 110 disclosed foreign cash

holdings at FYE 2017. This yielded a sample of 948 MNC firm years of which 438 are for

MNCs disclosing foreign cash holdings at FYE 2017[21]. The foreign cash amount is set equal to

zero for the MNCs that did not provide a foreign cash holdings disclosure in their FYE 2017 10K

filing.

In this test, I estimate the regressions represented by *Equation (1)* for *Repurchases*, *RD*

and *CapEx* but only for firms designated as MNC for the purposes of the initial difference-in-

differences test.

The results of the difference-in-differences analysis and the subsequent robustness test

are presented in chapter 4.

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[21] Some of the firms disclosing foreign cash holding for FYE 2017 included in the main tests did
not have a foreign earnings amount included in Compustat for FY 2015 or FY 2016 and were not
designated as MNC in the subsequent tests.

CHAPTER 4: RESULTS

4.1 Replication and Extensions of the BDMR

The results and tables for the Replication, Extension 1 and Extension 2 using the BDMR model are presented in more detail in Appendix 1.

The results of the Replication indicate that while the sample for the present study contains fewer firms and firm years from those in BDMR, the principal finding is consistent with BDMR. The results of the Replication are compared side by side with the results from the main tests in BDMR in Table 1 in Appendix 1. The results indicate that, the main findings are consistent. The models both show a statistically significant association for the *ForCashXPost* interaction term for *Total Payout*, primarily driven by *Repurchases*. The coefficient for this term is larger and at a more statistically significant level in the Replication (0.365, p< 0.01) than in BDMR (0.116, p<0.1) but is mainly consistent. The results for the control variables are also largely consistent between the two models. This indicates that, while the sample for the current study is different from and smaller than the one used in the BDMR study, differences in the results on the independent variables of interest are not primarily due to differences in the sample.

Further, the results of Extension 1, where fiscal year reporting firms that disclosed foreign cash holdings at FYE 2014 are added to the Replication model, produces a coefficient for the *ForCash X Post* interaction term (0.226) that is more in line with but still higher than the BDMR main analysis and at a more statistically significant level (p<0.01 versus p<0.1). The results of Extension 1 are shown in Table 2 in Appendix 1. Taken together, the results of the Replication and Extension1 indicate that the choices for determining the final sample do not materially affect the results of the analyses.

Extending the BDMR model one more level to include a second post-TCJA year to the study period (Extension 2) shows that *Total Payout* and *Repurchases* continue to show a statistically significant positive association for the interaction term for post-TCJA years (*Post1* or *Post2*) with disclosed foreign cash holdings at FYE 2014. The results of Extension 2, which can be seen in Table 3 in Appendix 1, show that the interaction term for post-TCJA year 1 (*ForCash X Post1)* showed coefficients of 0.211 and 0.235, for *Total Payout* and *Repurchases*, respectively, both at a p<0.01 significance level. In the second post-TCJA year in the Total Payout category, *Dividends* also show a small but statistically significant association for the interaction term (coeff. 0.041, p<0.05). The coefficient for *Total Payout* increases to 0.257 in post-TCJA year 2, due in part to the increase in the coefficient for *Dividends*, while the coefficient for *Repurchases* declines slightly to 0.178, both at a significance level of p<0.01. These results suggests that there are at least some differences in behavior of MNCs that disclosed foreign cash balances at FYE 2014 from the first post-TCJA year to the second. Further analysis of these effects is left to the results of the main tests for the present study based on the estimations of Equation (1) using the final sample of firms with the primary independent variables of interest based on disclosed foreign cash holdings for FYE 2017.

4.2 Main tests of hypotheses

The results of the regressions estimated for the main tests of the hypotheses for the present study are shown in Table 3 below. The Table is presented in three panels: Panel A shows the results of the regressions for the tests related to *Total Payout, Dividends and Repurchases*, Panel B shows the results of the regressions for *RD* and *ACQ*, and Panel C shows the results of the regressions for *Leverage* and *CapEx*.

The regressions estimated for *Total Payout*, *Dividends*, *Repurchases*, *RD*, and *ACQ* are Tobit regressions censored at a lower bound of zero for these dependent variables. Tobit regressions were estimated for these variables in an attempt to account for the endogeneity reflected by the choice that firms have regarding whether or not to make these payouts or investments which could lead to a cluster of zero values in the data for these variables. For the payout variables *Dividends* and *Repurchases*, there were 75 and 55 observations censored at zero, respectively. There were 14 observations censored at the *Total Payout* level, indicating that a number of firms chose one payout form or the other, but not both. There were 177 and 175 observations censored at zero for *RD* and *ACQ,* respectively. The regressions estimated for *CapEx* and *Leverage* were standard OLS regressions as neither of these variables exhibited a cluster of values at zero in the data for the final sample, making standard OLS a more appropriate choice over Tobit regressions for these variables.

[insert Table 3 here]

The primary independent variables of interest in the regression estimations are the two interaction terms *ForCash X Post1* and *ForCash X Post2.* A review of the results for these variables shows a positive and statistically significant association with *ForCash X Post1* for *Total Payout* (coeff. 0.150, $p < 0.05$), driven by *Repurchases* (coeff. 0.171, $p < 0.01$). The results for the second post-TCJA year show three *Expenditure* variables with positive associations with the *ForCash X Post2* interaction term at a statistically significant level: *Total Payouts* (again driven by *Repurchases*)*, RDExp,* and *CapEx*. Counter to my expectations and the trend indicated by the aggregate data examined earlier, the association for *Total Payouts* to pre-TCJA foreign cash holdings actually increases in the *Post2* year as the coefficient for *Repurchases* increases to 0.284 at a $p < 0.01$ significance level. Based on these results, Hypothesis 1a that *Repurchases*

would increase in response to the post-TCJA period is supported. However, Hypothesis 2a is not supported in that the association between pre-TCJA foreign cash holdings and shareholder payouts, *Repurchases* in particular, increased rather than decreasing as expected. There is support for Hypotheses 1b and 2b as there is a statistically significant positive association between *CapEx* and the interaction term in the *Post2* year (coeff. 0.015, p<0.1). There is also support for Hypotheses 1c and 2c as there is a statistically significant positive association between *RD* and the interaction term in the *Post2* year (coeff. 0.027, p<0.01). I do not find support for Hypotheses H1d or H2d as there are no statistically significant associations shown between the *ForCashXPost1* or *ForCashXPost2* interaction terms and acquisition expenditures (*ACQ*). Lastly, there is no support found for Hypothesis H1e in that there are no statistically significant associations found between the interaction terms and Leverage for either post-TCJA year. In fact, *Leverage* appears to increase in the post-TCJA period rather than decrease as expected for firms disclosing foreign cash balances at FYE 2017.

4.3 Cross-sectional analysis for tax-induced foreign cash holdings

Consistent with BDMR, I perform a cross-sectional analysis of the of the results of the model in Equation (1) using a proxy for pre-TCJA repatriation tax costs to partition the sample between firms whose foreign cash holdings are most likely to have been tax-induced and those that are less likely to have been tax-induced. To perform this analysis, I calculate a variable, *REPAT,* equal to the difference between the firm's MTR and foreign effective tax rate (ForETR) for their fiscal 2016 (TCJA-1) reporting year. Where MTR is missing, the firm's global ETR is used in place of MTR for calculating *REPAT*. I partition the sample into two groups: firms with *REPAT* values above or below the median for this measure. Equation (1) is run for each of the dependent variables for each group and the results compared between these two groups.

The results for *Repurchases*, *RD,* and *CapEx,* the *Expenditures* on which statistically significant associations were found for the pre-TCJA foreign cash disclosed and post-TCJA year interaction terms, are shown in Table 4. The columns are labeled REPAT=1 for the results for firms with values of *REPAT* at or above the median and REPAT=0 for those below.

[insert Table 4 here]

For *Repurchases*, the results show positive and statistically significant associations with the interaction variables for both post-TCJA years. Consistent with the main tests, the coefficients are higher for the interaction terms in the *Post2* year than *Post1* for both groups. However, the coefficients are higher for the REPAT=1 group in both post-TCJA years. For the *ForCash X Post1* interaction, the coefficient for the group above the median for *REPAT* is 0.196 (p<0.01) versus 0.130 (p<0.05) for the below the median group. For the *ForCash X Post2* interaction, the coefficient is 0.314 for the higher *REPAT* group versus 0.216 for the lower group, both at p<0.01 significance level. The higher coefficients for the higher *REPAT* group indicate that while there was a positive association between pre-TCJA foreign cash holdings and post-TCJA share repurchases in general, firms whose foreign cash holdings were more likely to be tax-induced showed a higher propensity to repurchase shares than those whose foreign cash may have been held for less tax driven reasons.

For *RD*, the results are a bit more sharply contrasted. Recall that in the main tests *RD* is positively associated with pre-TCJA foreign cash holdings only in the *Post2* year. The coefficient for *ForCash X Post2* was 0.027 at a p<0.01 significance level. In Table 4, a statistically significant positive association between *RD* and *ForCash X Post2* is only present in the higher *REPAT* group (coeff. 0.036, p<0.01). This suggests that firms with pre-TCJA foreign

cash holdings that were more likely to be tax-induced were more likely to have increased their proportional R&D expenditure after the initial post-TCJA year. This implies they may have held back and subsequently deployed some of their previously "trapped" cash for this purpose.

For *CapEx*, the main tests showed a positive association between the interaction term for the second post-TCJA year (*ForCashXPost2*) at a 10% significance level. In Table 4, coefficients for both groups for the interaction term in the first post-TCJA year are negative, and neither is statistically significant at the 10% level. The coefficients turn positive in the second post-TCJA year, but here again, neither is significant at the 10% level. The positive coefficient is higher in the higher repatriation tax cost group (0.022) and has a higher t-value (1.41), but that t-value does not meet the threshold for a 10% significance level for drawing any inferences regarding any effect of repatriation tax rates on the association between pre-TCJA foreign tax holdings and making post-TCJA investments in capital expenditures.

4.4 Difference-in-Differences Analysis: MNC versus Domestic

Using the full sample of 277 firms, I conduct a difference-in-differences test whereby the scalar variable for foreign cash at FYE 2017 is replaced by a binary indicator variable, MNC_i, in Equation (1). Firms are identified as *MNC* if they reported foreign earnings in their 10K filing for either FY 2015 or FY 2016. The variable MNC_i is equal to one if this condition is met, zero otherwise. The full sample includes 1,099 firm years, of which, 948 were identified as *MNC*. Replacing the foreign cash scalar variable with the *MNC* binary variable could provide evidence of whether the associations observed in the main tests hold for MNC (MNC_i=1) firms in general and whether those results are statistically significantly different from those for domestic or non-MNC (MNC_i=0) firms. The results of the difference-in-differences tests for the *Expenditures* for which statistically significant associations are found in the main tests, *Repurchases, RD and*

CapEx, are reported in Table 5. As in the main tests, the regression equations estimated for

Repurchases and *RD* are Tobit regressions and *CapEx* is a standard OLS model.

Since both MNCs and domestic firms are impacted by the tax rate, interest limitation, net

operating loss and depreciation provisions of the TCJA, while only MNCs are affected by the

foreign earnings provisions, a significant positive association between the interaction terms

$MNC \times Post1$ or $MNC \times Post2$ and the relevant variable for *Expenditure* would support an

assertion that any findings from the main analysis were related to the foreign earnings provisions

and not the other provisions in the TCJA.

[inset table 5 here]

The results of the difference-in-differences tests do not show any statistically significant

associations between the interaction terms for the two post-TCJA years and the *Expenditures*

examined. Therefore, while the main tests show a statistically significant association between

the level of pre-TCJA foreign cash holdings disclosed and post-TCJA *Repurchases*, *RD* and

CapEx, the results of the difference-in-differences test performed do not show this association at

the full sample level. The lack of statistically significant results may be due to the overweighting

of MNC firms in the sample taken from the S&P 500 or to a statistical power issue in the test

itself or both. The possibility of a statistical power issue arises due to the inclusion of a binary

measure in the interaction term (MNC) in place of a scalar one (*ForCash*). It may well be the

case that the foreign tax provisions are the primary driver of the effects observed in the main

tests, but the results of the difference-in-differences test performed are not, in themselves,

sufficient to support this assertion.

Given this result, I perform an additional robustness test to examine the relation between pre-TCJA foreign cash holdings disclosed and *Repurchases*, *RD* and *CapEx* for MNC firms within the full sample. In this test, I estimate regressions represented by Equation (1) for *Repurchases*, *RD* and *CapEx* but only for firms designated as MNC for the purposes of the initial difference-in-differences test. The results of this test are shown in Table 6.

[insert table 6 here]

Focusing on the interaction terms once again, the results show that when the sample is expanded to include MNC firms that did not disclose foreign cash holdings, the statistically significant positive associations between pre-TCJA foreign cash holdings and *Repurchases, RDExp* and *CapEx* are still present. The coefficient for *Repurchases* is positive in both the TCJA+1 (0.102) and TCJA+2 years (0.225), at a $p<0.05$ and $p<0.01$ significance level, respectively. The coefficients for *RD* and *CapEx* are both positive in the *Post2* year at significance levels of $p<0.01$ and $p<0.05$, respectively. These results are in line with the results of the main tests and cross-sectional tests for these *Expenditures* and suggest that the results of these tests would be robust across a larger sample of MNC firms, including MNC firms that did not disclose pre-TCJA foreign cash holdings.

Thus, the presence and scale of pre-TCJA foreign cash holdings are a stronger predictor of these post-TCJA expenditures than MNC status alone. Given that unrepatriated foreign earnings were the target of the foreign tax provisions of interest in the study, and that firms with higher proportional pre-TCJA foreign cash holdings were more likely to have unrepatriated foreign earnings, this result indicates that it is likely that the associations observed in the main tests are due to the foreign tax provisions rather than other provisions of the TCJA.

CHAPTER 5: DISCUSSION and CONCLUSION

5.1 Discussion

The results of the present study offer interesting insights into the potential effects of the provisions of the TCJA focused on foreign earnings of U.S. MNCs. The study contributes to the current body of research in that it confirms some of the findings from prior research and the initial findings of preliminary research into the effects of the TCJA on MNCs, particularly as it relates to shareholder payouts. It further extends this body of research by bringing to light some potential longer-term effects of the "permanent" foreign earnings tax holiday in the TCJA on MNCs' investment behavior, particularly related to R&D and capital expenditures.

The results regarding shareholder payouts, primarily in the form of repurchases of shares by firms in the post-TCJA period are consistent with the findings of preliminary studies and examinations of aggregate data in the initial period after the enactment of the TCJA. However, the statistically significant positive associations observed for R&D expenditures and capital expenditures with pre-TCJA foreign cash holdings support the notion that there may be longer-term effects from the more permanent nature of the foreign earnings tax holiday beyond what had been observed in research focused on prior foreign earnings tax holidays. The results of the present study for these variables indicate that besides freeing up trapped cash for shareholder payouts, the foreign earnings provisions of the TCJA may, in some ways, have impacts consistent with the stated legislative intent of encouraging firms to repatriate funds that had been "trapped" in foreign subsidiaries by the previous worldwide tax regime in the U.S. for investment domestically. The results of the present study may not be entirely sufficient to draw such a conclusion but do at least provide an important basis for further research in this area.

The lack of a statistically significant finding of an association between pre-TCJA foreign cash and leverage, and indications that leverage actually increased in the post-TCJA period for the firms in the sample, may have more to do with the current interest rate environment and the relatively low cost of debt vis-à-vis equity capital. This may warrant further examination but is outside the scope of the present study.

5.2 Limitations and Opportunities for Future Research

As mentioned in chapter 2, I use foreign cash holdings hand-gathered from firms' 10K filings as a proxy for "repatriatable funds" based on prior research. I have done this because firm-level data on actual repatriations of funds by U.S. MNCs from the BEA Benchmark Survey data are not available at the time of the present study and will not be available for some time yet. Having firm-level data on repatriation of funds to the U.S. by MNCs would further enhance the usefulness of the present study in that one could more directly examine relationships between the *Expenditures* examined and funds repatriated in the period following the enactment of the TCJA. The pending availability of that data presents an opportunity for future research into the relationships between reported Pre-TCJA UFE or foreign cash balances and amounts actually repatriated, and the relationship of actual repatriations to post-TCJA payouts and expenditure.

Further, while the present study indicates that there are statistically significant positive relationships between pre-TCJA foreign cash holdings and R&D expenditures and capital expenditures in the second year post-TCJA, these findings warrant further examination. First, the present study does not include any measures to distinguish between domestic and non-domestic investments in R&D or capital expenditures. Second, there is no information examined in the present study to determine if these investments would be job creating or potentially job reducing technological investments. Given the stated legislative purpose of some of the

provisions of the TCJA of encouraging domestic investment, in particular domestic investment for the purpose of job creation, the nature and location of these investments by MNCs would be interesting to examine.

Lastly, the sample chosen for the present study is more than sufficient for making the inferences regarding the support or lack of support for the hypothesized relationships studied, as it includes most of the largest MNCs and captures approximately $610 billion in pre-TCJA foreign cash holdings disclosed (approximately 23% of the aggregate estimate of pre-TCJA "repatriatable" foreign earnings). However, looking further at these relationships using a broader sample and perhaps over a longer time period could be worthwhile. The use of a broader sample, perhaps using the BEA Benchmark Study data, could permit further segmentation of the sample to examine and identify industry effects, effects on firms of different sizes, and perhaps provide more information on foreign versus domestic investment in the post-TCJA era.

5.3 Conclusion

In this study I examine whether MNCs reporting larger proportional foreign cash holdings in the year just prior to the enactment of the TCJA were more likely to make shareholder payouts or investments in R&D, capital expenditure, acquisitions or leverage reductions in response to the foreign earnings tax provisions in the TCJA. The results show that these firms had higher proportional shareholder payouts in the post-TCJA period primarily in the form of share repurchases. This is consistent with MNC responses to prior repatriation tax holidays and with what was widely expected in response to the TCJA. It is also consistent with the pattern suggested in the aggregate data available for the in initial post-enactment period. The results also indicate that there are important second year, and potentially longer-term, effects of the foreign earnings provisions in the TCJA on expenditure or investment decisions by MNCs. In particular, I find that the association of

R&D expenditure and capital expenditure with pre-TCJA foreign cash holdings increased in the second year following enactment for MNCs that disclosed such holdings.

Overall, the results provide insight for researchers and policymakers in evaluating the impact of the "permanent" repatriation tax holiday offered by the TCJA in contrast to the one-year tax holidays offered in prior legislation. The findings suggest that some of the professed legislative intent for the shift to a territorial from a worldwide tax regime of encouraging repatriation of foreign earnings for domestic investment may have been achieved, albeit in smaller measure than the associated increases in share repurchases. These findings warrant further study and provide a basis for future research, particularly as the current U.S. administration has already expressed that they will be considering proposing changes to the corporate tax provisions of the TCJA.

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FIGURES

Figure 1. *Aggregate Amounts Repatriated to the U.S. 2003 - Q1 2020*
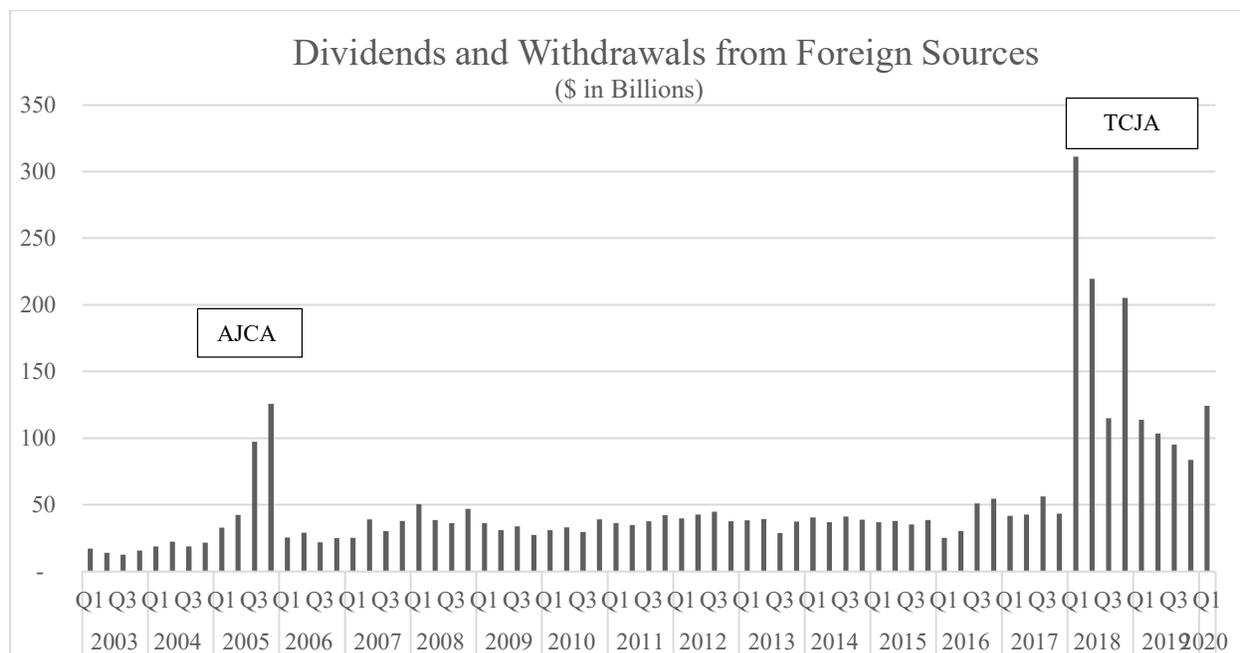
Data source: U.S. Bureau of Economic Analysis, U.S. Dept. of Commerce, Table 4.1, U.S. International Transactions in Primary Income (labels added for emphasis)

Figure 2. *Comparison of Pre-TCJA and TCJA Taxes on Foreign Source Income*

Comparison of Pre-TCJA and TCJA Taxes on Active Foreign Source Income of US Multinational Corporations

TPC

Provision	Prior Law	TCJA, 2018-2025	TCJA, 2026 and Later
Tax on repatriated dividends from foreign affiliates.	35% tax with credit for foreign income taxes, up to U.S. tax rate.	No tax (100 percent dividend deduction); no foreign tax credit.	No tax (100 percent dividend deduction); no foreign tax credit.
Current tax on income in controlled foreign subsidiaries.	No tax until repatriated.	10.5% tax on intangible profits (GILTI); credit for 80 percent of foreign income taxes, up to U.S. tax rate.	13.125% tax on GILTI; credit for 80 percent of foreign income taxes up to U.S. tax rate.
Tax on past accrued profits in foreign affiliates.	No tax until repatriated; then taxable at 35% with credit for foreign income taxes.	Tax imposed at rates of 15.5% on cash assets and 8% on non-cash assets payable over 8 years; credit for foreign income taxes reduced in proportion to reduction from 35% corporate tax rate.	No tax.

Source: https://www.taxpolicycenter.org/taxvox/explaining-tcjas-international-reforms (Toder, 2018)

TABLES

Table 1: Summary Statistics

	N	Mean	Std. Dev	25th Pctl	Median	75th Pctl
Total Payout	453	0.100	0.118	0.031	0.069	0.127
Dividends	453	0.034	0.061	0.009	0.024	0.044
Repurchase	453	0.066	0.094	0.013	0.037	0.083
CapEx	453	0.035	0.030	0.015	0.026	0.044
Leverage	453	0.285	0.157	0.182	0.272	0.370
RDExp	453	0.030	0.043	0.000	0.012	0.044
ACQ	453	0.032	0.066	0.000	0.002	0.030
ForCash	453	0.120	0.164	0.026	0.056	0.141
Post1	453	0.252	0.434	0.000	0.000	1.000
Post1XForCash	453	0.029	0.094	0.000	0.000	0.001
Post2	453	0.245	0.431	0.000	0.000	0.000
Post2XForCash	453	0.027	0.093	0.000	0.000	0.000
DomCash	453	0.072	0.113	0.008	0.022	0.090
MTR	453	0.329	0.071	0.350	0.350	0.350
Loss	453	0.075	0.264	0.000	0.000	0.000
Size	453	9.565	1.101	8.695	9.464	10.204
Earnings	453	0.078	0.067	0.045	0.071	0.109
OpCashFlow	453	0.128	0.068	0.084	0.116	0.168
MTB	453	7.102	27.492	2.399	3.930	7.040
SalesGrowth	453	0.042	0.131	-0.015	0.034	0.091
FirmAge	453	41.079	19.301	23.000	43.000	58.000
RE/BV	453	1.252	2.452	0.475	0.898	1.449
Options	453	-0.017	0.142	-0.058	-0.028	-0.002
Dividends Lag	453	0.029	0.028	0.008	0.022	0.044
Repurchase Lag	453	0.064	0.075	0.012	0.037	0.087
IntLimPre	453	0.026	0.161	0.000	0.000	0.000
CapExPre	453	0.035	0.028	0.015	0.026	0.050
LeveragePre	453	0.271	0.150	0.175	0.251	0.332
RDExpPre	453	0.030	0.042	0.000	0.012	0.043
ACQPre	453	0.037	0.055	0.000	0.007	0.056

This table reports summary statistics for the sample of firm-year observations for the period 2015 through 2019, (excluding 2017 except as noted). Fiscal years (FY) are defined consistently with the *fyear* data item in Compustat. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set equal to

zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RDExp* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *ForCash* is foreign cash at FYE 2017 scaled by total assets. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1*. *Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDExpPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1 Total Payout	1.000	0.613	0.856	0.004	0.156	0.195	-0.126	0.360	-0.022	0.167
2 Dividends	0.613	1.000	0.117	0.020	0.156	0.025	-0.080	0.048	-0.037	-0.022
3 Repurchase	0.856	0.117	1.000	-0.008	0.094	0.229	-0.106	0.421	-0.004	0.225
4 CapEx	0.004	0.020	-0.008	1.000	0.023	-0.026	-0.173	-0.114	0.014	-0.046
5 Leverage	0.156	0.156	0.094	0.023	1.000	-0.181	0.084	-0.014	0.014	0.012
6 RD	0.195	0.025	0.229	-0.026	-0.181	1.000	0.048	0.317	0.007	0.138
7 ACQ	-0.126	-0.080	-0.106	-0.173	0.084	0.048	1.000	-0.108	0.006	-0.035
8 ForCash	0.360	0.048	0.421	-0.114	-0.014	0.317	-0.108	1.000	-0.020	0.399
9 Post1	-0.022	-0.037	-0.004	0.014	0.014	0.007	0.006	-0.020	1.000	0.530
10 Post1XForCash	0.167	-0.022	0.225	-0.046	0.012	0.138	-0.035	0.399	0.530	1.000
11 Post2	0.013	0.062	-0.025	-0.023	0.084	-0.009	-0.078	-0.034	-0.330	-0.175
12 Post2XForCash	0.313	0.069	0.349	-0.035	0.073	0.136	-0.036	0.405	-0.168	-0.089
13 DomCash	0.231	0.062	0.250	-0.016	-0.038	0.234	-0.028	0.073	-0.027	0.016
14 MTR	-0.083	-0.072	-0.057	0.093	-0.086	-0.094	-0.051	-0.135	0.001	-0.061
15 Loss	-0.125	-0.056	-0.121	0.149	0.064	-0.050	-0.010	-0.093	0.028	-0.038
16 Size	-0.214	-0.041	-0.243	0.131	0.006	-0.012	-0.061	-0.048	0.034	-0.014
17 Earnings	0.376	0.137	0.384	-0.014	-0.033	0.145	-0.056	0.210	0.096	0.165
18 OpCashFlow	0.454	0.087	0.514	0.312	0.019	0.286	-0.179	0.373	0.043	0.205
19 MTB	0.211	0.330	0.050	-0.020	0.032	0.005	0.047	-0.023	-0.020	-0.003
20 SalesGrowth	-0.167	-0.237	-0.055	-0.032	-0.074	0.157	0.214	0.024	0.250	0.122
21 FirmAge	-0.080	0.072	-0.147	0.060	0.143	-0.218	-0.066	-0.296	0.029	-0.102
22 RE/BV	0.071	-0.074	0.137	-0.114	0.159	0.046	0.021	0.177	0.047	0.145
23 Options	-0.160	-0.040	-0.175	0.056	-0.091	-0.082	0.123	-0.134	0.018	-0.053
24 Dividends Lag	0.237	0.404	0.034	0.109	0.223	-0.068	0.016	-0.037	-0.013	-0.036
25 Repurchase Lag	0.475	0.025	0.581	-0.050	0.072	0.302	-0.021	0.408	-0.110	0.077
26 IntLimPre	-0.118	-0.072	-0.102	0.070	-0.009	-0.046	-0.066	-0.083	-0.001	-0.037
27 CapExPre	-0.043	0.031	-0.074	0.871	0.043	-0.047	-0.140	-0.156	-0.001	-0.069
28 Leverage Pre	0.101	0.132	0.040	0.024	0.915	-0.176	0.051	-0.047	0.004	-0.013
29 RD Pre	0.160	0.027	0.184	-0.028	-0.163	0.984	0.073	0.283	0.002	0.118
30 ACQ Pre	-0.084	0.025	-0.121	-0.202	0.029	-0.002	0.451	-0.197	0.005	-0.087

Pearson Correlation Coefficients, N = 453

Amounts italicized in bold in the table above are significant at the 0.1 level.

Table 2: Correlation Matrix

	11	12	13	14	15	16	17	18	19	20
1 Total Payout	0.013	*0.313*	*0.231*	*-0.083*	*-0.125*	*-0.214*	*0.376*	*0.454*	*0.211*	*-0.167*
2 Dividends	0.062	*0.069*	*0.062*	-0.072	-0.056	-0.041	*0.137*	*0.087*	*0.330*	*-0.237*
3 Repurchase	-0.025	*0.349*	*0.250*	-0.057	*-0.121*	*-0.243*	*0.384*	*0.514*	*0.050*	*-0.055*
4 CapEx	-0.023	-0.035	-0.016	*0.093*	*0.149*	*0.131*	*-0.014*	*0.312*	-0.020	-0.032
5 Leverage	*0.084*	0.073	-0.038	*-0.086*	0.064	0.006	-0.033	0.019	0.032	-0.074
6 RD	-0.009	*0.136*	*0.234*	*-0.094*	-0.050	-0.012	*0.145*	*0.286*	0.005	*0.157*
7 ACQ	*-0.078*	-0.036	-0.028	-0.051	-0.010	-0.061	-0.056	*-0.179*	0.047	*0.214*
8 ForCash	-0.034	*0.405*	0.073	*-0.135*	*-0.093*	-0.048	*0.210*	*0.373*	-0.023	0.024
9 Post1	*-0.330*	*-0.168*	-0.027	0.001	0.028	0.034	*0.096*	0.043	-0.020	*0.250*
10 Post1XForCash	*-0.175*	*-0.089*	0.016	-0.061	-0.038	-0.014	*0.165*	*0.205*	-0.003	*0.122*
11 Post2	1.000	*0.508*	-0.059	-0.003	-0.026	0.066	*0.133*	-0.013	-0.006	-0.043
12 Post2XForCash	*0.508*	1.000	0.006	-0.069	-0.041	-0.004	*0.179*	*0.177*	-0.018	-0.053
13 DomCash	-0.059	0.006	1.000	-0.061	*-0.081*	-0.070	*0.116*	*0.234*	0.045	*0.107*
14 MTR	-0.003	-0.069	-0.061	1.000	*-0.207*	*0.082*	*0.159*	*0.079*	-0.008	0.013
15 Loss	-0.026	-0.041	*-0.081*	*-0.207*	1.000	0.032	*-0.584*	*-0.216*	-0.058	*-0.284*
16 Size	0.066	-0.004	-0.070	*0.082*	0.032	1.000	*-0.152*	*-0.161*	-0.004	0.058
17 Earnings	*0.133*	*0.179*	*0.116*	*0.159*	*-0.584*	*-0.152*	1.000	*0.657*	*0.083*	*0.286*
18 OpCashFlow	-0.013	*0.177*	*0.234*	*0.079*	*-0.216*	*-0.161*	*0.657*	1.000	*0.007*	*0.116*
19 MTB	-0.006	-0.018	0.045	-0.008	-0.058	-0.004	*0.083*	0.007	1.000	*-0.082*
20 SalesGrowth	-0.043	-0.053	*0.107*	0.013	*-0.284*	0.058	*0.286*	*0.116*	*-0.082*	1.000
21 FirmAge	0.062	*-0.092*	*-0.221*	*0.133*	-0.052	*0.265*	-0.044	*-0.190*	0.012	*-0.164*
22 RE/BV	-0.005	0.050	0.011	*-0.138*	*-0.081*	*-0.106*	*0.247*	*0.261*	*0.261*	0.043
23 Options	-0.012	*-0.102*	-0.051	-0.040	0.019	-0.042	0.020	*-0.083*	0.006	*0.266*
24 Dividends Lag	0.025	-0.004	0.049	*0.158*	*-0.104*	0.023	*0.379*	*0.324*	*0.146*	*-0.112*
25 Repurchase Lag	0.012	*0.286*	*0.186*	-0.038	*-0.131*	*-0.251*	*0.409*	*0.553*	*-0.092*	-0.030
26 IntLimPre	0.002	-0.031	-0.024	*-0.119*	*0.370*	0.050	*-0.270*	*-0.235*	0.003	-0.024
27 CapExPre	0.003	-0.068	-0.028	*0.095*	*0.177*	0.053	-0.031	*0.293*	0.011	-0.038
28 Leverage Pre	-0.013	-0.026	-0.033	-0.054	0.046	-0.007	-0.040	0.012	0.055	*-0.094*
29 RD Pre	-0.005	*0.097*	*0.211*	*-0.105*	-0.053	0.005	*0.132*	*0.257*	0.008	*0.169*
30 ACQ Pre	-0.015	*-0.081*	*-0.141*	-0.176	0.019	-0.050	*-0.143*	*-0.234*	0.059	-0.004

Pearson Correlation Coefficients, N = 453

Amounts italicized in bold in the table above are significant at the 0.1 level.

Table 2: Correlation Matrix

	21	22	23	24	25	26	27	28	29	30
1 *Total Payout*	*-0.080*	*0.071*	*-0.160*	*0.237*	*0.475*	*-0.118*	-0.043	*0.101*	*0.160*	*-0.084*
2 *Dividends*	0.072	-0.074	-0.040	*0.404*	0.025	-0.072	0.031	*0.132*	0.027	0.025
3 *Repurchase*	*-0.147*	*0.137*	*-0.175*	0.034	*0.581*	*-0.102*	-0.074	*0.040*	*0.184*	*-0.121*
4 *CapEx*	0.060	*-0.114*	0.056	0.109	-0.050	0.070	*0.871*	0.024	-0.028	*-0.202*
5 *Leverage*	*0.143*	*0.159*	*-0.091*	*0.223*	0.072	-0.009	0.043	*0.915*	*-0.163*	0.029
6 *RD*	*-0.218*	0.046	*-0.082*	-0.068	*0.302*	-0.046	-0.047	*-0.176*	*0.984*	-0.002
7 *ACQ*	-0.066	0.021	*0.123*	0.016	-0.021	-0.066	*-0.140*	0.051	0.073	*0.451*
8 *ForCash*	*-0.296*	*0.177*	*-0.134*	-0.037	*0.408*	*-0.083*	*-0.156*	-0.047	*0.283*	*-0.197*
9 *Post1*	0.029	0.047	0.018	-0.013	*-0.110*	-0.001	-0.001	0.004	0.002	0.005
10 *Post1XForCash*	*-0.102*	*0.145*	-0.053	-0.036	0.077	-0.037	-0.069	-0.013	*0.118*	*-0.087*
11 *Post2*	0.062	-0.005	-0.012	0.025	0.012	0.002	0.003	-0.013	-0.005	-0.015
12 *Post2XForCash*	*-0.092*	0.050	*-0.102*	-0.004	*0.286*	-0.031	-0.068	-0.026	*0.097*	*-0.081*
13 *DomCash*	*-0.221*	0.011	-0.051	0.049	*0.186*	-0.024	-0.028	-0.033	*0.211*	*-0.141*
14 *MTR*	*0.133*	*-0.138*	-0.040	*0.158*	-0.038	*-0.119*	*0.095*	-0.054	*-0.105*	*-0.176*
15 *Loss*	-0.052	*-0.081*	0.019	*-0.104*	*-0.131*	*0.370*	*0.177*	0.046	-0.053	0.019
16 *Size*	*0.265*	*-0.106*	-0.042	0.023	*-0.251*	0.050	0.053	-0.007	0.005	-0.050
17 *Earnings*	-0.044	*0.247*	0.020	*0.379*	*0.409*	*-0.270*	-0.031	-0.040	*0.132*	*-0.143*
18 *OpCashFlow*	*-0.190*	*0.261*	*-0.083*	*0.324*	*0.553*	*-0.235*	*0.293*	0.012	*0.257*	*-0.234*
19 *MTB*	0.012	*0.261*	0.006	*0.146*	*-0.092*	0.003	0.011	0.055	0.008	0.059
20 *SalesGrowth*	*-0.164*	0.043	*0.266*	*-0.112*	-0.030	-0.024	-0.038	*-0.094*	*0.169*	-0.004
21 *FirmAge*	1.000	*0.083*	-0.041	*0.259*	*-0.161*	*-0.112*	0.063	*0.127*	*-0.198*	*-0.171*
22 *RE/BV*	*0.083*	1.000	-0.032	*0.110*	*0.200*	-0.061	-0.055	*0.149*	0.050	*-0.078*
23 *Options*	-0.041	-0.032	1.000	-0.007	*-0.172*	*0.109*	*0.089*	*-0.086*	-0.061	0.065
24 *Dividends Lag*	*0.259*	*0.110*	-0.007	1.000	*0.116*	*-0.125*	*0.170*	*0.214*	-0.062	*-0.114*
25 *Repurchase Lag*	*-0.161*	*0.200*	*-0.172*	*0.116*	1.000	*-0.118*	-0.061	0.004	*0.275*	*-0.151*
26 *IntLimPre*	*-0.112*	-0.061	*0.109*	*-0.125*	*-0.118*	1.000	0.034	-0.038	-0.035	*-0.105*
27 *CapExPre*	0.063	-0.055	*0.089*	*0.170*	-0.061	0.034	1.000	0.040	-0.036	*-0.193*
28 *Leverage Pre*	*0.127*	*0.149*	*-0.086*	*0.214*	0.004	-0.038	0.040	1.000	*-0.167*	0.055
29 *RD Pre*	*-0.198*	0.050	-0.061	-0.062	*0.275*	-0.035	-0.036	*-0.167*	1.000	-0.003
30 *ACQ Pre*	*-0.171*	*-0.078*	0.065	*-0.114*	*-0.151*	*-0.105*	*-0.193*	0.055	-0.003	1.000

Amounts italicized and bold in the table above are significant at the 0.1 level. This table reports Pearson correlation coefficients (N=453) for the sample of firm-year observations for the period 2015 through 2019, (excluding 2017 except as noted). Fiscal years (FY) are defined consistently with the *fyear* data item in Compustat. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set equal to zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RD* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *Post1* is a dummy variable that is equal to 1 for

fiscal year 2018 (TCJA+1) and zero otherwise. *ForCash* is foreign cash at FYE 2017 scaled by total assets. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1. Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Table 3 - Results for Main Tests of Hypotheses – Panel A – Shareholder Payouts

	Total Payout			Dividends			Repurchases		
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.133	3.05	***	0.037	1.28		0.053	1.48	
ForCash	0.037	0.99		0.006	0.21		0.006	0.21	
Post1	-0.006	-0.44		0.011	1.31		-0.016	-1.5	
ForCashXPost1	0.150	2.5	**	-0.007	-0.16		0.171	3.51	***
Post2	-0.033	-2.66	***	0.003	0.42		-0.044	-4.21	***
ForCashXPost2	0.283	4.71	***	0.034	0.77		0.284	5.81	***
DomCash	0.117	3.07	***	-0.006	-0.22		0.106	3.41	***
MTR	-0.149	-2.5	**	-0.080	-1.89	*	0.002	0.05	
Loss	0.017	0.81		-0.023	-1.57		0.023	1.27	
Size	-0.013	-3.26	***	-0.001	-0.50		-0.011	-3.42	***
Earnings	0.317	2.67	***	0.013	0.16		0.309	3.09	***
OpCashFlow	0.363	3.12	***	-0.095	-1.22		0.392	4.05	***
MTB	0.001	6.73	***	0.001	7.61	***	0.000	2.85	***
SalesGrowth	-0.174	-4.53	***	-0.124	-4.87	***	-0.078	-2.39	**
Leverage[b]	0.104	3.76	***	0.046	2.40	**	0.063	2.76	***
CapEx[b]	-0.433	-2.43	**	-0.106	-0.90		-0.419	-2.76	***
RD[b]	0.049	0.45		0.078	1.02		-0.013	-0.15	
ACQ[b]	-0.108	-1.61		-0.076	-1.71	*	-0.051	-0.90	
FirmAge	0.001	2.51	**	0.000	0.62		0.001	3.31	***
RE/BV	-0.011	-5.76	***	-0.009	-6.14	***	-0.004	-2.86	***
Options	-0.010	-0.33		0.008	0.38		-0.058	-2.05	**
Dividends $_{t-1}$	0.199	1.1		1.210	9.5	***	-0.606	-4.08	***
Repurchases $_{t-1}$	0.314	4.27	***	-0.062	-1.23		0.349	5.83	***
IntLimPre	-0.022	-0.74		-0.017	-0.9		-0.029	-0.98	
ε	0.083	29.57	***	0.053	27.32	***	0.067	28.05	***
N	453			453			453		
Obs Censored at 0	14			75			55		
Log Likelihood	460.3			538.7			476.8		

Table 3 - Results for Main Tests of Hypotheses – Panel B - RD and ACQ

	RD			ACQ		
	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	-0.006	-1.16		0.045	1.09	
ForCash	0.006	1.52		-0.060	-1.59	
Post1	-0.001	-0.38		-0.022	-1.84	*
ForCashXPost1	0.010	1.5		0.094	1.58	
Post2	-0.003	-2.26	**	-0.031	-2.58	***
ForCashXPost2	0.027	3.95	***	0.100	1.61	
DomCash	0.009	2.06	**	-0.018	-0.49	
MTR	0.014	1.81	*	0.085	1.49	
Loss	0.001	0.41		0.018	0.89	
Size	-0.001	-1.15		-0.006	-1.71	*
Earnings	0.005	0.37		-0.025	-0.22	
OpCashFlow	0.000	0.02		-0.381	-3.54	***
MTB	0.000	0.77		0.000	0.95	
SalesGrowth	-0.002	-0.45		0.163	4.73	***
Leverage^b	-0.005	-1.34		-0.005	-0.17	
CapEx^b	-0.032	-1.42		-0.156	-0.9	
RD^b	1.046	81.75	***	0.207	2.01	**
ACQ^b	-0.007	-0.86		0.663	8.64	***
FirmAge	0.000	2.68	***	0.000	0.23	
RE/BV	0.000	-0.67		0.002	1.06	
Options	-0.008	-1.76	*	0.008	0.27	
Dividends $_{t-1}$	-0.042	-1.87	*	0.617	3.61	***
Repurchases $_{t-1}$	-0.001	-0.17		0.126	1.84	*
IntLimPre	-0.004	-1.04		-0.037	-1.34	
ε	0.009	22.95	***	0.072	22.67	***
N	453			453		
Obs Censored at 0	177			174		
Log Likelihood	842.4			228.3		

Table 3 - Results for Main Tests of Hypotheses – Panel C – Leverage and CapEx

	Leverage[a]			CapEx[a]		
	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.006	0.19		-0.024	-3.07	***
ForCash	0.003	0.14		-0.005	-1.02	
Post1	0.016	1.84	*	-0.001	-0.27	
ForCashXPost1	0.061	0.91		0.001	0.19	
Post2	0.038	4.09	***	-0.004	-1.99	**
ForCashXPost2	0.084	1.26		0.015	1.69	*
DomCash	0.003	0.12		-0.002	-0.34	
MTR	-0.066	-1.26		-0.004	-0.58	
Loss	-0.006	-0.4		-0.001	-0.25	
Size	0.001	0.45		0.002	3.33	***
Earnings	-0.195	-1.89	*	0.000	0	
OpCashFlow	-0.012	-0.13		0.083	3.72	***
MTB	0.000	-0.33		0.000	-0.01	
SalesGrowth	0.045	1.56		-0.005	-0.67	
Leverage[b]	0.933	35.62	***	0.003	0.62	
CapEx[b]	0.087	0.82		0.865	13.27	***
RD[b]	-0.209	-2.52	**	-0.007	-0.28	
ACQ[b]	0.113	2.19	**	-0.006	-0.76	
FirmAge	0.000	1.38		0.000	1.74	*
RE/BV	0.001	0.35		-0.001	-4.72	***
Options	-0.012	-0.78		-0.001	-0.27	
Dividends $_{t-1}$	0.285	2.23	**	-0.089	-2.46	**
Repurchases $_{t-1}$	0.225	3.95	***	-0.017	-1.54	
IntLimPre	0.028	1.11		0.012	1.81	*
ε						
N	453			453		
R²	0.8688			0.7908		

[a] Results are for Tobit regressions for all dependent variables except for Leverage and CapEx which are simple OLS regressions as there is no cluster of zero values for either of these variables.

[b] These variables take on the value defined as "Pre" in cases where they match the dependent variable. For example, in the estimation of the regression for RD, the independent variable would be RDPre which is the average of the variable value for FY 2105 and FY 2016.

The table above reports the results of regression estimations for the *Expenditure* variables shown in the column headings. For each *Expenditure*, the table shows the regression coefficient, t-value and significance level. ***, **, * represent significance at the 0.01, 0.05, 0.10 two-tailed significance levels. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set equal to zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RD* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *ForCash* is foreign cash at FYE 2017 scaled by total assets. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1*. *Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Table 4 - Regression Results Cross-sectional Analysis Partitioned on Repatriation Cost Estimate

| | Repurchases | | | | | | RD | | | | | | CapEx[a] | | | | | |
| | REPAT=1 | | | REPAT=0 | | | REPAT=1 | | | REPAT=0 | | | REPAT=1 | | | REPAT=0 | | |
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.088	1.45		0.003	0.06		-0.006	-0.63		0.009	1.73	*	-0.029	-2.64	***	-0.013	-1.38	
ForCash	-0.003	-0.08		0.026	0.58		0.010	1.48		-0.002	-0.35		-0.013	-1.67	*	0.003	0.47	
Post1	-0.033	-1.82	*	-0.004	-0.33		-0.001	-0.41		0.001	0.72		0.001	0.23		-0.001	-0.54	
ForCashXPost1	0.196	2.76	***	0.130	2.10	**	0.011	1.09		0.003	0.43		-0.002	-0.13		-0.002	-0.27	
Post2	-0.048	-2.69	***	-0.043	-3.99	***	-0.005	-1.81	*	-0.002	-1.57		-0.006	-1.52		-0.004	-1.37	
ForCashXPost2	0.314	4.39	***	0.216	3.57	***	0.036	3.40	***	0.010	1.64		0.022	1.41		0.005	0.85	
DomCash	0.101	2.07	**	0.068	1.48		0.020	2.86	***	-0.006	-1.05		-0.005	-0.51		0.002	0.24	
MTR	-0.105	-0.95		0.010	0.18		0.028	1.42		-0.002	-0.31		-0.012	-0.94		0.002	0.27	
Loss	-0.022	-0.72		0.047	2.26	**	0.012	2.85	***	-0.005	-2.37	**	0.000	-0.05		0.000	0.01	
Size	-0.015	-3.18	***	-0.002	-0.45		-0.001	-1.34		-0.001	-2.55	**	0.003	3.27	***	0.001	1.23	
Earnings	0.224	1.48		0.509	3.95	***	0.038	1.66	*	-0.047	-3.30	***	-0.001	-0.03		0.000	-0.01	
OpCashFlow	0.607	3.67	***	0.165	1.52		0.009	0.35		0.021	1.96	**	0.141	2.91	***	0.051	2.31	**
MTB	0.001	3.12	***	0.000	1.45		0.000	.		0.000	-2.15	**	0.000	0.37		0.000	-1.90	*
SalesGrowth	-0.069	-1.31		-0.086	-2.29	**	-0.002	-0.22		-0.006	-1.68	*	-0.010	-0.68		-0.012	-2.27	**
Leverage[b]	0.162	3.82	***	0.005	0.23		-0.012	-1.87	*	0.002	0.86		0.010	1.17		0.002	0.71	
CapEx[b]	-0.553	-2.20	**	-0.304	-1.75	*	-0.059	-1.53		-0.005	-0.29		0.807	7.80	***	0.844	13.15	***
RD[b]	0.030	0.23		0.014	0.08		1.019	51.54	***	1.074	54.13	***	-0.031	-0.92		-0.036	-1.29	
ACQ[b]	0.026	0.30		-0.087	-1.31		-0.015	-1.14		0.000	0.08		-0.008	-0.57		0.003	0.29	
FirmAge	0.001	2.22	**	0.000	1.26		0.000	.		0.000	2.23	**	0.000	1.09		0.000	1.84	*
RE/BV	-0.004	-1.68	*	-0.002	-1.28		0.000	-0.03		0.001	3.17	***	-0.001	-2.93	***	-0.001	-3.28	***
Options	-0.289	-4.57	***	0.029	1.24		-0.014	-1.60		0.003	0.89		-0.012	-1.24		0.004	0.83	
Dividends $_{t-1}$	-0.932	-3.31	***	-0.702	-4.54	***	-0.049	-1.13		-0.021	-1.20		-0.218	-2.50	**	-0.023	-0.66	
Repurchases $_{t-1}$	0.205	2.34	**	0.443	5.65	***	0.000	-0.02		-0.023	-2.59	***	-0.031	-1.81	*	-0.005	-0.39	
IntLinPre	0.006	0.10		-0.043	-1.49		-0.048	-0.08		-0.006	-2.38	**	-0.002	-0.36		0.020	2.15	**
ε	0.074	19.47	***	0.050	19.04	***	0.010	16.82	***	0.004	14.17	***						
N	215			215			215			215			215			215		
Obs Censored at 0	23			29			71			103								
R²													0.7738			0.8541		
Log Likelihood	214.0			274.6			428.5			438.1								

[a] Repurchase and RDExp are Tobit regression estimations. CapEx is simple OLS regression as there is no cluster of zero values for either.

[b] These variables take on the value defined as "Pre" in cases where they match the dependent variable. For example in the estimation of the regression for RD, the independent variable would be RDPre which is the average of the variable value for FY

The table above reports the results of regression estimations for the *Expenditure* variables shown in the column headings. For each *Expenditure*, the table shows the regression coefficient, t-value and significance level. ***, **, * represent significance at the 0.01, 0.05, 0.10 two-tailed significance levels. The table shows a comparison of the regression estimation results for the final sample of firms reporting pre-TCJA foreign cash holdings partitioned on values for a variable called REPAT which represents the pre-TCJA repatriation tax costs for the firms in the sample. REPAT is equal to the FY 2016 MTR less the FY 2016 foreign ETR at the firm level. The REPAT=1 column includes firms with values for REPAT at or above the median and REPAT=0 for firms below the median. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set equal to zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RD* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *ForCash* is foreign cash at FYE 2017 scaled by total assets. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1*. *Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Table 5 - Regression Results Difference-in-Differences Test - "MNC" Binary Variable

	Repurchases			RD			CapEx[a]		
	Coeff	**T-val**	**Sig**	**Coeff**	**T-val**	**Sig**	**Coeff**	**T-val**	**Sig**
Intercept	0.008	0.32		-0.018	-3.77	***	-0.009	-1.67	*
MNC	0.001	0.11		0.005	2.55	**	-0.001	-0.58	
Post1	0.007	0.47		0.003	0.94		0.003	0.91	
*MNC*Post1*	0.010	0.66		0.000	-0.02		-0.005	-1.28	
Post2	-0.013	-0.97		0.002	0.45		-0.001	-0.36	
*MNC*Post2*	0.003	0.20		-0.001	-0.36		-0.002	-0.50	
DomCash	0.068	3.76	***	0.012	3.83	***	-0.003	-0.83	
MTR	-0.012	-0.43		0.002	0.33		-0.017	-2.38	**
Loss	0.014	1.33		-0.002	-1.14		-0.004	-1.13	
Size	-0.005	-2.31	**	0.001	1.58		0.001	3.01	***
Earnings	0.221	4.17	***	-0.031	-3.13	***	-0.051	-3.25	***
OpCashFlow	0.428	7.83	***	0.027	2.47	**	0.123	7.57	***
MTB	0.000	2.47	**	0.000	0.39		0.000	1.45	
SalesGrowth	-0.078	-4.43	***	-0.009	-2.54	**	-0.004	-0.84	
Leverage	0.078	5.50	***	-0.004	-1.53		-0.003	-1.04	
CapEx[b]	-0.304	-4.00	***	-0.074	-4.68	***	0.828	26.56	***
RD[b]	-0.060	-1.00		1.064	94.51	***	-0.020	-1.24	
ACQ	-0.072	-1.89	*	-0.007	-1.08		-0.011	-1.48	
FirmAge	0.000	1.06		0.000	1.42		0.000	2.58	***
RE/BV	-0.002	-1.77	*	0.000	0.41		-0.001	-3.50	***
Options	-0.062	-3.91	***	-0.005	-1.34		0.000	0.06	
Dividends $_{t-1}$	-0.540	-5.81	***	0.002	0.11		-0.061	-2.89	***
Repurchases $_{t-1}$	0.435	11.07	***	0.003	0.35		-0.024	-2.68	***
IntLimPre	-0.026	-2.01	**	-0.009	-2.83	***	0.008	1.13	
ε	0.067	44.15	***	0.011	35.26	***			
N	1099			1099			1099		
Obs Censored at 0	112			459					
R^2							0.8106		
Log Likelihood	1,182.0			1,782.0					

[a] Repurchase and RDExp are Tobit regression estimations. CapEx is standard OLS regression as there is no cluster of zero values for either.

[b] These variables take on the value defined as "Pre" in cases where they match the dependent variable. For example in the estimation of the regression for RD, the independent varialbe would be RDPre which is the average of the variable value for FY 2105 and FY 2016.

The table above reports the results of regression estimations for the *Expenditure* variables shown in the column headings. For each *Expenditure*, the table shows the regression coefficient, t-value and significance level. ***, **, * represent significance at the 0.01, 0.05, 0.10 two-tailed significance levels. The table shows a comparison of the regression estimation results for the full sample of firms that were constituents of the S&P 500 for the fiscal years from 2015 through 2019. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set equal to zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in

the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RDExp* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *MNC* is a dummy variable that is equal to 1 if the firm disclosed foreign earnings in either FY 2015 or FY 2016. *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1*. *Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDExpPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Table 6 – Robustness Test – Regression Results for MNCs in Full Sample

	Repurchases			RD			CapEx[a]		
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.008	0.30		-0.012	-2.54	**	-0.017	-3.16	***
ForCash	0.004	0.16		0.003	0.57		-0.008	-2.30	**
Post1	0.010	1.59		0.003	2.29	**	-0.002	-1.73	*
ForCashXPost1	0.102	2.31	**	0.004	0.48		0.009	1.45	
Post2	-0.022	-3.38	***	-0.001	-0.86		-0.005	-3.10	***
ForCashXPost2	0.225	5.11	***	0.023	3.07	***	0.022	2.50	**
DomCash	0.094	4.69	***	0.014	4.12	***	-0.004	-0.98	
MTR	-0.002	-0.05		0.003	0.49		-0.007	-0.93	
Loss	0.019	1.74	*	-0.002	-0.93		-0.003	-0.75	
Size	-0.005	-2.32	**	0.000	1.19		0.002	3.77	***
Earnings	0.239	4.18	***	-0.031	-3.01	***	-0.046	-2.83	***
OpCashFlow	0.411	6.71	***	0.020	1.71	*	0.117	6.60	***
MTB	0.000	2.29	**	0.000	0.41		0.000	1.50	
SalesGrowth	-0.083	-4.16	***	-0.006	-1.76	*	-0.004	-0.77	
Leverage[b]	0.079	5.07	***	-0.005	-1.66	*	-0.002	-0.46	
CapEx[b]	-0.269	-3.11	***	-0.061	-3.63	***	0.812	23.34	***
RD[b]	-0.127	-1.92	*	1.057	88.85	***	-0.016	-0.88	
ACQ[b]	-0.066	-1.60		-0.008	-1.17		-0.013	-1.74	*
FirmAge	0.000	0.89		0.000	1.64		0.000	2.58	***
RE/BV	-0.002	-2.29	**	0.000	0.70		-0.001	-3.63	***
Options	-0.076	-3.85	***	-0.007	-1.63		0.003	0.65	
Dividends $_{t-1}$	-0.419	-4.05	***	-0.007	-0.37		-0.060	-2.58	**
Repurchases $_{t-1}$	0.374	8.61	***	0.000	0.00		-0.018	-1.91	*
IntLimPre	-0.027	-1.87	*	-0.010	-2.92	***	0.005	0.75	
ε	0.069	40.94	***	0.011	34.33	***			
N	948			948			948		
Obs Censored at 0	100			340					
R²							0.7978		
Log Likelihood	989.7			1,708.0					

[a] Repurchase and RDExp are Tobit regression estimations. CapEx is standard OLS regression as there is no cluster of zero values for either.

[b] These variables take on the value defined as "Pre" in cases where they match the dependent variable. For example in the estimation of the regression for RD, the independent varialbe would be RDPre which is the average of the variable value for FY 2105 and FY 2016.

The table above reports the results of regression estimations for the *Expenditure* variables shown in the column headings. For each *Expenditure*, the table shows the regression coefficient, t-value and significance level. ***, **, * represent significance at the 0.01, 0.05, 0.10 two-tailed significance levels. The table shows the regression estimation results for the full sample of firms that were constituents of the S&P 500 for the fiscal years from 2015 through 2019 that disclosed foreign earnings in either FY 2015 or FY 2016. Unless otherwise noted, FYE 2017 total assets are used as the scalar for variables defined as being "scaled by total assets." *Total Payout* is the sum of *Dividends* and *Repurchases*. *Dividends* is total dividends paid scaled by total assets, set

equal to zero when dividends are missing in Compustat. *Repurchases* are total repurchases scaled by total assets. A repurchase is identified as a positive value for purchases of common and preferred stock less any decrease in the redemption value of preferred stock in the prior year, or minus the decrease in preferred stock in the prior year, if the redemption value is missing. *CapEx* is capital expenditures scaled to total assets. *RDExp* is total R&D expense scaled to total assets. *ACQ* is expenditures for mergers and acquisitions from the statement of cash flows scaled to total assets. *Leverage* is long-term debt scaled to total assets. *Post1* is a dummy variable that is equal to 1 for fiscal year 2018 (TCJA+1) and zero otherwise. *ForCash* is foreign cash at FYE 2017 scaled by total assets. *Post2* is a dummy variable that is equal to 1 for fiscal year 2019 (TCJA+2) and zero otherwise. *DomCash* is total cash and equivalents reported in Compustat minus foreign cash FYE 2017, scaled by total assets. *MTR* is the firm's marginal tax rate in FY 2016. *MTR* is obtained from a table of marginal tax rates compiled by Dr. John Graham derived consistent with Graham (1996). For firms that are not included in the table, MTR is estimated using the effective tax rate for FY 2016. *Loss* is a dummy variable equal to one if the firm reported a pre-tax loss and zero otherwise *Size* is the natural logarithm of total assets at FYE 2017. *Earnings* is reported income from continuing operations identified as income before extraordinary items in Compustat. *OpCashFlow* is cash flow provided by operating activities scaled to total assets. *MTB* is the market value of equity scaled to the book value of equity (the market-to-book ratio). *SalesGrowth* is equal to the sales from time *t* plus sales from time *t-1,* divided by sales from time *t-1*. *Firm Age* is the natural logarithm of the number of years the firm has been in Compustat. *RE/BV* is the ratio of retained earnings to book value of common equity. *Options* is calculated by adding back the number of repurchased shares to the total diluted shares outstanding to calculate a percentage increase in the total diluted shares outstanding as if no repurchases had occurred. *IntLimPre* is equal to one if the firm had interest expense greater than 30% of EBITDA in FY 2016, and zero otherwise. *CapExPre* is average FY 2015 and 2016 capital expenditures scaled by total assets. *LeveragePre* is average FY 2015 and 2016 long-term debt scaled to total assets. *RDExpPre* is equal to average FY 2015 and 2016 R&D expense scaled by total assets. *ACQPre* is equal to average FY 2015 and 2016 total expenditures on mergers and acquisitions scaled by total assets. All continuous variables are Winsorized at the 1st and 99th percentiles.

Appendix 1: BDMR Replication and Extensions 1 and 2

In order to isolate any effects of sampling differences on the results of Equation 1 and the BDMR model, I first conducted a series of tests using the BDMR model. The variable definitions for the BDMR model are shown in Table 4 to this Appendix.

The first test attempted to replicate the estimation of the BDMR Model for the calendar year reporting firms in the final sample that met the criteria for inclusion in the BDMR model (Replication). There are 201 firm years included in the sample that met those criteria. The smaller sample is primarily due to excluding fiscal year reporting firms and including one less year of post-TCJA data. Thereafter, I re-estimate the BDMR Model from the Replication including both calendar year and fiscal year reporting entities from the final sample that reported a foreign cash balance in fiscal 2014 (Extension 1). The sample for Extension 1 includes 333 firm years. Next, I re-estimate the BDMR model from Extension 1 expanding the post-TCJA years to include data for the second fiscal year following enactment of the TCJA (Extension 2). The sample for Extension 2 includes 441 firm years. These tests are intended to help to isolate any significant differences, if any, between the results of Equation (1), the main tests for the present study, and the results and findings of Beyer et al. (2020) that may be due to adding fiscal year reporting entities and an additional year of post-TCJA data to the analysis.

The results of the Replication indicate that while the sample for the present study contains fewer firms and firm years from those in BDMR, the principal finding is consistent with BDMR. The results of the Replication are compared side by side with the results from the main tests in BDMR in Table 1 in this Appendix. The results indicate that, the main findings are

consistent.   The models both show a statistically significant association for the *PostXForCash* interaction term for *Total Payout*, primarily driven by *Repurchases*. The coefficient for this term is larger and at a more statistically significant level in the Replication (0.365, p< 0.001) than in BDMR (0.116, p<0.1) but is mainly consistent. The results for the control variables are also largely consistent between the two models.

[Insert Appendix 1, Table 1 here]

Further, the results of Extension 1, shown below in Table 2 in this appendix, where fiscal year reporting firms that disclosed foreign cash holdings at FYE 2014 are added to the Replication model, produces a coefficient for the interaction term (0.226) that is more in line with but still higher than the BDMR main analysis and at a more statistically significant level (p<0.01 versus p<0.1).   Taken together, these results indicate that the choices for determining the final sample will not materially affect the main conclusions of the analyses.

[Insert Appendix 1, Table 2 here]

Extending the BDMR model one more level to include a second post-TCJA year to the study period (Extension 2) shows that Total Payout and Repurchases continue to show a statistically significant positive association between the interaction term for post-TCJA years (Post1 or Post2) and disclosed foreign cash holdings at FYE 2014. The results of Extension 2, which can be seen in Table 3 in this Appendix, show that the interaction term for post-TCJA year 1 showed coefficients of 0.211 and 0.235, for Total Payout and Repurchases, respectively, both at a p<0.01 significance level. In the post-TCJA year 2, in the Total Payout category, Dividends also show a small but statistically significant association for the interaction term (coeff. 0.041, p<0.05) . The coefficient for Total Payout increases to 0.257 in post-TCJA year 2, due in part to

the increase in the coefficient for Dividends, while the coefficient for Repurchases declines

slightly to 0.178, both at a significance level of p<0.01. This result suggests that there are at

least some differences in MNC behavior from the first post-TCJA year to the second.

[Insert Appendix 1, Table 3 here]

APPENDIX 1 TABLES

Appendix 1, Table 1: Comparison of Results from BDMR Model and Replication with S&P 500 sample, CY Firms only

| | Total Payout | | | | | | Dividends | | | | | | Repurchases | | | | | | CapEx[a] | | | | | |
| | BDMR | | | Replication | | | BDMR | | | Replication | | | BDMR | | | Replication | | | BDMR | | | Replication | | |
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	-0.065	-3.01	***	0.015	0.39		-0.028	-2.64	***	0.001	0.22		-0.070	-2.89	***	0.030	0.72		-0.010	-1.15		-0.038	-2.38	
Post	0.005	0.79		-0.022	-2.06		0.000	0.16		0.000	0.04		0.006	1.03		-0.021	-1.86		0.006	2.79	***	-0.003	-0.92	*
FoCash	0.037	1.43		0.090	1.87	**	-0.009	-0.90		-0.005	-0.68		0.040	1.53		0.098	1.92	**	0.007	0.78		-0.017	-1.63	
FoCash x Post	0.126	1.95	*	0.379	5.34	***	0.009	0.66		0.011	1.06		0.116	1.78	*	0.365	4.85	***	-0.023	-1.55		0.015	0.84	
Domestic Cash	0.071	2.90	***	0.129	2.46	***	-0.003	-0.47		-0.012	-1.64		0.072	3.02	***	0.163	2.94	***	0.018	2.32	**	0.057	3.67	***
Book ETR	-0.006	-0.63		0.000	0.00		0.001	0.22		-0.002	-0.33	**	-0.004	-0.38		-0.003	-0.06		0.002	0.72		-0.001	-0.09	
Cash ETR	0.017	1.56		0.014	0.31	*	0.002	0.54		0.000	0.03		0.015	1.27		0.022	0.46		0.003	0.91		0.004	0.31	
Loss	-0.009	-1.31		0.019	1.03		-0.008	-3.33	***	0.000	0.12		-0.010	-1.49		-0.002	-0.08		-0.006	-1.84	*	-0.016	-2.80	***
Size	0.003	1.85	*	-0.007	-1.79	*	0.002	2.99	***	0.000	-0.33		0.002	1.47		-0.010	-2.29	**	0.001	1.37		0.005	3.20	
Earnings	0.035	0.73		0.225	2.57	***	-0.005	-0.50		-0.010	-0.74	***	0.038	0.88		0.231	2.46	***	-0.026	-1.35		-0.024	-0.87	***
Cash Flow	0.189	4.67	***	0.204	3.16	***	0.034	2.24	**	-0.006	-0.71	***	0.164	4.45	***	0.209	2.98	***	0.039	2.05	**	0.043	1.77	***
Leverage	-0.005	-0.34		0.051	1.91	***	-0.011	-2.61	***	0.008	2.02		0.005	0.34		0.045	1.56	*	-0.004	-0.77		-0.008	-1.18	
MTB	0.000	1.32		0.000	-0.71		0.000	0.75		0.000	0.90		0.000	1.03		0.000	-0.73		0.000	0.38		0.000	-0.08	*
Sales Growth	-0.025	-1.72	*	-0.075	-1.99	***	-0.008	-1.38		0.000	-0.08		-0.015	-1.24		-0.085	-2.02	***	0.028	5.12	***	0.005	0.46	
CapEx2014	-0.174	-2.42	**	-0.125	-0.97		-0.047	-2.09	**	-0.008	-0.46	***	-0.144	-1.95	*	-0.116	-0.83		0.933	16.41	***	0.679	9.69	***
RD	-0.018	-0.50		-0.196	-1.85	***	-0.027	-2.57	**	-0.006	-0.34	*	-0.007	-0.19		-0.178	-1.58	***	-0.024	-1.66	*	-0.074	-2.82	
ACQ	-0.017	-1.34		-0.019	-0.74	**	0.005	1.29		-0.018	-4.98	***	-0.015	-1.18		-0.005	-0.18		-0.002	-0.48		-0.017	-3.38	***
Firm Age	0.008	1.80	*	0.001	2.62		0.004	1.93	*	0.000	1.29	***	0.006	1.43		0.001	2.56							
RE/BV	0.001	1.62		-0.001	-0.52		0.000	0.47		0.000	0.43		0.001	1.67	*	-0.001	-0.73							
Returns	-0.013	-2.42	**	0.020	2.20	***	0.002	1.05		0.000	-0.04	***	-0.018	-3.27	***	0.023	2.39	***						
Options	-0.003	-0.16		-0.027	-1.10	***	0.010	1.59		0.002	0.44		-0.028	-1.35		-0.065	-2.15	***						
St. Dev Earnings	0.158	2.84	***	0.052	0.31		0.005	0.28		-0.015	-0.64		0.129	2.50	**	0.040	0.22							
Dividends Lag	0.932	7.66	***	0.841	4.22	***	1.063	16.94	***	1.063	37.82	***	-0.064	-0.64		-0.136	-0.64							
Repurchase Lag	0.593	10.99	***	0.290	5.08	***	-0.012	-0.96		-0.002	-0.22		0.624	11.70	***	0.289	4.76	***						
ε				0.046	19.47	***	0.006	17.29	***	0.006	17.29	***				0.048	18.35	***						
N	1200			201			1200			201			1200			201			1200			201		
adj. R2																			0.7133			0.7508		
Log Likelihood	1383.8			310.1			1438.8			556.8			1197.9			258.4			2842.6					

[a]CapEx is a simple OLS regression (consistent with BDMR) as there is no cluster of zero values for CapEx. Controls for payout have been excluded.

Definitions for the variables in this table are shown in Table 4 in this appendix.

Appendix 1, Table 2: Results of Regressions – Extension 1 – BDMR Model, S&P 500 Sample with FY Reporting Firms

	Total Payout			Dividends			Repurchases			CapEx[a]		
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.013	0.34		-0.008	-1.02		0.019	0.60		-0.016	-1.71	*
Post	-0.015	-1.34		0.001	0.52		-0.017	-1.87	*	-0.002	-0.97	
Foreign cash	0.182	4.12	***	0.016	1.65	*	0.143	3.85	***	-0.002	-0.20	
Foreign Cash x Post	0.209	3.31	***	0.007	0.53		0.226	4.25	***	-0.003	-0.22	
Domestic Cash	0.222	4.97	***	0.017	1.68	*	0.148	3.94	***	0.031	3.31	***
Book ETR	0.028	0.55		0.010	0.91		-0.003	-0.08		-0.012	-0.88	
Cash ETR	0.007	0.17		-0.014	-1.51		0.038	1.11		0.014	1.64	
Loss	0.027	1.39		-0.005	-1.20		0.009	0.54		-0.009	-2.65	***
Size	-0.008	-2.23	**	0.000	0.52		-0.008	-2.58	***	0.002	1.95	*
Earnings	0.277	2.98	***	-0.029	-1.36		0.306	3.89	***	0.003	0.16	
Cash Flow	0.218	2.94	***	0.028	1.66	*	0.157	2.50	**	0.022	1.27	
Leverage	0.068	2.60	***	0.010	1.71	*	0.038	1.69	*	-0.003	-0.68	
MTB	0.000	2.25	**	0.000	0.49		0.000	1.76	*	0.000	-0.48	
Sales Growth	-0.155	-4.19	***	-0.032	-3.95	***	-0.105	-3.26	***	0.008	1.16	
CapEx2014	-0.190	-1.23		-0.012	-0.35		-0.147	-1.11		0.855	19.34	***
RD	-0.239	-2.26	**	-0.024	-1.01		-0.212	-2.36	**	-0.034	-1.52	
ACQ	-0.027	-0.87		-0.024	-3.47	***	-0.017	-0.64		-0.017	-4.23	***
Firm Age	0.001	3.18	***	0.000	2.24	**	0.001	3.09	***			
RE/BV	-0.003	-1.34		0.000	-0.52		-0.002	-0.95				
Returns	0.023	2.65	***	0.002	1.16		0.021	2.75	***			
Options	-0.031	-1.30		0.005	0.89		-0.070	-3.23	***			
St. Dev Earnings	0.053	0.31		-0.015	-0.41		0.075	0.51				
Dividends Lag	0.283	1.68	*	0.906	23.86	***	-0.469	-3.28	***			
Repurchase Lag	0.275	4.50	***	-0.027	-1.92	*	0.321	6.24	***			
ε	0.063	25.36	***	0.013	23.01	***	0.053	24.17	***			
N	333			333			333			333		
adj. R2										0.7791		
Log Likelihood	426.77			765.09			426.34					

[a] CapEx is a simple OLS regression (consistent with BDMR) as there is no cluster of zero values for CapEx. Controls for payout have been excluded. Definitions for the variables in this table are shown in Table 4 in this appendix.

Appendix 1, Table 3: Results of Regressions – Extension 2 – BDMR Model - S&P 500 Sample; FY firms and TCJA+2

	Total Payout			Dividends			Repurchases			CapEx[a]		
	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig	Coeff	T-val	Sig
Intercept	0.062	1.88	*	0.011	1.34		0.037	1.38		-0.019	-2.33	**
Post1	0.224	5.15	***	0.019	1.74	*	0.161	4.54	***	0.000	0.04	
Foreign cash	-0.009	-0.83		0.003	1.07		-0.015	-1.73	*	-0.002	-0.80	
Foreign Cash x Post1	0.211	3.27	***	0.006	0.37		0.235	4.49	***	-0.002	-0.17	
Post2	-0.034	-3.10	***	-0.001	-0.47		-0.033	-3.62	***	-0.004	-1.71	*
Foreign Cash x Post2	0.257	3.90	***	0.041	2.48	**	0.178	3.31	***	0.015	0.89	
Domestic Cash	0.229	5.69	***	0.011	1.09		0.157	4.78	***	0.032	3.96	***
Book ETR	-0.009	-0.21		0.004	0.33		-0.007	-0.18		-0.007	-0.61	
Cash ETR	0.025	0.71		-0.009	-1.00		0.027	0.94		0.012	1.57	
Loss	0.016	0.89		-0.011	-2.49	**	0.017	1.15		-0.007	-2.20	**
Size	-0.011	-3.50	***	-0.001	-1.19		-0.009	-3.32	***	0.002	2.69	***
Earnings	0.310	3.95	***	-0.031	-1.50		0.319	4.97	***	0.003	0.19	
Cash Flow	0.097	1.63		0.011	0.74		0.088	1.80	*	0.012	0.94	
Leverage	0.085	3.71	***	0.003	0.56		0.053	2.82	***	-0.002	-0.59	
MTB	0.000	4.00	***	0.000	3.24	***	0.000	2.13	**	0.000	-1.40	
Sales Growth	-0.159	-4.64	***	-0.042	-4.99	***	-0.088	-3.08	***	0.006	0.96	
CapEx2014	0.060	0.43		-0.004	-0.13		0.018	0.16		0.852	22.03	***
RD	-0.204	-2.15	**	-0.011	-0.43		-0.195	-2.50	**	-0.037	-1.92	*
ACQ	-0.040	-1.20		-0.028	-3.31	***	-0.027	-0.98		-0.017	-3.74	***
Firm Age	0.001	3.01	***	0.000	1.37		0.001	3.14	***			
RE/BV	-0.003	-2.36	**	-0.001	-2.73	***	-0.001	-0.68				
Returns	0.015	1.71	*	0.001	0.60		0.016	2.33	**			
Options	-0.034	-1.39		0.008	1.36		-0.068	-3.27	***			
St. Dev Earnings	-0.197	-1.35		-0.007	-0.19		-0.218	-1.76	*			
Dividends Lag	0.186	1.19		0.968	23.89	***	-0.492	-3.86	***			
Repurchase Lag	0.256	4.64	***	-0.041	-2.91	***	0.320	7.12	***			
ε	0.065	29.21	***	0.015	26.75	***	0.053	27.81	***			
N	441			441			441			441		
R2										0.7591		
Log Likelihood	553.30			974.21			563.76					

[a] CapEx is a simple OLS regression (consistent with BDMR) as there is no cluster of zero values for CapEx. Controls for payout have been excluded. Definitions for the variables in this table are shown in Table 4 in this appendix.

Appendix 1, Table 4: Variable Definitions: Beyer, Downes, Mathis and Rapley (2020) (BDMR Model)

Variable/data item	Description	Measure of/Proxy for	Notes
Expenditure			
Total Payout	Dividends and repurchases	shareholder payouts	
Dividends	dividends paid scaled by total assets at yearend 2014	shareholder payouts	
Repurchases	stock repurchases scaled by total assets at yearend 2014	shareholder payouts	
CAPEX	capital expenditures scaled by total assets at yearend 2014	domestic Investment	
Key variables of interest			
Post	dummy variable equal to one for fiscal years ending in 2018 and zero for fiscal years ending prior to 2018		
Foreign Cash	Foreign Cash at fiscal yearend 2014 scaled to total Assets at fiscal yearend 2014		
Post X For. Cash	interaction term*		
Domestic Cash	Total Cash at yearend 2014 minus Foreign Cash at yearend 2014 scaled to total Assets at yearend 2014		
Operating Characteristics			
Size	Log of Total Assets at yearend 2014	Size	Control (payout)
Loss	equal to one when income before extraordinary items is less than zero and equal to zero otherwise	profitability	Control (payout)
Earnings	income before extraordinary items scaled to Total Assets at yearend 2014	profitability	Control (payout)
Cash Flow	operating cash flows scaled to Total Assets at yearend 2014	financial flexibility	Control (payout)
RE/BV	retained earnings scaled by book value of equity for current year (t)	financial flexibility	Control (payout)
Returns	firm's stock return compounded monthly for the two-year period ending before the current year (t)	financial flexibility	Control (payout)
Options	annual percentage change in total diluted shares outstanding as if no repurchases occurred the current year (t)	financial flexibility	Control (payout/repurchases)
St. Dev. Earnings	standard deviation of earnings for the current (t) and previous four years.	profitability/consistency	Control (payout)
Tax Characteristics			
Book ETR	2014 income tax expense scaled by pretax income minus special items, truncated at 0 and 1		
Cash ETR	2014 cash taxes paid scaled by pretax income minus special items, truncated at 0 and 1		
Growth Characteristics			
MTB	market value of equity scaled by book value of equity	financial strength/flexibility	Control (payout and growth)
CapEx 2014	Capital expenditures in 2014 scaled to Total Assets at yearend 2014	Investment opportunities	Control (Capex)
Sales Growth	CY sales minus PY sales/PY sales	Growth prospects	Control (Capex)
RD	research and development expense scaled to Total Assets at yearend 2014	Investment opportunities	Control (Capex)
Acquisitions	funds spend on mergers and acquisitions scaled to Total Assets at yearend 2014	Investment opportunities	Control (Capex)
Leverage	Debt to Total Assets	leverage and paydown	Control (Capex)
Other Firm Characteristics Controls			
Firm Age	Log of the number of years that the firm has appeared in the Compustat database		Control (payout and growth)

* positive and significant estimated coefficient on the interaction indicates post-TCJA expenditure is associated with pre-TCJA foreign cash holdings.