

IMPACT OF THE 2017 TAX CUTS AND JOBS ACT ON FOREIGN CASH HOLDINGS OF U.S. MULTINATIONAL CORPORATIONS

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ABSTRACT

U.S. Multinational Corporations (MNCs) generate significant amounts of income in foreign countries through their international affiliates and subsidiaries. Prior to 2018, this income was subject to U.S. taxation only when repatriated to the U.S., creating an incentive for those firms to retain these earnings in their foreign subsidiaries and leading to the accumulation of large amounts of cash held by U.S. corporations outside of the U.S. The Tax Cuts and Jobs Act (TCJA), which was signed into law by President Trump on December 22, 2017, changed the corporate taxation of U.S. MNCs to a territorial system and created an immediate tax liability for U.S. MNCs' "deemed repatriation" of their past foreign earnings. A primary objective of the change in the corporate tax structure was to encourage repatriation of accumulated foreign cash, as well as to eliminate the incentives to accumulate cash in foreign jurisdictions. This study examines the impact of the tax law changes on cash transactions and cash holdings of U.S. MNCs. Our results indicate a major policy goal of TCJA was largely accomplished, resulting in U.S. MNCs repatriating significant amounts of accumulated foreign cash, as well as reducing the future retention of earnings in foreign jurisdictions.

JEL: G14, G38, H25

KEYWORDS: Multinational Corporations, Tax Cut and Jobs Act, Foreign Cash, Trapped Cash

INTRODUCTION

U.S. based multinational corporations (MNCs) play a significant role in today's global economy, operating in many countries through international affiliates and subsidiaries, and generating significant amounts of sales and profits in foreign jurisdictions. Prior to 2018, U.S. authorities did not tax income generated by U.S. companies in foreign jurisdictions until these funds were repatriated to the U.S. This policy created a significant incentive for U.S. MNCs to retain income earned internationally in their foreign operations and subsidiaries, thereby avoiding U.S. taxation, which was significantly higher than most foreign jurisdictions. Smolyansky, Suarez, and Tabova (2018) estimate that by the end of 2017, U.S. MNCs had accumulated approximately \$1 trillion in foreign holdings of cash and cash equivalents, excluding amounts permanently invested in the companies' foreign operations. Pozsar (2018) shows that much of this cash is held in U.S.-dollar denominated fixed income assets such as U.S. Treasury Bonds. The tax-driven strategy of retaining excessive amounts of cash in foreign subsidiaries may be inefficient, leading to excessive investment in these foreign subsidiaries and negatively affecting the values of these MNCs, in addition to depressing U.S. tax collections. Specifically, Harford, Wang, and Zhang (2017) provide evidence that foreign cash is valued less than domestic cash and that this discount is greater than the pure tax effect. They find that MNCs subject to repatriation taxes underinvest domestically and overinvest abroad. In 2004, the American Jobs Creation Act (AJCA) was passed as a temporary tax holiday to induce repatriation of foreign earnings, increase tax revenue, and increase domestic investment by U.S. MNCs. The AJCA resulted in over \$290 billion of foreign earnings being repatriated (Blouin and Krull, 2009) and

reduced the propensity for value-decreasing acquisitions (Edwards, Kravet, and Wilson, 2016). Faulkender and Petersen (2012) found that the repatriation of earnings funded approved domestic investments among capital-constrained firms, but no increase in investment from unconstrained firms, which accounted for the majority of repatriated funds. Following the temporary increase in repatriations induced by the TCJA, U.S. MNCs began once again accumulating significant cash abroad. DeSimone, Piotroski, and Tomy (2019) argue that the temporary success of the AJCA in bolstering tax revenues fueled discussion of further similar legislation (introduced but not enacted beginning in 2008) resulting in expectations of similar future legislation and creating an incentive for MNCs to accumulate even more foreign cash in anticipation of future tax relief. The Tax Cuts and Jobs Act (TCJA), which was signed into law by President Trump on December 22, 2017, reduced U.S. corporate tax rates, changed the corporate taxation of U.S. MNCs to a territorial system, and created an immediate tax liability for these MNCs' "deemed repatriation" of their past unrepatriated foreign earnings.

Clemons and Shevlin (2016) discuss the importance of academic research directly applicable to policy making and argue that the most effective way for academic research to influence tax policy is to directly address tax policy in academic research. In this study, we review the impact of the TCJA on U.S. MNCs' decisions on repatriation of foreign earnings and foreign cash holdings. We observe that one of the primary policy objectives of the TCJA with regard to U.S. MNCs is indeed accomplished, resulting in significant repatriation of foreign cash holdings and reducing the future retention of foreign earnings in foreign jurisdictions. The remainder of the paper is organized as follows. The next section summarizes the relevant literature. Next, we discuss the data and methodology used in the study. The results are presented in the following section. The paper closes with some concluding comments.

LITERATURE REVIEW

Prior to the enactment of the Tax Cuts and Jobs Act (TCJA) of 2017, which became effective January 1, 2018, the U.S. corporate income tax rate was one of the highest in the world. Jahnsen and Pomerleau (2017) estimate that the combined federal and state taxation for U.S. corporations of 38.91% gave the United States the fourth highest statutory corporate income tax rate in the world. Bunn (2018) estimates that the passage of the TCJA reduced the combined Federal and state corporate tax rate in the U.S. to 25.84%, substantially lowering its rank to 83rd highest in the world. Table 1 provides a summary of statutory corporate income tax rates by region in 2017 and 2018, as reported by Jahnsen & Pomerleau (2017) and Bunn (2018). Under longstanding U.S. tax code, U.S. based corporations were taxed on foreign earnings only when they repatriated these earnings to the U.S., with credit for foreign taxes paid. Since U.S. tax rates were significantly higher than the tax rates in most countries where U.S. multinational corporations (MNCs) operate, repatriation of earnings generated by foreign affiliates and subsidiaries by transferring the funds to the U.S. parent company would result in a significant tax liability for those MNCs. Therefore, the U.S. tax code provided a clear incentive for MNCs to keep, accumulate, and invest earnings generated by their foreign affiliates and subsidiaries outside U.S. jurisdiction, in order to minimize their tax liability.

The literature includes a significant amount of evidence to indicate the U.S. MNCs indeed behaved as expected given the above incentive structure, accumulating significant amounts of permanently reinvested foreign earnings, and holding significant amounts of cash and cash equivalents in their foreign subsidiaries. McKeon (2017) reports that Russell 1000 companies held over \$2.6 trillion in permanently reinvested earnings (PRE) in their foreign operations and affiliates in 2016. Smolyansky, Suarez, and Tabova (2018) estimate U.S. MNCs holdings of foreign cash and cash equivalents at the end of 2017 at approximately \$1 trillion. Huang, Manakyan, and Mathers (2020) estimate aggregate foreign cash holdings of Russell 1000 companies at over \$923 billion in 2016 and over \$912 billion in 2017, based on hand collected data from U.S. corporations' SEC 10-K filings. Foley, Hartzell, Tittman, and Twite (2007) show that firms facing higher repatriation tax rates hold higher levels of cash abroad in affiliates in lower tax jurisdictions.

Faulkender, Hankins, and Petersen (2019) find that U.S. MNCs’ foreign cash balances are explained by low foreign tax rates and relaxed restrictions on income shifting.

Table 1: Average Statutory Corporate Tax Rate by Region or Group

Region or Group	2017		2018	
	Average Rate	GDP Weighted Average Rate	Average Rate	GDP Weighted Average Rate
Africa	28.73%	28.20%	28.81%	28.39%
Asia	20.05%	26.26%	20.65%	26.42%
Europe	18.35%	25.58%	18.38%	25.43%
North America	23.08%	37.01%	23.01%	26.22%
Oceania	23.67%	27.10%	22.00%	27.04%
South America	28.73%	32.98%	28.08%	32.20%
BRICS	28.32%	27.34%	28.40%	27.33%
EU	21.82%	26.25%	21.86%	26.03%
G20	28.04%	30.90%	27.37%	27.18%
G7	29.57%	33.48%	27.63%	27.21%
OECD	24.18%	31.12%	23.93%	26.58%
World	22.69%	29.41%	23.03%	26.47%
USA	38.91%		25.84%	

This table provides the average statutory corporate tax rates by region for the pre-TCJA period of 2017 and the post-TCJA period of 2018. The data are sourced from Tax Foundation Fiscal Fact No: 559, Jahnsen and Pomerlau (2017) and Tax Foundation Fiscal Fact No: 623 Bunn (2018).

The hoarding of idle cash and overinvestment in foreign subsidiaries results in a reduction of U.S. tax revenue in addition to having numerous negative effects for these MNCs. Harford, Wang, and Zhang (2017) show that the value shareholders place on foreign cash is lower than domestic cash and that this discount is greater than the pure tax effect, depressing the valuations of these MNCs. They find that this valuation effect is related to financing frictions and agency problems, as MNCs subject to repatriation taxes underinvest domestically and overinvest abroad. Similarly, Edwards, Kravet, and Wilson (2016) and Hanlon, Lester, and Verdi (2015) find that U.S. MNCs with significant permanently reinvested earnings held as cash make less profitable cash acquisitions of foreign targets, indicating suboptimal decision making resulting from excess cash holdings. By contrast, Campbell, Dhaliwal, Krull, and Schwab (2018) find that overall excess foreign cash is not discounted relative to domestic cash, but that excess foreign cash held in high agency cost environments carries a discount. They suggest that such a discount is due to the country-specific location of assets and is likely to persist even after corporate tax reform.

Albring (2006) and De Simone and Lester (2018) demonstrate that trapped cash abroad induces MNCs to increase their domestic borrowing to fund shareholder payout and domestic investment. Finally, Fabrizi, Parbonetti, Ipino, and Magnan (2016) show that cash held abroad generates uncertainty among market participants. Greater foreign cash holdings are associated with greater information uncertainty among analysts resulting in more dispersed beliefs and abnormal trading volumes among investors. The American Job Creation Act (AJCA) enacted in 2004 provided a temporary repatriation tax holiday to encourage repatriation of foreign earnings and increase tax revenue. The AJCA created a onetime dividend received deduction of 85% on extraordinary repatriations of up to \$500 million of PRE disclosed in the most recent financial statements, resulting in a reduction in the effective U.S. tax on those foreign earnings from 35 to 5.25 percent. Blouin and Krull (2009) estimate that the AJCA resulted in the repatriation of over \$290 billion of foreign earnings. Smolyanski et al (2018) place the estimated repatriation in 2005 at \$312 billion. Though well intentioned, the AJCA was only a temporary measure, with only a short-term impact. DeSimone, Piotroski, and Tomy (2019) argue that the AJCA may indeed have had the opposite long-term impact than intended. They contend that the temporary nature of the AJCA and discussion of further similar legislation introduced but not enacted beginning in 2008, resulted in expectations of similar future

legislation and created an incentive for MNCs to accumulate even more foreign cash by delaying repatriations in anticipation of future tax relief.

The TCJA permanently addressed the foreign overinvestment and cash hoarding issue by changing to a territorial taxation system for U.S. corporations. Effective 2018, corporate income is taxed in the country it is earned, and only income earned by corporations in the U.S. is taxed in the U.S. In addition, the top federal corporate tax rate was reduced to 21%, bringing it more in line with taxation rates in regions where U.S. MNCs operate and reducing the need for tax-driven reinvestment strategies. In addition, the TCJA “deemed repatriation” provision imposed a one-time tax of 15.5% on foreign liquid assets and 8% on illiquid assets, payable over eight years, regardless of whether these funds are repatriated (York 2018). Other important provisions included the minimum tax on global intangible low-taxed income (GILTI), which is explained in detail in Pomerlau (2019); the base erosion and anti-abuse tax (BEAT), explained in detail in Forst and Fuller (2020); the deduction for foreign derived intangible income (FDII), explained in detail in Karnis (2019); 100% deduction for dividends received from 10% owned foreign corporations; and 100% bonus depreciation for most capital expenditures for the next five years. The combined impact of these changes should be to substantially reduce or eliminate the incentive for MNCs to hoard cash abroad, serving the dual purpose of increasing U.S. tax revenue and incentivizing more efficient and value maximizing investments by MNCs. Wagner, Zeckhauser, and Ziegler (2018) review the valuation of U.S. firms during the “legislative period” leading up to the passage of the TCJA, and find that high tax firms were big beneficiaries, while firms with significant foreign exposures lagged. Similarly, Huang, Manakyan, and Mathers (2020) find that though the overall market reaction to the TCJA was positive, the valuation impact on firms with greater foreign exposure was negative.

DATA AND METHODOLOGY

To examine the impact of the Tax Cuts and Jobs Act (TCJA) on foreign cash holdings of U.S. multinational corporations (MNCs), we start with an examination of international transactions in primary income data produced by the U.S. Bureau of Economic Analysis (BEA) for the entire data availability range of 1999 to 2019. This data source identifies the foreign earnings of MNCs, the dividends repatriated to the U.S. parent companies, and the amounts reinvested in foreign affiliates. Table 2 below is based on the BEA data on the aggregate foreign income of U.S. MNCs and their dividends paid to their U.S. parent companies. We calculate the aggregate value of cumulative reinvestment of foreign earnings by U.S. MNCs as the cumulative sum of reinvested earnings starting in 1999, as described in equation (1).

$$\text{Cumulative Reinvested Earnings}_n = \sum_{t=1999}^n \text{Reinvested Earnings}_t \quad (1)$$

Note that this computation differs from the permanently reinvested earnings (PRE) reported on company financial statements, as it includes amounts held in cash, cash equivalents, and other short-term investments as well as PRE. We compute the aggregate repatriation ratio of foreign earnings by U.S. MNCs for each year t as the ratio of the dividends and withdrawals amount to the foreign income amount reported by the BEA for each year, as described in equation (2).

$$\text{Repatriation Ratio}_t = \frac{\text{Dividends and Withdrawals}_t}{\text{Foreign Income}_t} \quad (2)$$

We observe that by 2017, U.S. MNCs had accumulated over \$3.869 trillion in reinvested foreign earnings. This amount is consistent with estimates in earlier literature. Smolyansky, Suarez, and Tabova (2018), estimate U.S. MNCs foreign cash and cash equivalent holdings at the end of 2017 at approximately \$1 trillion, and McKeon (2017) reports that Russell 1000 companies held over \$2.6 trillion in permanently reinvested earnings (PRE) in their foreign operations and affiliates in 2016. The combination of these estimates is similar in magnitude to our estimate of cumulated foreign earnings using BEA data. In addition,

we examine the foreign cash and cash equivalent holdings of U.S. MNCs over the 2014 to 2018 period using hand collected data from the annual 10-K reports of U.S. MNCs. We start with all firms included in the Russell 1000 index in 2018, which roughly represents the largest 1000 U.S. firms by market capitalization. Eliminating Utilities and REITs leaves a sample of 835 firms that have data available on Compustat during the study period.

Table 2: U.S. Multinational Corporations’ International Transactions in Primary Income, 1999-2019

	1999	2000	2001	2002	2003	2004	2005
Foreign Income	125,990	144,834	122,258	139,300	178,206	240,334	279,062
Dividends and Withdrawals	62,536	52,863	53,235	54,601	59,459	81,555	298,712
Reinvested Earnings	63,454	91,971	69,023	84,698	118,747	158,779	-19,650
Cumulative Reinvested Earnings	63,454	155,425	224,448	309,146	427,893	586,672	567,022
Repatriation Ratio	49.6%	36.5%	43.5%	39.2%	33.4%	33.9%	107.0%
	2006	2007	2008	2009	2010	2011	2012
Foreign Income	306,768	354,311	397,401	354,854	430,360	459,739	448,869
Dividends and Withdrawals	101,686	132,833	172,448	128,561	132,616	151,122	164,883
Reinvested Earnings	205,082	221,478	224,954	226,293	297,744	308,617	283,987
Cumulative Reinvested Earnings	772,104	993,582	1,218,536	1,444,829	1,742,573	2,051,190	2,335,177
Repatriation Ratio	33.1%	37.5%	43.4%	36.2%	30.8%	32.9%	36.7%
	2013	2014	2015	2016	2017	2018	2019
Foreign Income	459,144	462,484	433,903	441,025	534,351	560,746	552,428
Dividends and Withdrawals	144,080	157,763	149,075	161,491	184,170	850,868	396,333
Reinvested Earnings	315,064	304,721	284,829	279,534	350,181	-290,123	156,095
Cumulative Reinvested Earnings	2,650,241	2,954,962	3,239,791	3,519,325	3,869,506	3,579,383	3,735,478
Repatriation Ratio	31.4%	34.1%	34.4%	36.6%	34.5%	151.7%	71.7%

Source: Bureau of Economic Analysis (BEA) International transactions data, table 4.1 (U.S. International transactions in primary income). The BEA identifies the Foreign Income of multinational corporations, the Dividends and Withdrawals repatriated to the US parent companies, and the Reinvested Earnings, which are the amounts reinvested in foreign affiliates. We calculate Cumulative Reinvested Earnings as the cumulative sum of Reinvested Earnings starting in 1999, $Cumulative\ Reinvested\ Earnings_n = \sum_{t=1999}^n Reinvested\ Earnings_t$. We calculate Repatriation Ratio $Ratio_t = \frac{Dividends\ and\ Withdrawals_t}{Foreign\ Income_t}$. All dollar values are reported in millions of U.S. dollars.

We collect annual 2014 to 2018 fiscal year financial information from Compustat, including total assets, total cash and cash equivalents, total revenues, and foreign revenues. In addition, we hand collect the reported amount of cash held in foreign jurisdictions in fiscal years 2014 to 2018 from SEC 10-K filings using key word searches and manual reading of filings to identify foreign cash holdings. Yang (2015) documents that the Securities and Exchange Commission (SEC) began issuing comment letters on foreign cash holdings in its review of 10-K filings in 2011. These comment letters were more likely for large firms and those with a significant amount of permanently reinvested earnings. While the apparent SEC interest in foreign cash holdings increased their disclosure, not all firms choose to disclose this information. In addition, total foreign cash holdings of U.S. MNCs are heavily concentrated in the largest firms. Smolyansky, Suarez, and Tabova (2019) estimate that prior to the passage of the TCJA, the top 15 holders of foreign cash accounted for approximately 80 percent of total foreign cash holdings, and these firms held approximately 80 percent of their total cash abroad. In Table 3, we provide descriptive statistics for our sample of companies with all variables winsorized at the 1% level to minimize the impact of outliers. Of the 801 firms in the sample in 2014, 589 (73.5%) report foreign income (PIFO), but only 347 (43.3%) report their 2014 foreign cash holdings. The number of firms reporting foreign cash, and total foreign cash reported, peaks in fiscal year 2016, and drops substantially in 2018. The average (median) firm in our sample has total assets of nearly \$32 (\$7.5) billion and net assets (total assets reduced by cash and cash

equivalents) of just over \$28 (\$6.6) billion. For the 589 firms who report foreign income in 2014, the average (median) PIFO ratio (ratio of pre-tax foreign income to total revenues) is 5.34% (3.57%).

For those firms reporting foreign cash holdings, the average (median) foreign cash is 14.52% (7.11%) of net assets in 2014, declining to 8.45% (4.47%) in 2018. The mean (median) ratio of foreign cash to total cash is 54.86% (55.60%) in 2014, and rises over the next two years before dropping to 58.22% (58.95%) in 2017 and 52.80% (53.66%) in 2018. The mean (median) percentage change in foreign cash from 2014 to 2015 is 12.07% (5.48%). Average growth in foreign cash remains high in the following two years, with an average increase above 20% each year, before a large decline to -7.07% (-12.57%) in 2018. This provides initial confirmation of the repatriation of foreign cash following the TCJA. Table 3 also shows that aggregate foreign cash for the full sample follows a similar pattern of increasing from \$631.6 billion in 2014 to \$921.7 billion in 2016 before declining slightly to \$907.9 billion in 2017 and falling more dramatically to \$256.5 billion in 2018. We note a corresponding change in the number of firms reporting their foreign cash holdings, from 347 in 2014 to 377 in 2016, declining to 360 in 2017 and 336 in 2018. Therefore, there are two major concerns with drawing conclusions from these observed patterns and the hand-collected foreign cash data from 10-k reports. The first is that the 2017 fiscal year can include reporting dates from both the pre- and post-TCJA periods depending on the company's fiscal year cycle. The second is that we find that many of the largest holders of foreign cash stop reporting their foreign cash holdings after the passage of the TCJA. We discuss and adjust for both of these issues in the following section.

Table 3: Descriptive Statistics of Sample Russell 1000 Firms

Unbalanced Panel 2014-2018	2014	2015	2016	2017	2018
Mean Total Assets	31,958	32,830	33,959	35,638	36,544
Median Total Assets	7,538.0	8,075.0	8,709.1	9,231.4	9,783.0
N	801	813	832	835	833
Mean Net Assets	28,051	28,913	29,924	31,311	32,541
Median Net Assets	6,640.6	7,108.0	7,644.1	8,393.2	9,028.9
N	801	813	832	835	833
Mean PIFO Ratio	5.34%	4.50%	4.51%	5.51%	5.78%
Median PIFO Ratio	3.57%	3.13%	2.94%	3.47%	3.66%
N	589	600	621	632	630
Mean Foreign Cash	1,306.4	1,381.5	1,526.0	1,486.1	763.45
Median Foreign Cash	321.50	318.50	365.00	402.00	266.65
N	347	371	377	360	336
Mean % change in Foreign Cash		12.07%	23.35%	22.02%	-7.07%
Median % change in Foreign Cash		5.48%	14.55%	16.06%	-12.57%
N		342	365	350	320
Mean Foreign Cash/Total Cash	54.86%	58.83%	60.23%	58.22%	52.80%
Median Foreign Cash/Total Cash	55.60%	61.00%	64.17%	58.95%	53.66%
N	346	371	375	360	336
Mean Foreign Cash/Net Assets	14.52%	14.11%	14.47%	14.50%	8.45%
Median Foreign Cash/Net Assets	7.11%	5.95%	5.97%	6.21%	4.47%
N	346	371	375	359	336
Total Foreign Cash	631,619	792,114	921,681	907,894	256,503

This table provides descriptive statistics for our sample of companies by year, with all variables winsorized at the 1% level. Total assets is Compustat data item AT. Net Assets is defined as total assets (AT) minus total cash (CHE). Total Cash is total cash and equivalents (CHE). PIFO Ratio is defined as pre-tax foreign income (PIFO) divided by total revenue (REVT). Foreign Cash is hand-collected from firms' annual 10-K filings, when reported. Compustat data item codes used in the data definitions are in parentheses. All dollar values are reported in millions of U.S. dollars.

In addition, we further examine the impact of the TCJA on changes in the foreign cash holdings of U.S. MNCs using ordinary least squares regression analysis for the 2014 to 2018 period while controlling for various firm-level characteristics. In our regression specified as

$$FCTC_{it} = \beta_0 + \beta_1 TX_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 DA_{it} + \beta_5 ROA_{it} + \beta_6 PIFOR_{it} + \beta_7 CASHR_{it} + \sum_{j=1}^9 \gamma_j D_j + e_{i,t} \quad (3)$$

The dependent variable $FCTC_{it}$ is the ratio of foreign cash to total cash held by the firm i in fiscal year t . TX_{it} is a dummy variable with a value of one for post-TCJA observations (fiscal year 2018), and zero for pre-TCJA observations. $Size_{it}$ is firm size measured as the natural logarithm of total assets, MB_{it} is the firm's market-to-book ratio, DA_{it} measures leverage calculated as the total debt to total asset ratio, ROA_{it} measures profitability as the ratio of net income to total assets, $PIFOR_{it}$ measures international exposure of the firm as the ratio of foreign pretax income to total revenues, and $CASHR_{it}$ is a measure of the firm's liquidity calculated as the ratio of total cash to total assets. D_j are dummy variables to control for industry fixed effects based on 10 industry groups using two-digit SIC codes. D_j is equal to one for firm i 's two-digit industry code, or zero otherwise. Since we have used ten industry groups using two-digit SIC, we include nine industry dummy variables in the regression specification to avoid multicollinearity. Finally, e_{it} is the error term. We cluster standard errors by firm to account for possible autocorrelation in foreign cash holdings over time (Petersen 2009). We include an alternate specification for our regression analysis with the dependent variable $\Delta FCNA_{it}$ denoting approximate repatriation activity by the firm, measured as the change in foreign cash for firm i scaled by the net assets of firm i in fiscal year t , with all other variables as described above.

$$\Delta FCNA_{it} = \beta_0 + \beta_1 TX_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 DA_{it} + \beta_5 ROA_{it} + \beta_6 PIFOR_{it} + \beta_7 CASHR_{it} + \sum_{j=1}^9 \gamma_j D_j + e_{i,t} \quad (4)$$

Foreign cash data is collected from corporations' 10-K reports as discussed above. An issue with the hand collected 10-K data is that the 2017 fiscal year can include dates from both the pre- and post-TCJA periods depending on the company's fiscal year cycle. Therefore, we calculate the change in foreign cash as the annual change in foreign cash for each year, but skip fiscal year 2017, and include the change in foreign cash from fiscal year 2016 to fiscal year 2018 which accounts for the smaller number of observations for this variable. Table 4 provides summary statistics for the variables used in the regression analysis.

Table 4: Summary Statistics of Variables Used in the Regression Analysis

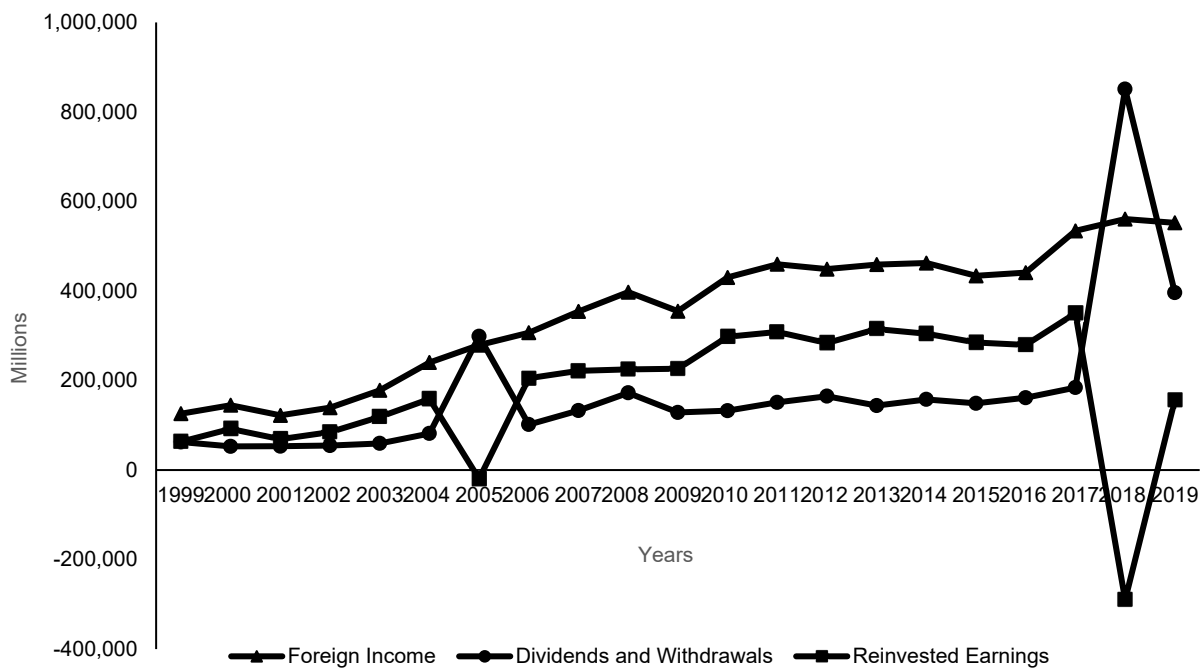
	N	Mean	Median	10th Pctl	90th Pctl	Std Dev
FCTC	1350	0.5774	0.6027	0.1280	0.9551	0.3210
$\Delta FCNA$	996	0.0074	0.0026	-0.0425	0.0707	0.0684
SIZE	1350	8.8467	8.7328	7.4112	10.4400	1.2245
MB	1350	4.3495	3.8006	1.2054	11.7348	13.7377
DA	1350	0.2896	0.2736	0.0237	0.5492	0.1901
ROA	1350	0.0687	0.0652	-0.0028	0.1541	0.0752
PIFOR	1350	0.0633	0.0487	0.0020	0.1617	0.0760
CASHR	1350	0.1773	0.1225	0.0260	0.4294	0.1629

This table provides summary statistics of the variables used in the regression analyses. $FCTC_{it}$ is the ratio of foreign cash as reported in the firm's 10-K report to total cash held by firm i in year t (CHE). $\Delta FCNA_{it}$ is the change in foreign cash, scaled by net assets (AT-CHE). $Size_{it}$ is firm size measured by natural log of total assets (AT). MB_{it} is the ratio of the firm's market value of equity ($CSHO * PRCC_F$) to its book value of equity (CEQ). DA_{it} is calculated as the total debt (DLTT+DLC) to total asset (AT) ratio. ROA_{it} measures profitability as the ratio of net income (NI) to total assets (AT). $PIFOR_{it}$ is calculated as the ratio of foreign pretax income (PIFO) to total revenues (REVT). $CASHR_{it}$ is the ratio of total cash and equivalents (CHE) to total assets (AT). Compustat data item codes used in the data definitions are in parentheses.

RESULTS AND DISCUSSION

In Figure 1, based on international transactions in primary income data produced by the U.S. Bureau of Economic Analysis (BEA) for the 1999 to 2019 period, and reported in Table 2 above, we observe the upward trend in foreign income of U.S. multinational corporations (MNCs). We similarly observe the rising reinvestment of foreign earnings (Reinvested earnings) in foreign jurisdictions. The rising pattern of foreign reinvestment is temporarily interrupted in 2005, following the 2004 passage of the American Job Creation Act (AJCA), which provided for a temporary reduction in taxation on repatriated earnings. According to Blouin and Krull (2009), the AJCA resulted in over \$290 billion of foreign earnings being repatriated, reducing the propensity for value-decreasing acquisitions as discussed in Edwards, Kravet, and Wilson (2016). However, due to the temporary nature of AJCA, its success in encouraging repatriation was also temporary. We observe in Figure 1 that immediately after the AJCA tax holiday, the rising pattern of foreign reinvestment resumes.

Figure 1: Foreign Income, Dividends to Parent Company, and Foreign Reinvestment of Earnings of U.S. Multinational Corporations: 1999-2019.



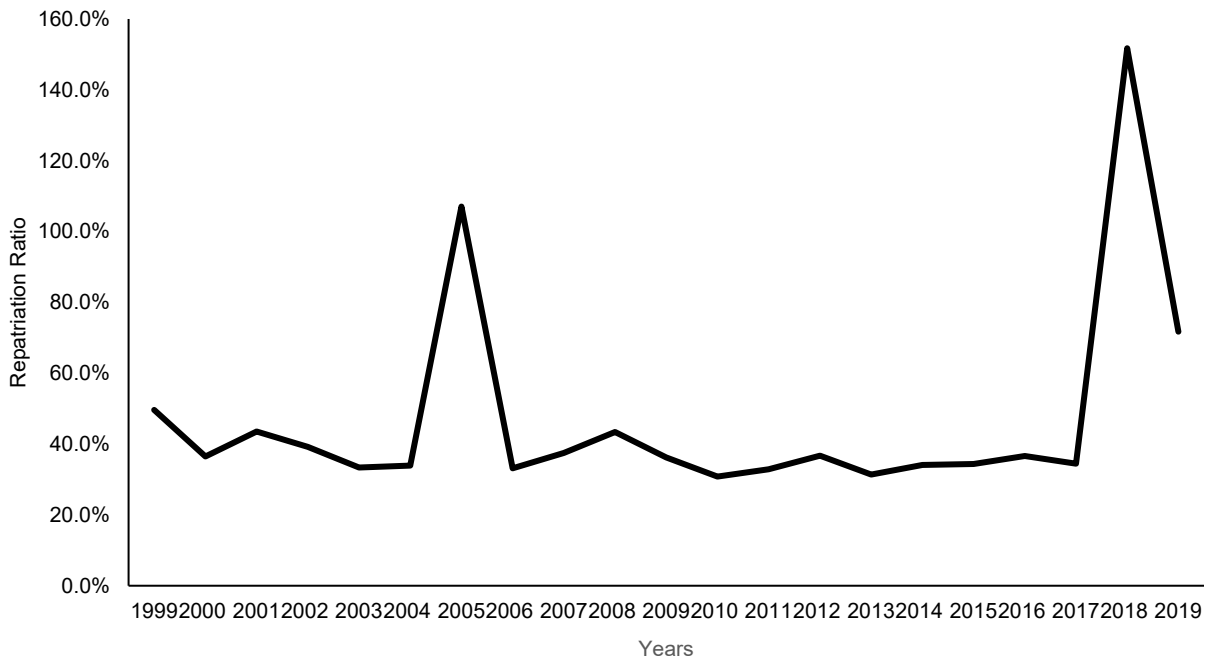
Source: Bureau of Economic Analysis (BEA) International transactions data, table 4.1 (U.S. International transactions in primary income). The BEA identifies the Foreign Income of multinational corporations, the Dividends and Withdrawals repatriated to the US parent companies, and the Reinvested Earnings, which are the amounts reinvested in foreign affiliates.

This is consistent with the argument of DeSimone, Piotroski, and Tomy (2019) that the temporary success of the AJCA fueled discussion of further similar legislation (introduced but not enacted beginning in 2008) which resulted in expectations of similar future legislation and created an incentive for MNCs to accumulate even more foreign cash in anticipation of future tax relief. The 2017 Tax Cuts and Jobs Act (TCJA) seems to have had a different impact, at least initially. We observe that following the sharp decline in foreign reinvestment of earnings to negative values in 2018, indicating a large wave of foreign earnings repatriation, foreign reinvestments in 2019 settled at a level substantially below prior year values. In Figure 2, we observe the repatriation rates of U.S. MNCs over time. In 2005, in response to the AJCA, the repatriation rate rises to 107%, indicating repatriation of previously reinvested earnings in addition to current year

earnings. Also as expected, the rise in the repatriation ratio is temporary, dropping to its long-term range of 30-40% immediately following the short-term impact of the AJCA.

As would be expected, the impact of the TCJA seems to be substantially larger, and permanent. The repatriation rate of U.S. MNCs’ foreign earnings spikes to 152% in 2018, due to the total repatriated funds in excess of \$850 billion as seen in Table 2, reflecting a significant transfer of previously retained foreign earnings to U.S. parent companies. Also importantly, the repatriation ratio in 2019 remains much higher than past years, settling at over 70%. This observation gives an initial indication that the TCJA is likely to have created a permanent change in the repatriation policy of U.S. MNCs. The BEA data summarized in Table 2, which is the source for the analysis in Figures 1 and 2, is gleaned from U.S. MNCs’ aggregate international transactions during each calendar year. We also provide additional direct evidence of U.S. MNCs foreign cash holdings and repatriation practices based on their financial statements, as reported in Table 3. Examination of U.S. MNCs 10-k statements provides a clear indication that many firms substantially increased their repatriation of foreign cash following the passage of the TCJA. For example, in its 2018 10-K report, Gilead Sciences states: “Of the total cash, cash equivalents and marketable securities at December 31, 2017, approximately \$31.5 billion was generated from operations in foreign jurisdictions. In February 2018, we repatriated \$28.0 billion of cash, cash equivalents and marketable securities to our parent company headquartered in the United States. Prior to the enactment of Tax Reform, these earnings were considered indefinitely reinvested and no U.S. taxes had been provided. In 2017, U.S. taxes have been provided on these earnings through the accrual of the Tax Reform transition tax. See Note 17, Income Taxes of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for additional details on Tax Reform.”

Figure 2: Repatriation Ratio of U.S. Multinational Corporations’ Foreign Earnings Over Time



Source: Bureau of Economic Analysis (BEA) International transactions data, table 4.1 (U.S. International transactions in primary income). The BEA identifies the Foreign Income of multinational corporations and the Dividends and Withdrawals repatriated to the US parent companies. We calculate the Repatriation Ratio as Dividends and Withdrawals divided by Foreign Income.

Similarly, Illinois Toolworks’ 2018 10-K report states, “As a result of the one-time repatriation provisions of the Act, the Company provided for substantially all U.S. taxes on the undistributed earnings of its foreign

subsidiaries as of December 31, 2017. During 2018, the Company repatriated approximately \$3.0 billion of cash and equivalents held by its international subsidiaries, a portion of which was used to repay outstanding commercial paper and to fund additional share repurchases.” However, the significant decline in reported foreign cash from 2016 to 2018 that we document in Table 3 cannot be fully attributed to repatriation. As documented by Kochkodin (2018), many companies stopped reporting their foreign cash holdings following the passage of the TCJA. In our sample, there were 63 firms that reported foreign cash holdings in 2016, but not in 2018, and 24 firms that had not reported foreign cash in 2016 which then reported in 2018, accounting for the difference of 39 observations. As we examine our list of reporting firms, we note that some of the largest holders of foreign cash in 2016 such as Apple Inc. (\$216 billion), Microsoft Corp. (\$108.9 billion), Oracle Corp. (\$54.4 billion), Alphabet Inc. (\$52.2 billion), Johnson & Johnson (\$41.3 billion), Qualcomm Inc. (\$29.6 billion), Gilead Sciences Inc. (\$27.4 billion), Intel Corp. (\$13.6 billion), Merck & Co. (\$12.2 billion), Eli Lilly & Co (\$9.8 billion), and others stopped reporting their foreign cash holdings in 2018. Collectively, the firms that stopped reporting make up \$633.9 billion, or 68.8%, of the total foreign cash holdings reported in 2016. Kochkodin (2018) argues that this change in firm reporting will make it challenging to observe whether the TCJA spurred additional corporate investment in the United States.

In Table 5, we show the 25 firms with the largest dollar value of foreign cash holdings in 2016, along with their reported 2018 foreign cash holdings. As discussed in Yang (2015), reporting of foreign cash holdings was encouraged by the SEC as material information due to potential future tax liabilities resulting from repatriation of foreign cash holdings. The passage of the TCJA changes the tax impact, imposing an immediate liability in the form of the deemed repatriation tax and eliminating the future tax distinction between domestic and foreign cash. Once the immediate liability was realized and booked, a number of firms likely concluded that their foreign cash holdings are no longer material information and need not be reported.

An additional issue with the hand collected 10-k data is that the 2017 fiscal year can include dates from both the pre- and post-TCJA periods depending on the company’s fiscal year end date. Therefore, in order to identify the impact of the TCJA on U.S. MNCs’ foreign cash holdings we conduct additional statistical analysis using a subsample of 310 firms which report foreign cash holdings in both 2016 and 2018 fiscal years, and exclude fiscal year 2017 data from our analysis, providing a comparison of time periods which are clearly pre-and post-TCJA. These results are provided in Table 6. When we focus on the balanced panel of firms that report their foreign cash holdings in both 2016 and 2018, we are able to verify the decline in overall foreign cash holdings as shown in Table 3 above. The Mean Difference shows that the average amount of foreign cash held by sample firms declined by \$123 million from pre-TCJA in 2016 to post-TCJA in 2018. While this number is not statistically significant given the extremely large variance in foreign cash holdings, it is economically meaningful compared to 2016 mean foreign cash of \$877 million. The average of total cash and equivalents also declined over this period, though by a lesser amount (approximately \$46 million), indicating that some of the reduction in foreign cash was accumulated as an increase in domestic cash.

Table 5: Top 25 U.S. Multinational Corporations by Foreign Cash Reported in 2016

Company Name	2016 Foreign Cash	2018 Foreign Cash	Change in Foreign Cash (2018-2016)	Percent Change in Foreign Cash
Apple Inc	216,000	Not reported		
Microsoft Corp	108,900	Not reported		
Oracle Corp	54,400	Not reported		
Alphabet Inc	52,200	Not reported		
Johnson & Johnson	41,300	Not reported		
Qualcomm Inc	29,600	Not reported		
Gilead Sciences Inc	27,400	Not reported		
Coca-Cola Co	20,200	14,400	-5,800.0	-28.71%
Pepsico Inc	15,200	5,700.0	-9,500.0	-62.50%
Intel Corp	13,600	Not reported		
Booking Holdings Inc	12,600	6,400.0	-6,200.0	-49.21%
Merck & Co	12,155	Not reported		
Procter & Gamble Co	11,000	11,400	400.00	3.64%
Lilly (Eli) & Co	9,770.0	Not reported		
Amazon.Com Inc	9,100.0	13,800	4,700.0	51.65%
Visa Inc	8,700.0	Not reported		
Bristol-Myers Squibb Co	8,000.0	1,400.0	-6,600.0	-82.50%
Vmware Inc -Cl A	6,921.0	Not reported		
Western Digital Corp	6,900.0	4,150.0	-2,750.0	-39.86%
Celgene Corp	6,113.0	2,800.0	-3,313.0	-54.20%
Franklin Resources Inc	5,937.9	Not reported		
Walmart Inc	5,900.0	7,700.0	1,800.0	30.51%
Nike Inc -Cl B	5,800.0	Not reported		
Biogen Inc	5,500.0	2,407.8	-3,092.0	-56.22%
Ebay Inc	5,329.0	4,458.0	-871.00	-16.34%

Foreign Cash is hand-collected from firms' annual 10-K filings, when reported. All dollar values are reported in millions of U.S. dollars.

Table 6: Changes in Foreign Cash Holdings Following Passage of the TCJA

	2018				2016				Mean Difference (2018-2016)	t-statistic
	N	Mean	Median	SD	N	Mean	Median	Std Dev		
Total Cash	310	1,687.3	668.34	3,503.2	310	1,733.2	675.50	3,582.1	-45.87	-0.16
Foreign Cash	310	753.54	278.25	1,631.2	310	876.92	323.45	1,704.2	-123.38	-0.92
Foreign Cash/Net Assets	310	0.09	0.05	0.12	310	0.13	0.06	0.22	-0.05***	-3.42
Foreign Cash/Total Cash	310	0.54	0.55	0.29	310	0.59	0.64	0.30	-0.05***	-2.20

Total Cash is total cash and equivalents (CHE). Foreign Cash is hand-collected from firms' annual 10-K filings, when reported. Net Assets is defined as total assets (AT) minus total cash (CHE). Compustat data items used in the data definitions are in parentheses. The Mean Difference is the difference in the 2018 mean value minus the 2016 mean value. T-statistic reports the significance of the Mean Difference. ***, ** and * indicate significance at the 1, 5, and 10 percent levels, respectively. All dollar values are reported in millions of U.S. dollars.

When we look at foreign cash as a percentage of net assets, defined as total assets less total cash and equivalents, and as a percentage of total cash, the difference in the pre- and post-TCJA periods is stark. We observe that the sample firms substantially decreased their foreign cash holdings as a percentage of total cash and as a percentage of net assets. These results, which are statistically significant, further suggest that after the TCJA sample firms repatriated more cash than needed for immediate use (e.g., to pay taxes owed due to deemed repatriation or fund payouts to shareholders) and instead added that cash to their domestic cash stockpile. In untabulated results, we also examined a smaller subsample of 232 firms with December fiscal year endings that reported foreign cash holdings in both 2017 and 2018 and our results remained qualitatively the same. Finally, we examine the impact of the TCJA on U.S. MNCs' foreign cash holdings while controlling for various firm characteristics, using multivariate ordinary least squares analyses described in equations (3) and (4). In columns (1) and (2), the dependent variable FCTC is the ratio of foreign cash to total cash held by the firm. In columns (3) and (4), we use the dependent variable $\Delta FCNA$ as a proxy for repatriation activity by the firm, measured as the change in foreign cash from the prior fiscal year, scaled by net assets. Since the 2017 fiscal year can include dates from both the pre- and post-TCJA periods, we calculate the change in foreign cash as the annual change in foreign cash for each year, but exclude fiscal year 2017, and instead include the change in foreign cash from fiscal year 2016 to fiscal year 2018. TX is a dummy variable with a value of one for post-TCJA observations (fiscal year 2018), and zero for pre-TCJA observations (fiscal years 2014 through 2016). Size is firm size measured as the natural logarithm of total assets, MB is the firm's market-to-book ratio, DA measures leverage calculated as ratio of total debt to total assets, ROA measures profitability as the ratio of net income to total assets, PIFOR measures international exposure of the firm as the ratio of foreign pretax income to total revenues, and CASHR is a measure of the firm's liquidity calculated as the ratio of total cash to total assets.

Table 7 presents the results of this multivariate analysis. We observe that in all specifications of the model, the coefficient of TX is negative and significant, indicating a lower FCTC and a more negative change in FCNA, or greater repatriations, in the post-TCJA period after controlling for various firm characteristics. In untabulated results, we similarly find that TX is negatively and significantly related to the ratio of foreign cash to net assets. As expected, we also observe that the coefficient on PIFOR, the ratio of foreign income to total revenue, is positive and significant in explaining the FCTC ratio. This result confirms the importance of the intensity of foreign operations in determining foreign cash holdings. The negative coefficient of CASHR indicates that for our sample firms, an increase in total cash ratios is associated with foreign cash making up a smaller fraction of total cash. However, we find that CASHR is positively related to the change in foreign cash, indicating that an increase in total cash was associated with a greater increase in foreign cash. We also observe that depending on the model specification, sectors 35 (Health Care), 40 (Financials) and 50 (Communication Services) are associated with lower levels of FCTC and smaller changes in FCNA relative to other sectors. In untabulated results, we repeat the regression analysis in Table 7 when limiting the sample to firms with December fiscal year end dates to enable us to incorporate fiscal year 2017. We observe qualitatively similar results and reach similar conclusions.

Table 7: Multivariate Analysis of the Impact of Firm Characteristics and the TCJA on Foreign Cash Holdings of U.S. Multinational Corporations

	FCTC	FCTC	ΔFCNA	ΔFCNA
TX	-0.078*** (0.016)	-0.076*** (0.016)	-0.027*** (0.006)	-0.027*** (0.006)
SIZE	-0.011 (0.013)	-0.003 (0.013)	0.005** (0.002)	0.005** (0.002)
MB	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
DA	0.057 (0.069)	0.032 (0.065)	0.016 (0.011)	0.013 (0.011)
ROA	0.144 (0.156)	0.170 (0.165)	0.040 (0.036)	0.050 (0.039)
PIFOR	1.590*** (0.228)	1.587*** (0.241)	0.035 (0.034)	0.030 (0.034)
CASHR	-0.688*** (0.080)	-0.644*** (0.083)	0.132*** (0.018)	0.134*** (0.019)
D ₁₅		-0.007 (0.099)		0.004 (0.007)
D ₂₀		-0.014 (0.089)		-0.001 (0.007)
D ₂₅		-0.098 (0.092)		-0.010 (0.008)
D ₃₀		-0.022 (0.097)		-0.005 (0.008)
D ₃₅		-0.065 (0.092)		-0.017* (0.009)
D ₄₀		-0.256** (0.109)		-0.009 (0.008)
D ₄₅		-0.023 (0.091)		0.002 (0.008)
D ₅₀		-0.182* (0.094)		-0.017* (0.010)
D ₆₀		-0.109 (0.103)		0.008 (0.008)
Constant	0.684*** (0.118)	0.674*** (0.159)	-0.059*** (0.020)	-0.058*** (0.023)
N	1,350	1,350	996	996
R2	0.211	0.251	0.145	0.156
Adjusted R2	0.207	0.242	0.139	0.142

This table presents the results from ordinary least squares regressions showing the impact of the TCJA on firms' foreign cash holdings and changes in foreign cash holdings. The first two columns show the regression estimates of the following equation: $FCTC_{it} = \beta_0 + \beta_1 TX_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 DA_{it} + \beta_5 ROA_{it} + \beta_6 PIFOR_{it} + \beta_7 CASHR_{it} + \sum_{j=1}^9 \gamma_j D_j$, where the dependent variable FCTC_{it} is the ratio of foreign cash as reported in the firm's 10-K report to total cash held by the firm in year i (CHE). The last two columns show the regression estimates of the following equation: $\Delta FCNA_{it} = \beta_0 + \beta_1 TX_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 DA_{it} + \beta_5 ROA_{it} + \beta_6 PIFOR_{it} + \beta_7 CASHR_{it} + \sum_{j=1}^9 \gamma_j D_j$, where the dependent variable ΔFCNA_{it} is the change in foreign cash for firm i, scaled by net assets (AT-CHE). We calculate the change in foreign cash for firm i as the annual change in foreign cash for each year, but skip fiscal year 2017, and include the change in foreign cash from fiscal year 2016 to fiscal year 2018. In both specifications, TX_{it} is a dummy variable with a value of one for post-TCJA observations (fiscal year 2018), and zero for pre-TCJA observations. Size_{it} is firm size measured by natural log of total assets (AT). MB_{it} is the ratio of the firm's market value of equity (CSHO*PRCC_F) to its book value of equity (CEQ). DA_{it} is calculated as the total debt (DLTT+DLC) to total asset (AT) ratio. ROA_{it} measures profitability as the ratio of net income (NI) to total assets (AT). PIFOR_{it} is calculated as the ratio of foreign pretax income (PIFO) to total revenues (REVT). CASHR_{it} is the ratio of total cash and equivalents (CHE) to total assets (AT). D_j are dummy variables to control for industry fixed effects based on 10 industry groups where j denotes the two-digit GICS codes. All variables except Size are winsorized at the 1% level. Compustat data items used in the data definitions are in parentheses. Standard errors are clustered by firm and are presented in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

CONCLUDING COMMENTS

As a number of prior studies have documented, U.S. multinational corporations (MNCs) have for many years accumulated cash and permanently reinvested earnings in their foreign operations. Negative economic consequences of this phenomenon include the loss of U.S. tax revenue, as well as the inefficient allocation of capital resources driven by tax avoidance considerations. The Tax Cuts and Jobs Act (TCJA), which was signed into law by President Trump on December 22, 2017, reduced U.S. corporate tax rates, changed the corporate taxation of U.S. MNCs to a territorial system, and created an immediate tax liability

for these MNCs' "deemed repatriation" of their past un-repatriated foreign earnings. A major policy goal of the TCJA was to eliminate the incentives for U.S. MNCs to retain excess funds in foreign jurisdictions, and to encourage higher rates of repatriation of foreign cash holdings and future foreign income.

In this study, we review the impact of the TCJA on U.S. MNCs' decisions on repatriation of foreign earnings and foreign cash holdings. We examine aggregate data on U.S. MNCs' foreign income, dividends paid to the U.S. parent corporations, and reinvestment of foreign earnings, and observe that significant amounts of foreign earnings were repatriated following the TCJA, and the repatriation rate of foreign earnings was increased following the TCJA. In addition, using firm-level data on foreign cash holdings, we observe that U.S. MNCs significantly reduced their foreign cash holdings as a percentage of total cash and as a percentage of net assets following the TCJA. We find that sample firms repatriated more cash than needed for immediate use and instead added some of the repatriated cash to their domestic cash stockpile. Multivariate results confirm both that firms repatriated a significant amount of their foreign cash holdings following the TCJA and that foreign cash declined as a fraction of total cash following the TCJA. Our results indicate that the policy goal of eliminating the incentives for U.S. MNCs to retain excess funds in foreign jurisdictions and encouraging higher rates of repatriation of foreign cash holdings and future foreign income, was indeed accomplished.

A limitation of this study is the reduction in the number of firms reporting their foreign cash holdings following the passage of the TCJA. Foreign cash holdings is not a standard required reporting item, and firms with large levels of foreign cash were specifically encouraged by the SEC through comment letters to report their foreign cash as material information due to potential future tax liabilities resulting from repatriation of foreign cash holdings. The passage of the TCJA changes the tax impact of foreign cash holdings, imposing an immediate liability in the form of the deemed repatriation tax. Once this liability was realized and booked, a number of firms likely concluded that their foreign cash holdings are no longer material information and need not be reported. The decision by many U.S. MNCs, including many of the largest holders of foreign cash prior to the TCJA, to quit reporting foreign cash holdings creates a difficulty in identifying the full impact of the TCJA on foreign cash holdings of these firms. Our findings have important implications for policymakers considering future tax and trade policy changes. Future research into the real effects of the TCJA is warranted, including its effect on the profitability of foreign acquisitions and the relative valuation assigned to foreign and domestic cash holdings by financial market participants. Studies of this nature will reveal if the implementation of the TCJA increased the efficiency of corporate decision-making and may shed light on the long-term valuation effects of the TCJA.

REFERENCES

- Albring, S. M. (2006) The effects of the cost of foreign internal funds on the probability that a firm issues domestic debt. *Journal of the American Taxation Association*, vol. 28(1), p. 25-41.
- Blouin, J and L. Krull (2009) Bringing it home: A study of the incentives surrounding the repatriation of foreign earnings under the American Jobs Creation Act of 2004. *Journal of Accounting Research*, vol. 47(4), p. 1027-59.
- Bunn, D. (2018) Corporate income tax rates around the world, 2018, *Tax Foundation Fiscal Fact No. 623*, Nov. 2018.
- Campbell, J., D. Dhaliwal, L. Krull and C. Schwab (2018) U.S. multinational corporations' foreign cash holdings: An empirical estimate and its valuation consequences, University of Georgia Working Paper.
- Clemons, R. and T. Shevlin (2016) Tax policy debate: Increasing the policy impact of academic tax accounting research. *Journal of the American Taxation Association*, vol. 38(1), p. 29-37.

De Simone, L. and R. Lester (2018) The effect of foreign cash holdings on internal capital markets and firm financing, Stanford University Working Paper.

Edwards, A., T. Kravet and R. Wilson (2016) Trapped cash and the profitability of foreign acquisitions. *Contemporary Accounting Review*, vol. 33(1), p. 44-77.

Fabrizi, M., A. Parbonetti, E. Ipino and M. Magnan (2016) Do foreign cash holdings generate uncertainty for market participants? CIRANO, Montreal, Quebec.

Faulkender, M. and M. Petersen (2012) Investment and capital constraints: Repatriations under the American Jobs Creation Act. *The Review of Financial Studies*, vol. 25(11), p. 3351-3388.

Faulkender, M., K. Hankins and M. Petersen (2019) Understanding the rise in corporate cash: Precautionary savings or foreign taxes. *The Review of Financial Studies*, vol. 32(9), p. 3299-3334.

Foley, C.F., J. Hartzell, S. Titman and G. Twite (2007) Why do firms hold so much cash? A tax-based explanation. *Journal of Financial Economics*, vol. 86(3), p. 579-607.

Forst, D. and J. Fuller (2020) US Inbound: Understanding the new BEAT regulations. *International Tax Review*, Jan 21, 2020.

Hanlon, M., R. Lester and R. Verdi (2015) The effect of repatriation tax costs on U.S. multinational investment. *Journal of Financial Economics*, vol. 116(1), p. 179-196.

Harford, J., C. Wang and K. Zhang (2017) Foreign cash: Taxes, internal capital markets, and agency problems. *Review of Financial Studies*, vol. 30(5), p. 1490-1538.

Huang, G. C., H. Manakyan and A. M. Mathers (2020) Foreign exposure level and the impact of the 2017 Tax Cuts and Jobs Act on valuation of US multinational companies. *Accounting & Taxation*, forthcoming.

Jahnsen, K. and K. Pomerleau (2017) Corporate income tax rates around the world, 2017, *Tax Foundation Fiscal Fact* No. 559, Sept 2017.

Karnis, D. (2019) Understanding the FDII deduction, *Journal of Accountancy*, February 1, 2019, <https://www.journalofaccountancy.com/issues/2019/feb/foreign-derived-intangible-income-deduction.html>.

Kochkodin, B. (2018). Companies stop reporting on overseas cash, *Treasury & Risk*, May 11, 2018, <https://www.treasuryandrisk.com/2018/05/11/companies-stop-reporting-on-overseas-cash/>.

McKeon, J. (2017) Indefinitely Reinvested Foreign Earnings Still Climbing, *Audit Analytics*, August 14, 2017, <https://www.auditanalytics.com/blog/indefinitely-reinvested-foreign-earnings-still-climbing/>.

Petersen, M. (2009) Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, vol. 22(1), p. 759-778.

Pomerleau, K. (2019) What is up with being GILTI? *Tax Foundation*, March 14, 2019.

Pozsar, Z. (2018). "Repatriation, the Echo –Taper and the €□\$ Basis," *Global Money Notes* #11 (New York: Credit Suisse, January).

Smolyansky, M., G. Suarez and A. Tabova (2018). “US Corporations’ Repatriation of Offshore Profits,” *FEDS Notes*. Washington: Board of Governors of the Federal Reserve System, September 4, 2018, <https://doi.org/10.17016/2380-7172.2239>.

Smolyansky, M., G. Suarez and A. Tabova (2019). “US Corporations’ Repatriation of Offshore Profits: Evidence from 2018” *FEDS Notes*. Washington: Board of Governors of the Federal Reserve System, August 6, 2019, <https://doi.org/10.17016/2380-7172.2239>.

Wagner, A. F., R. J. Zeckhauser and A. Ziegler (2018) Unequal rewards to firms: Stock market responses to the Trump election and the 2017 Corporate Tax Reform. *AEA Papers and Proceedings*, vol. 108, p. 590–596.

Yang, S. (2015) The disclosure and valuation of foreign cash holdings, University of British Columbia Working Paper.

York, E. (2018) Evaluating the changed incentives for repatriating foreign earnings, *Tax Foundation*, September 27, 2018.

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