

Do Foreign Operations Induce Multinational Firms to Tradeoff Real Operations Earnings Management for Tax Expense Planning?

Joonil Lee ^a

Peter (Seung Hwan) Oh ^{b*}

Brian S. Wenzel ^b

Yaping Zheng ^c

^a The School of Management
Kyunghee University
Seoul, Korea

^b Desautels Faculty of Management
McGill University
Montreal, Canada

^c School of Business
University of Alberta
Edmonton, Canada

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*Corresponding author:

Peter (Seung Hwan) Oh. Desautels Faculty of Management, McGill University. 1001 Sherbrooke St W, Montreal, Quebec H3A 1G5, Canada. E-mail: peter.oh@mcgill.ca Telephone: (+1) 514-398-6240

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ABSTRACT: We examine the effect that foreign operating activities related to production, manufacturing, purchase, and sales through subsidiaries (i.e., offshore internal input) has on the use of tax planning which reduces tax expense without increasing financial restatement risk inside multinational firms (i.e., tax expense planning). We hypothesize that increases in the offshore internal input of firms encourages managers to engage in more tax expense planning when managing earnings with real operating activities (i.e., real operations earnings management) is costly. Using a sample of multinational firms from the United States, we find that tax expense is reduced by designating a greater percentage of unremitted foreign earnings as permanently reinvestment overseas in the presence of abnormally large levels of offshore internal input. Further, consistent with our hypothesis, we find that multinational firms tradeoff costly real operations earnings management for this tax expense planning strategy. Our study contributes to the operations management literature by providing evidence that tax expense planning is a viable alternative to real operations earnings management for multinational firms, particularly when managing real operating activities is unattractive and when existing organizational structures allow firms to execute tax expense planning at relatively lower costs.

JEL classification: G15; H25; M41

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Data Availability: All data are publicly available from sources identified in the text.

1 Introduction

A recent study by Standard Chartered notes that 42 percent of multinational firms (MNF) from the largest, western capital markets, consider their best growth opportunities to be outside their domestic markets, indicating a strong preference for MNFs to diversify operations through overseas investment.¹ However, evidence suggests that an increase in foreign operations bears unintended consequences. Specific to taxes and government finances, academic studies find that large firms with extensive international operations avoid more taxes (Akamah et al. 2018; Lai et al. 2021; Rego 2003). This has led to legislative inquiries into MNF tax avoidance, including public testimony from executives of Alphabet Inc., Amazon.com, Inc., and Starbucks Corporation in the United Kingdom's House of Commons (BBC 2012) as well as from Apple Inc. in front of the United States Senate (Schwartz and Duhigg 2013). In turn, the Organisation for Economic Co-operation and Development (OECD) undertook a multiyear project culminating in 15 Action Items addressing base erosion and profit shifting—colloquially known as the BEPS project—stemming, in part, from MNF tax avoidance and planning activities (OECD 2016).

Motivated by the above, this study examines whether MNFs opportunistically substitute earnings management through real operating activities (i.e., real operations earnings management) with tax expense planning arising from offshore activities. As evidenced from both practice and prior research, firms do not generally exhaust all possible tax planning opportunities. One reason for this is that even mundane planning is costly (Gallemore and Labro 2015; Klassen et al. 2017; Mills et al. 1998), including payments for accounting and legal services, negative publicity from low effective tax rates (ETR) (Dharmapala and Riedel 2013; Gallemore et al. 2014; Graham et al. 2014), time spent keeping abreast of relevant legislation, and preparing and maintaining tax filings and other related paperwork (Benzarti 2015). This suggests a friction between implementation costs of tax expense planning and savings yielded from such planning. Thus, firms have capacity to substitute costly real operations earnings management with tax expense planning as the cost of manipulating real operating activities increases and tax expense planning subsequently becomes relatively less costly.

Tax expense planning is broadly defined as efforts made by a corporation to reduce its tax burden (Wilde and Wilson 2018). Since the focus of our study relates to the tradeoff between earnings management alternatives, we are interested in tax expense planning that lowers accounting tax expense—and thus net accounting income—without affecting financial restatement risk. There are three important points related to this view in our study. First, we do not focus on the manipulation of tax accruals, like those in prior tax-related earnings management studies such as Dhaliwal et al. (2004), Frank and Rego (2006) and Phillips et

¹ The largest economies identified in this study are those from France, Germany, the United Kingdom, and the United States. The study is discussed via this link: <https://ins-globalconsulting.com/news-post/us-companies-global-expansion/> (INS Global 2024).

al. (2003), because accruals-based earnings management, tax or otherwise, increases restatement risk (Jones et al. 2008). Second, firms must accrue deferred tax expense for temporary differences between financial reporting rules and tax law that will reconcile over time. That is, only permanent differences between book and tax can be effective tax expense planning in our study, because these differences are the only ones that can directly substitute for real operations earnings management in their impact to net accounting income. Finally, we do not consider tax expense planning that carries risk with the tax authorities, because such planning would require recognition of a contingent tax reserve such as the accrual of an unrecognized tax benefit, negating the impact to accounting net income.

We examine our research question—whether foreign operations (i.e., offshoring activity) leads to a tradeoff between real operations earnings management and tax expense planning—using a sample of MNFs in the United States. This setting is attractive for two reasons. First, earnings management increases in the complexity of moving from domestic to foreign operations (Chin et al. 2009), from the allocation of decision rights between parent and foreign subsidiary (Huang 2018), and due to operations in tax havens and foreign jurisdictions with weak rule of law (Dyreng et al. 2012; Shunko et al. 2017). Therefore, focusing on MNFs provides a setting where the opportunity to engage in real operations earnings management is greater. Second, using corporations from a single country—the United States—provides a standardized set of tax rules. As such, we can isolate a specific tax expense planning strategy available to all sample MNFs.

We use Hoberg and Moon's (2017; 2019) textual approach to separate foreign operations of MNFs into three categories: offshore output activities related to selling goods and services in foreign markets; offshore external input activities related to purchasing foreign inputs; and offshore internal input activities related to manufacturing goods or providing services by owning subsidiary foreign assets (e.g., a factory).² We focus on U.S. MNFs with offshore internal input due to the ability of such firms to *optionally* designate unremitted earnings from foreign operations as permanently reinvested overseas. The primary benefit of a permanently reinvested earnings (PRE) accounting designation, in general use through the end of 2017 prior to the enactment of the Tax Cuts and Jobs Act (TCJA), is that it did not require recognition of deferred U.S. income tax on designated unremitted foreign earnings for financial reporting purposes.

A PRE accounting designation aligns with the tax expense planning we need in our study that could be used to substitute for real operations earnings management. It lowered reported tax expense in the financial statements by eliminating the need to recognize a deferred tax liability for financial reporting purposes. Further, it did not increase financial restatement risk because it did not involve accruals in a traditional sense and was purely a financial accounting designation unrelated to interactions with the

² Offshore internal input activities also include offshore output and offshore external input activities by default as operating foreign business through subsidiaries includes not only manufacturing but also selling and purchasing.

Internal Revenue Service (IRS), the taxing authority in the United States. To be sure, a PRE designation was not costless, and thus it was not a priori certain that firms would utilize the financial reporting incentive of making a PRE designation. However, the marginal benefit of making a PRE designation was likely increasing in the level of abnormal offshore internal input. As such, it potentially became more cost effective for firms to manage accounting earnings via tax expense planning with PRE rather than through management of real operating activities (Zang 2012).

As an example, an MNF under pressure to meet an earnings target could manage earnings by cutting foreign salaries and wages or reducing foreign employment. However, such reductions in real operations would decrease intangible human capital and potentially lead to postponement of future promising endeavors. In contrast, tax expense planning via PRE did not require firms to change operational-level decisions and could have potentially been executed at lower cost via existing organizational structures than through managing real operations. An MNF could reduce tax expense via the PRE designation, which became more attractive in scale relative to time and bookkeeping costs and the inability to access the requisite cash and assets held overseas.³

We start our empirical investigation by testing whether PRE is increasing in the abnormal amount of offshore internal input. There is an insignificant correlation of -0.01 between the *abnormal* amount of offshore internal input and PRE in our sample, suggesting that our variables of interest are not mechanically related. Further, after controlling for variables potentially impacting PRE, we note a positive and significant relation between PRE and abnormal offshore internal input. This is intuitive; firms with abnormal intensities of conducting foreign operations through manufacturing goods or providing services by owning relevant foreign assets manage tax expense, and thus net income, with PRE. We further test the relation between real operations earnings management and the interaction of abnormal offshore internal input and PRE. We find a negative relationship, suggesting that firms trade away earnings management through real operations in favor of tax expense planning via PRE in the presence of abnormal levels of offshore internal input.

Next, we exploit the elimination of the worldwide corporate income tax regime in the United States with the enactment of the Tax Cuts and Jobs Act at the end of 2017 as an exogenous shock to validate our results. From 2018 and after, the benefit of a PRE designation is effectively null from a corporate income tax expense planning viewpoint, where foreign earnings of U.S. MNFs are generally no longer subject to additional domestic income tax.⁴ We identify firms in 2017 with the highest abnormal offshore internal

³ Discussions with tax directors, IRS officials, and other experts suggest that firms are most likely to use one of three tax planning transactions: (1) shift income to low-tax jurisdictions through transfer pricing agreements; (2) engage in additional cost segregation to maximize deductions; or (3) structure transactions to tax advantage of additional tax credits. Our setting is a direct subset of the former, corroborating the intuition of our hypotheses.

⁴ There are still additional taxes that a U.S. MNC may face on foreign income, such as those related to global intangible low-taxed income (GILTI). However, such taxes cannot be deferred indefinitely and thus still make a PRE designation ineffective.

input and highest PRE. Within this subset of firms, we find a significant difference in the relative average amount of earnings management via real operations between pre-TCJA (i.e., 2015 and 2016) compared to post-TCJA (i.e., 2018 and 2019), equating to a nearly threefold increase in real operations earnings management. This increase is consistent with firms most heavily utilizing PRE as an earnings management tool being forced to switch to real operations earnings management after such tax expense planning is no longer relevant.

We examine supplemental analyses to understand if the relation we observe between abnormal offshore internal input and PRE, and the consequential tradeoff between PRE and real operations earnings management, vary cross-sectionally along incentives and constraints to engage in tax expense planning. As it relates to settings where managers are desperate to engage in tax planning, we find that our main results are associated with firms that meet or just beat analyst earnings targets and are more pronounced in firms where management is compensated on after-tax earnings. Further, our main results are less pronounced for firms that had large amounts of cash outside of the United States (Foley et al. 2007) and for firms that have voluntarily enrolled in the IRS Compliance Assurance Process (CAP) for the greatest amount of time (De Simone et al. 2013). Both results are consistent with U.S. MNCs avoiding abnormal tax planning via PRE when it would be most costly to do so. Finally, as it relates to situations when managing real operations is most costly, we find that firms favor tax expense planning via PRE as opposed to real operations earnings management when firm litigation risk is highest (Huang et al. 2020) and when firm market share is lowest (Zang 2012). Together, these supplemental results corroborate our main findings, suggesting that firms with abnormal intensity of offshore internal input tradeoff between tax expense planning and real operations earnings management when the costs and benefits between the two vary with incentives and constraints.

Our study extends research in operations management that explores the impact of globalization on corporate-level foreign operations (Lawrence and Rosenblatt 1992; Ferdows 1997; Gray and Massimino 2014; Banker et al. 2021). More specifically, our study focuses on documenting the changes in MNCs' tax expense planning strategy stemming from foreign operations intensity. Hoberg and Moon (2017; 2019) use textual analysis to separate foreign operation activities into offshore output, offshore external input, and offshore internal input. Emerging tax studies using this text-based approach focus on the former two activities. For instance, Chen et al. (2024) focus on the relation of offshore output (i.e., sales) with cash tax avoidance, while Law and Mills (2022) use offshore external input (i.e., purchases) to capture tax haven activities. Our study exploits the latter activity—offshore internal input (i.e., manufacturing goods or providing services by owning relevant foreign assets)—broadening our understanding of the implication of foreign operations on MNC tax behavior. Accordingly, through documenting the positive association between offshore internal input and tax expense planning, we provide archival evidence that the intensity of foreign operations is a crucial factor for MNCs' tax expense planning strategy, alongside other

theoretically explored factors such as the tax system, market competition, transfer prices, cross-crediting, and location (Lai et al. 2021; Xu et al. 2018; Shunko et al. 2014; Xiao et al. 2015; Hsu et al. 2019).

We also contribute to the literature on corporate tax planning. Existing tax-expense earnings management research focuses on settings that carry ex-post risk of financial restatement via the manipulation of tax accruals (Dhaliwal et al. 2004; Frank and Rego 2006; Plumlee 2003; Thomas and Zhang 2014), settings that engage in aggressive tax avoidance strategies such as tax havens (Dyreng and Lindsey 2009; Law and Mills 2022), or settings that carry ex-post risk of value destruction such as asymmetric classification of tax expense (Kaplan et al. 2020). In contrast, our findings suggest that managers trade off earnings management through real operations with tax expense when *ex-ante* costs of tax expense planning are lower. As such, we highlight that earnings management via tax expense need not always be considered nefarious. In fact, the implementation cost constraint that we proffer adds to the tax under-sheltering puzzle (Hanlon and Heitzman 2010; Weisbach 2002).

Finally, this study contributes to interdisciplinary research in operations management and accounting by exploring how managers choose among multiple earnings management tools at their disposal. Prior research focuses on managerial choice between managing accruals versus real operating activities (Chan et al. 2015; Cohen et al. 2020; Cohen and Zarowin, 2010; Kothari et al. 2016; Zang 2012), suggesting that the decision is a function of the relative costs and benefits of these two earnings management tools. To our knowledge, we are the first to investigate whether firms trade off real operations earnings management with tax expense planning. Our results suggest that tax planning is a viable alternative earnings management tool, particularly when existing organizational structures allow firms—notably MNFs in our study—to engage in tax planning transactions and when managing real operating activities is unattractive.

2 Background and Hypothesis Development

2.1 Foreign Operations

Prior research has identified distinct firm characteristics and managerial determinants moderating the effect of foreign operations on firm-level real activities. For instance, Gray and Massimino (2014) find that language differences between a subsidiary and its parent relate to decreased compliance performance, whereas cultural congruence between the two relates to improved compliance performance. Han et al. (2013) document that an MNF's sales penetration into emerging markets is associated with fewer days of inventory supply and improved financial performance. Further, Jiang et al. (2018) find that U.S. firms with directors connected to firms domiciled in Caribbean tax havens exhibit greater tax avoidance than other U.S. firms, while Akamah et al. (2018) provide evidence that MNFs operating in tax havens aggregate their geographic disclosures in order to reduce transparency of tax avoidance so as to avoid criticism. Regulatory wise, Banker et al. (2021) find that MNFs operating in mandatory IFRS-adopting countries experience significant

increases in total factor productivity and labor productivity, suggesting that the improved information environment increases economic productivity and facilitates internal firm decisions.

However, researchers have struggled to quantify the *magnitude* of the impact of foreign operation (i.e., offshore business) activities due to a lack of detailed public disclosure. Recent work in the tax literature tries to circumvent this lack of transparency. For instance, Joshi et al. (2020) exploit a change in public reporting for European banks regarding summary financial measures on a country-by-country basis, finding limited evidence of widespread tax avoidance. Somewhat related, Olbert and De Simone (2022) exploit private country-by-country reporting to European tax authorities in a regression discontinuity design, finding that firms subject to such reporting adjust real operations to substantiate tax preferences. Even so, these studies are limited in scope; the former is difficult to generalize outside of financial institutions, while the latter relies on inferences due to the private nature of such reporting.

To circumvent data limitations, Hoberg and Moon (2017; 2019) use publicly-disclosed 10-K filings with the U.S. Securities and Exchange Commission (SEC) to devise novel, text-based measures of the extent to which U.S. firms are exposed to three types of foreign operation activities. The first is offshore output, related to selling goods in foreign markets. The second is offshore external input, related to purchasing goods and services from foreign vendors. The third is offshore internal input, related to direct foreign ownership of assets used to produce and manufacture goods and provide services. They note two interesting takeaways. First, selling output abroad is associated with higher stock returns, notably when output is sold to more central nations in the real trade network, whereas offshore input serves as a hedge. Second, firms often favor purchasing input from the same nations they sell output as an operational hedge.

2.2 Tax Planning

The term tax planning takes different forms and meanings within tax research. In their review of the management tax literature, Hanlon and Heitzman (2010) discuss tax avoidance as a continuum of tax planning strategies, benign at one end and illegal at the other. They use examples such as investments in tax-free municipal bonds to represent benign avoidance and tax evasion as illegal avoidance. Further, they discuss financial reporting requirements, such as changes in valuation allowances that, while impacting effective tax rates, are not tax avoidance. Implicit in their definitions is that tax planning both involves explicit undertakings of firms and is not mechanically related to accounting conservatism (e.g., valuation allowances).

Other studies are more direct in defining tax planning. Wilde and Wilson (2018) broadly view tax planning as arising from intentional efforts of firms to lower their tax burden. Per this view, tax avoidance is thus a subset or the outcome of tax planning (Dyrenge et al. 2008; Dyrenge et al. 2017). Schwab et al. (2022) differentiate *effective* tax planning from tax minimization via general tax avoidance. While tax minimization can lead to the lowest tax possible, it may do so at the cost of reduced after-tax profits via

other implicit taxes such as lower rates of return or implementation costs (Scholes and Wolfson 1992; Shackelford and Shevlin 2001; Hanlon and Heitzman 2010). It is this view—effective tax planning—that most closely relates to the potential tradeoff between tax expense planning and the relative costs of earnings management via real operations.

2.3 Foreign Operations and Tax Planning

Hoberg and Moon (2017; 2019) define firms that jointly purchase inputs and own producing assets as firms conducting offshore internal input activity. We focus on this activity, that of the highest intensity of foreign operations, noting that firms can freely control foreign income by steering sales, purchases, and manufacturing under offshore internal input activity. Indeed, Law and Mills (2022) corroborate that firms with the highest level of abnormal internal input activity have the most active subsidiaries. Using this offshore internal input, we propose that firms have an alternative earnings management tool available to them that has been unexplored in prior studies. Namely, firms may substitute away earnings management through real operations when abnormal offshore internal input activities are present by engaging in previously unexploited tax expense planning activities (Andrews et al. 2023).

Since we investigate earnings management via the tradeoff between real operations and taxes, we are interested in tax expense planning that most closely aligns with the intuition of Schwab et al. (2022). That is, we are not necessarily interested in tax minimization with tax avoidance, but rather previously unutilized tax planning opportunities that could conceivably substitute for management of after-tax earnings via real operations. Thus, we do not focus on the manipulation or management of tax accruals, because the payoff to accruals-based earnings management is uncertain in the increase to financial restatement risk (Jones et al. 2008). Further, we are only interested in permanent book-tax differences, since tax expense can only impact earnings if there are permanent differences between financial accounting and tax law. Intuitively, these differences must be unencumbered by reporting reserves such as valuation allowances, since these are financial reporting constructs unrelated to tax planning (Hanlon and Heitzman 2010).

To illustrate such a tax expense planning activity, consider the treatment of foreign earnings from active foreign operations (i.e., offshore internal input) generated by a MNF domiciled in the United States. Prior to the 2017 Tax Cuts and Jobs Act, U.S. corporations were taxed on their worldwide income, net of allowable foreign tax credits related to income taxes incurred in foreign jurisdictions (Liu and Hsueh, 1993). However, given higher corporate income tax rates in the U.S., any residual income tax owed to the U.S. did not have to be paid until such foreign earnings were repatriated to the U.S. parent. Consequently, a U.S. MNF could generate current cash tax savings by simply keeping foreign profits overseas. Foreign profits alone could not lower tax expense on the income statement, however. From a financial accounting standpoint under U.S. GAAP, the firm had to designate the unremitted earnings from foreign subsidiaries

as permanently reinvested to avoid recognition of a deferred tax liability on such foreign earnings.⁵ This financial accounting choice—to designate or not—is the tax expense planning opportunity we refer to.

Thus, in this pre-TCJA world, a U.S. MNF had three options related to foreign profits from offshore internal input. The MNF could repatriate the foreign profits and pay residual U.S. income tax concurrently, leading to immediate cash outflow of tax paid and reduced net income via recognition of current tax expense. Alternatively, the MNF could delay repatriation of earnings while intending to do so eventually, saving cash now via delaying taxes paid but concurrently reducing net income via recognition of deferred tax expense. Finally, the MNF could designate the unremitted foreign earnings as PRE, saving cash while simultaneously avoiding a decrease to net income.

While the latter designation might seem like a win-win scenario, since a MNF designating unremitted foreign earnings as PRE would both retain cash without reducing net income, it was not a costless accounting choice. Thus, there is no a priori reason to believe that a given U.S. MNF would make a PRE designation. Aside from mundane compliance costs (Benzarti 2015; Dharmapala and Riedel 2013; Graham et al. 2014), designating foreign earnings as PRE altered cash flows by requiring firms to hold cash abroad (Foley et al. 2007), since a U.S. MNF could not repatriate the foreign cash related to foreign earnings into the U.S. without triggering both immediate taxation and recognition of income tax expense. Thus, cash tax savings from delaying repatriation could be lower than potential domestic returns on the actual foreign cash unavailable for use domestically, that is, tax minimization at the expense of efficient tax planning. Further, a MNF could not even suggest that it *might* repatriate cash related to PRE; such a hypothetical claim violates the intuition of indefinite non-remittance of foreign earnings and would potentially lead to recognition of deferred tax expense on all prior PRE.

Elaborating on the above discussion, Appendix 1 details the PRE disclosure of the four largest U.S. firms, by market capitalization, in their 2016 fiscal year end SEC Form 10-K annual report.⁶ While the disclosures vary, each discusses the *undistributed earnings* from foreign operations, a reference to the aggregate amount of income earned outside the U.S. that the firm intends to *permanently* or *indefinitely reinvest* in any foreign jurisdiction. Further, except for Apple Inc., none of the other MNFs attempt to compute the U.S. tax liability that would be owed if the permanently reinvested earnings were to be repatriated to the U.S.

⁵ The outcome would be similar for a firm operating under IFRS in a jurisdiction with a worldwide taxation regime. Per IAS 12, no deferred tax expense is required to be recognized if both the timing of remitting foreign earnings can be controlled by the parent and it is probable that the foreign earnings will not be remitted in the foreseeable future.

⁶ Market capitalization was provided from the Fortune 500 listing: <https://fortune.com/fortune500/2016/>. Fiscal year ending was chosen as it was the last calendar year before enactment of the TCJA.

These disclosures captured in Appendix 1 highlight two important points related to our study. The first is the tradeoff firms made when designating unremitted foreign earnings as PRE. Take Berkshire Hathaway Inc. as a point of reference. The tradeoff between “We have *not established deferred income taxes* on accumulated undistributed earnings of certain foreign subsidiaries” against “*Upon distribution* as dividends or otherwise, such amounts *would be subject to taxation* in the U.S.” highlights the cash flow constraint of requiring PRE to remain outside the U.S. in order to utilize the tax expense planning opportunity. The second point relates to accruals. Some might argue that PRE was an accrual, or perhaps an anti-accrual if such a thing exists, since it was related to the avoidance of recording deferred tax liabilities. However, the disclosures suggest that PRE was not an accrual in the traditional sense since it did not attempt to match the financial effect in the period occurred (FASB, 2021), due to the indefinite nature of such earnings. For instance, Wal-Mart Stores Inc. did not attempt a computation of what an accrual might look like, due to the *hypothetical* nature of such an exercise. Likewise, Berkshire Hathaway Inc. avoided such an unnecessary calculation because an eventual repatriation would be *impracticable* given capital needs to fund overseas operations. Thus, U.S. MNFs making a PRE designation did not need to consider what future taxes might be on such earnings, since there was no intention to ever repatriate the foreign earnings.

Collectively, our intuition is that abnormal amounts of offshore internal input encouraged managers to designate a greater portion of unremitted foreign earnings as PRE. All else equal, the marginal cost related to keeping a dollar of cash overseas is decreasing in the total amount of earnings from offshore internal input available to designate as PRE. Further, economies of scale from greater offshore internal input should reduce the marginal cost related to a previously unexploited dollar of tax planning opportunity. As such, we formulate our first hypothesis as follows:

Hypothesis 1: Tax expense planning via permanently reinvested earnings is positively related to abnormal offshore internal input.

To be sure, we are not the first study to investigate earnings management and PRE. In a foundational study, Krull (2004) provided evidence that firms used PRE to manage earnings under analyst pressure, but not to smooth earnings. Mathis (2020), using a different methodology established by Gupta et al. (2016), suggests that earnings management via PRE only happened in a limited subset of firms with the greatest ability to manage earnings via scale of foreign earnings. The nuance is attributable to data; PRE was estimated in both studies, since a database collecting PRE disclosures was only recently established.

We are somewhat agnostic to whether PRE was used to manage earnings. While Krull (2004) suggests that firms used PRE to meet analyst targets, she did not find evidence that such PRE was eventually repatriated absent analyst pressure in the future. Put another way, firms did not appear to treat PRE as a *temporary* accrual, per se, and were subject to the stringent investment rules surrounding repatriation once

designated. As such, even if PRE was used to manage earnings, such unremitted foreign earnings were deemed to be indefinitely reinvested and thus treated as a *permanent* book-tax difference, consistent with our view of tax expense planning.

2.4 Tradeoff of Real Operations Earnings Management for Tax Planning

Following our first hypothesis, it is an empirical question whether firms substitute earnings management by altering real operating activities for earnings management with tax expense planning such as PRE. Prior research documents that firms are willing to change real operating activities to manage earnings (Graham et al. 2005). Roychowdhury (2006) notes firms offering discounts, overproducing inventory, and reducing discretionary expenses such as R&D and advertising as examples of suboptimal real operating activities manipulation that increase current period earnings via increased sales, reduced cost of sales, or reduced operating expenses, respectively. It is suggested that such real operating activities management is detrimental to firms. For instance, Cohen and Zarowin (2010) document that firms manipulating real activities in the year of a seasoned equity offering face declining future performance. Kim and Sohn (2013) note that altering real operating activities to manage earnings impairs the information quality of such earnings, resulting in an increased cost of capital.

Further research documents that firms substitute or trade off real operations earnings management and accruals earnings management. For instance, Cohen et al. (2008) look at this substitution around enactment of the Sarbanes-Oxley Act of 2002. They provide evidence that firms substituted accrual-based earnings management with real operations earnings management post-enactment, when the cost of engaging in accruals manipulation became costlier due to increased scrutiny of public financial statements. Of particular note to our setting is Zang (2012). She documents that firms trade-off between real operations earnings management and accruals-based earnings management, depending on the circumstance. Further, she notes that firms adjust accruals-based earnings management after incorporating realizations from real operations earnings management, suggesting that firms manage both in tandem.

Given the above, it follows that firms might trade-off real operations earnings management in favor of earnings management via tax expense planning. Indeed, prior research documents that firms manage earnings via manipulation of tax accruals (Dhaliwal et al. 2004; Frank and Rego 2006; Plumlee 2003; Thomas and Zhang 2014), via engaging in tax-preferred real activities management (Robinson 2010), and via the classification shifting of tax expense within the income statement (Kaplan et al. 2020). However, the potential trade-off between tax expense planning and other forms of earnings management such as altering real operating activities is undocumented.

Our setting is an attractive setting to test for a trade-off between real operations earnings management and tax expense planning for three reasons. First, the financial accounting benefit from a PRE designation could only be recognized for firms with offshore internal input, allowing us to isolate a set of

firms that collectively faced the same tax expense planning decision. Second, the international expansion of a business endeavor necessarily provides the opportunity to engage in previously unavailable tax planning opportunities in general. Third, a PRE designation provides a noncostless tax expense planning setting that does not necessarily increase financial statement risk. The setting not only incurs costs from a cash flow perspective, but from the necessary documentation to ensure the transfer pricing arrangements do not increase risk of misstatement. This is not a trivial requirement. Towery (2017) notes that transfer pricing issues are one of the most contentious areas of dispute with the tax authority. Thus, firms have to invest a significant amount of time and money to ensure that transfer pricing agreements survive regulatory scrutiny. This is consistent with our argument that any new tax planning transactions firms engage in must be costly, otherwise they would have already been utilized. In the aggregate, however, this latter cost is decreasing in scale of foreign operation intensity. As such, we formulate our second hypothesis as follows:

Hypothesis 2: Real operations earnings management is negatively related to tax expense planning via permanently reinvested earnings in the presence of abnormal offshore internal input.

3 Data

3.1 Sample Selection

Our sample consists of 1,192 multinational firms incorporated in the United States and 5,298 firm-year observations from 2007 through 2017 that have tax footnote data related to the amount of permanently reinvested earnings available from the Audit Analytics database. We focus on U.S. incorporated firms because only these firms were subject to U.S. income tax on worldwide income, for which a PRE tax expense planning opportunity was applicable. We begin the sample in 2007 because tax footnote data in Audit Analytics starts from that year. We end the sample in 2017 because the financial statement benefit from a PRE designation disappeared after enactment of the TCJA. Additionally, we exclude firms from financial industries (SIC codes between 6000 and 6999), require firms to have financial accounting information available from Compustat, compensation data from Execucomp and IncentiveLAB, institutional ownership data from Thomson Reuters, and foreign operation data from the Hoberg-Moon Offshoring Repository.⁷

3.2 Variable Definitions

Variable definitions and calculations are provided in Appendix 2. We summarize below the important highlights of the variables used in our analyses.

⁷ We thank Gerald Hoberg and Katie Moon for kindly sharing the database. The data can be retrieved from <http://faculty.marshall.usc.edu/Gerard-Hoberg/HobergMoonDataSite/index.html>.

3.2.1 Dependent Variables – Tax Expense Planning and Real Operations Earnings Management

In order for a manager to substitute tax expense planning for earnings management via real operations, this planning must reduce tax expense. Accordingly, we operationalize tax expense planning that does not enhance the risk of financial restatement as designating a higher percentage of their earnings as PRE. Most 10-K filings only report aggregate earnings across time that remain permanently reinvested overseas, and indeed Audit Analytics only captures the total lifetime PRE outstanding. Since we are interested in contemporaneous tax planning, we compute the current amount of earnings that are designated as PRE by taking the change in aggregate PRE from t-1 to t, scaled by total assets (ΔPRE).

We operationalize earnings management through real operating activities (*ROEM*) following prior studies (Roychowdhury 2006; Zang 2012; Wu 2019; Lev et al. 2021; Wu and Lai 2022; Liang et al. 2023), which is the sum of the abnormal portion (i.e., residual) of production costs and the abnormal portion (i.e., residual) of discretionary expenses.⁸ Production costs are defined as the sum of cost of goods sold and change in inventory during the period, while discretionary expenses are defined as the sum of research and development, advertising, and selling, general, and administrative expenses.⁹ This measure of real operations earnings management computes the abnormal amounts in relation to assets and sales. The larger the coefficient on *ROEM* is, the more the firm is managing earnings through real operating activities, and vice versa.

3.2.2 Variable of Interest – Foreign Operations (i.e., Offshore) Activities

Our main variables of interest, foreign operations (i.e., offshore) activities, are retrieved from the Hoberg-Moon Offshoring Repository. Offshore output (*Output*) is defined as the natural log of (1 + *Offshore_OUTPUT*), where *Offshore_OUTPUT* is measured as the number of mentions of the firm selling goods to the given country in 10-K filings. Offshore input (*Input*) is defined as the natural log of (1 + *Offshore_INPUT*), where *Offshore_INPUT* is measured as the number of mentions of the firm purchasing inputs from the given nation in 10-K filings. *Offshore_INPUT* can be split into *External_Offshore_Input*, *Internal_Offshore_Input*, and *Unknown_Offshore_Input*. *External_Offshore_Input* is the number of mentions of the firm purchasing inputs from the given nation in 10-K filings when the firm does not mention

⁸ Since managing earnings through real operating activities would indicate a reduction of discretionary expenditures from operations, we multiply -1 to the residual of discretionary expenses to make the direction consistent with the production cost following prior studies (Roychowdhury 2006; Zang 2012; Wu and Lai 2022).

⁹ The corresponding equations can be expressed as following:

$$PROD_{i,t} / A_{i,t-1} = (COGS_{i,t} + \Delta INV_{i,t}) / A_{i,t-1} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \beta_1(S_{i,t}/A_{i,t-1}) + \beta_2(\Delta S_{i,t}/A_{i,t-1}) + \beta_3(\Delta S_{i,t-1}/A_{i,t-1}) + \varepsilon_{i,t}$$
$$\text{and } DISEXP_{i,t} / A_{i,t-1} = (ADV_{i,t} + R\&D_{i,t} + SG\&A_{i,t}) / A_{i,t-1} = \delta_0 + \delta_1(1/A_{i,t-1}) + \Pi(S_{i,t-1}/A_{i,t-1}) + \varepsilon_{i,t},$$

where the sum of the residuals from the two equations equals real operations earnings management (*ROEM*). A_t and INV_t are the total assets and the inventory balance at the end of period t. S_t , $PROD_t$, $COGS_t$, $DISEXP_t$, ADV_t , $R\&D_t$, $SG\&A_t$ are the sales, production costs, costs of goods sold, discretionary expenses, advertising expenses, R&D expenses, and SG&A expenses during period t, respectively.

owning assets (e.g., factories; facilities for production) in the given country. *Internal_Offshore_Input* is the number of mentions of the firm purchasing inputs from the given nation in 10-K filings when the firm mentions owning assets in the given country. *Unknown_Offshore_Input* is the number of input words that are not explicitly identified as either *External_Offshore_Input* or *Internal_Offshore_Input* since the subject of the sentence is not clear. The full list of words related to each activity from Hoberg and Moon (2017; 2019) are detailed in Appendix 2.

Following Hoberg and Moon (2019), we take an additional step using these variables to ensure that our multivariate models containing the offshore activities are not impaired by multicollinearity, since more than 80 percent of offshoring firms in our sample have both output and input in the same country. Accordingly, we first take the residual of $Input = f(Output)$ and set it as abnormal offshore input (*Abn_Input*). In addition, to distinguish between the two types of abnormal offshore input activities, we take the residuals of $Ext_Input = f[Output, Input]$ and $Int_Input = f[Output, Input]$, and define as abnormal offshore external input (*Abn_Ext_Input*) and abnormal offshore internal input (*Abn_Int_Input*), respectively (Hoberg and Moon, 2019).¹⁰ After this recommended standard stepwise procedure, all offshoring variables are uncorrelated by construction, allowing us to assess the impact of all offshoring activities by the given firms.

3.2.3 Control Variables

We include several firm characteristic variables when engaging in multivariate analyses, to control for the impact said characteristics may have on both the use of tax expense planning and foreign operations (i.e., offshore) activities. These characteristics include firm size (*Size*), market-to-book ratio (*MTB*), leverage (*LEV*), cash flow from operations (*OCF*), profitability (*ROA*), cash holdings (*Cash*), whether the firm engaged a Big 4 auditor (*BIG4*), discretionary accruals (*DACC*), and amount of non-audit fees paid to the auditor (*NAS*). Finally, we include firm indicators and year indicators to control for time invariant firm characteristics and year fixed effects. All continuous control variables are winsorized at 1 percent and 99 percent.

3.3 Descriptive Statistics

The first two columns in Table 1 presents univariate statistics for the measures used in testing our hypotheses. The average firm-year observation has a market value of approximately 1.75 billion U.S. dollars. Likewise, the vast majority of firms engage a Big Four auditor for their audit and utilize their auditor for other non-audit related services. The pairwise correlations among our main variables of interest are

¹⁰ In sum, the corresponding equations can be expressed as following:

$$\begin{aligned} \ln(1 + Offshore_INPUT_{i,t}) &= \alpha_0 + \alpha_1 \ln(1 + Offshore_OUTPUT_{i,t}) + \varepsilon_{i,t}, \\ \ln(1 + Internal_Offshore_Input_{i,t}) &= \delta_0 + \delta_1 \ln(1 + Offshore_OUTPUT_{i,t}) + \delta_2 \ln(1 + Offshore_INPUT_{i,t}) + \varepsilon_{i,t}, \text{ and} \\ \ln(1 + External_Offshore_Input_{i,t}) &= \Pi_0 + \Pi_1 \ln(1 + Offshore_OUTPUT_{i,t}) + \Pi_2 \ln(1 + Offshore_INPUT_{i,t}) + \varepsilon_{i,t}, \end{aligned}$$

where the residual from each equation equals to the abnormal offshore input (*Abn_Input*), abnormal offshore internal input (*Abn_Int_Input*), and abnormal offshore external input (*Abn_Ext_Input*), respectively.

reported in the remaining columns in Table 1. Intuitively, the aggregate foreign operations (i.e., offshoring) measures are correlated. For instance, the 0.55 correlation between *Output* and *Input* suggests that firms selling goods in foreign markets are likely acquiring inputs and operating facilities in foreign markets as well. However, the magnitude of these correlations decreases the more we disaggregate the measures. Consider *Input*; it has a 0.93 correlation with *Int_Input*, 0.74 correlation with *Abn_Input*, and -0.07 correlation with *Abn_Int_Input*. Further, there does not appear to be any remarkable correlations between our main variable of interest *Abn_Int_Input* and our main dependent variables ΔPRE and *ROEM*, suggesting that the construction of our abnormal foreign operations (i.e., offshoring) measure is not related in a meaningful way with the test variables.

[insert Table 1 about here]

Table 2 presents the country-by-country data breaking out the intensity of foreign operations (i.e., offshoring activity) in our sample. The table depicts the top 20 countries, for brevity, at the beginning of our sample in 2007 and at the end of the sample in 2017, for total offshore internal input and separately for the abnormal amounts.¹¹ The objectively large amounts of total offshore internal input for Canada and China, compared to the remaining top countries, is highlighted in this breakout. Further, Table 2 details obvious differences between the total amount of offshore internal input with culturally-similar countries to the U.S. compared to abnormal amounts with several East Asian countries. Interestingly, we see a decline in the magnitudes of total offshore internal input for most of the depicted countries. However, the decline in the abnormal activity appears to be much less extreme. While noting some decline in offshore internal input across time, we do not observe a general difference in the ranking of the top countries in the sample.

[insert Table 2 about here]

4 Primary Results

4.1 Relation Between Abnormal Offshore Internal Input and Permanently Reinvested Earnings

We examine Hypothesis 1, whether abnormal offshore internal input activities are associated with greater corporate tax expense planning, by using the following multivariate model in Equation (1):

$$\begin{aligned} \Delta PRE_{it} = & \alpha + \beta_1 Abn_Int_Input_{it} + \beta_2 Size_{it} + \beta_3 MTB_{it} + \beta_4 LEV_{it} + \beta_5 OCF_{it} + \beta_6 Cash_{it} \\ & + \beta_7 Big4_{it} + \beta_8 ROA_{it} + \beta_9 DACC_{it} + \beta_{10} NAS_{it} + \gamma Z_i + \eta V_t + \varepsilon_{it}. \end{aligned} \quad (1)$$

Z and V denote firm and year indicators, respectively. We include firm fixed effects in all of our regressions to hold constant any omitted firm-level factor that is unchanging across time. Thus, in order for an omitted variable to affect our results, it must be the case that changes in any such variable are associated with time-series variation in both our independent variable and dependent variable, which we view as unlikely. We

¹¹ A visualized version of Table 2 depicting country-by-country maps breaking out the intensity of foreign operations (i.e., offshoring activity) in our sample is shown in Appendix 3.

cluster standard errors at the firm level in our OLS regressions to control for residual dependence. Table 3 presents our results. As hypothesized, the coefficient on *Abn_Int_Input* is positive and statistically significant across all three specifications of Equation (1), consistent with abnormal offshore internal input inducing firms to invest more in tax expense planning through permanently reinvested earnings. Focusing on column 3, which includes all control variables, the results suggest that an increase from the 25th percentile to the 75th percentile of abnormal offshore internal input results in a 49.06 percent increase in current PRE.¹²

[insert Table 3 about here]

4.2 Tradeoff Between Real Operations Earnings Management and Permanently Reinvested Earnings

While we find support for Hypothesis 1, the previous findings do not provide direct evidence that abnormal offshore internal input encourages managers to substitute real operations earnings management with tax expense planning. To test Hypothesis 2, that managers trade away real operations earnings management in favor of tax expense planning, we use the multivariate model in Equation (2) following the primary methodology used in Chan et al. (2015):

$$\begin{aligned} ROEM_{it} = & \alpha + \beta_1 Abn_Int_Input_{it} + \beta_2 Abn_Int_Input * \Delta PRE_{it} + \beta_3 \Delta PRE_{it} + \beta_4 Size_{it} + \beta_5 MTB_{it} \\ & + \beta_6 LEV_{it} + \beta_7 OCF_{it} + \beta_8 Cash_{it} + \beta_9 BIG4_{it} + \beta_{10} ROA_{it} + \beta_{11} DACC_{it} + \beta_{12} NAS_{it} \\ & + \gamma Z_i + \eta V_t + \varepsilon_{it}. \end{aligned} \quad (2)$$

A negative coefficient on the interaction term *Abn_Int_Input* * ΔPRE would indicate that tax expense planning through permanently reinvested earnings in the presence of abnormal offshore internal input substitutes for real operations earnings management. Table 4 presents the result of this tradeoff analysis. The coefficient on the interaction term *Abn_Int_Input* * ΔPRE is negative and significant across all three specifications of Equation (2), consistent with firms with abnormal offshore internal input activities substituting real operations earnings management with tax expense planning.

[insert Table 4 about here]

4.3 Robustness Tests

4.3.1 Exogenous Shock to Tax Expense Planning

To further validate our main results, we utilize the elimination of worldwide corporate income taxation in the United States with the enactment of the Tax Cuts and Jobs Act of 2017 as an exogenous shock to our setting. The TCJA made a PRE designation ineffective from an earnings management perspective, and thus we investigate whether the level of real operations earnings management increased

¹² Following Atwood et al. (2012), the percent increase in current PRE from moving from the 25th percentile to the 75th percentile is calculated as follows: $[0.404 \text{ (the difference between } Abn_Int_Input \text{ at P75 and } Abn_Int_Input \text{ at P25)} \times 0.017 \text{ (the coefficient on } Abn_Int_Input \text{ per Table 3, Column 3)}] \div 0.014 \text{ (mean } PRE \text{ per Table 1)} = 49.06 \text{ percent}$. The distribution of *PRE* and the third decimal point for mean *PRE* are untabulated in Table 1 for the sake of brevity.

when tax expense planning via PRE became unviable. Setting 2017 as the focal year, we identify 94 firms that fell in the highest tercile distribution of both ΔPRE and Abn_Int_Input in 2017 (i.e., category A firms in Figure 1), firms that most likely relied on PRE to manage earnings before the TCJA. Then, we examine whether there is a change in the average level of real operations earnings management between pre-TCJA across 2015 and 2016 and post-TCJA across 2018 and 2019. Results shown in Figure 1 indicate that these firms significantly increase the level of *ROEM* after TCJA enactment (0.088, $p = 0.002$), when tax expense planning via PRE is unavailable. In contrast, we do not observe any significant change in the level of *ROEM* for firms that fell in the highest tercile of Abn_Int_Input but lowest tercile of ΔPRE (i.e., category B firms in Figure 1), firms that could have engaged in tax expense planning via PRE given Hypthosis 1 but opted not to. Further, the test of difference between category A and category B firms is statistically significant (0.074, $p = 0.03$). Collectively, the results are consistent with our expectation that firms that heavily relied on tax expense planning via PRE to manage earnings subsequently switched to real operations earnings management after 2017, after the ability to manage earnings through tax expense planning via PRE was eliminated.

[insert Figure 1 about here]

4.3.2 Falsification Test

Our theory infers that managers are incentivized to increase tax expense planning, operationalized with permanently reinvested earnings, to manage earnings when they have full control over the production function via abnormal offshore internal input (Law and Mills 2022). In Table 5, we conduct a placebo test regarding whether our main associations are null when using other types of offshore activities that are not directly related to PRE tax expense planning. We do so by modifying Equations (1) and (2) by replacing Abn_Int_Input with other types of offshoring defined by Hoberg and Moon (2017; 2019). The insignificant coefficients on *Output*, Abn_Ext_Input , and Abn_Input in columns 1, 3, and 5 validate this null expectation. Engaging in offshore manufacturing activities through the ownership of production assets, separate from selling items and purchasing input, is crucial for managers to increase tax expense planning in our setting. Further, results previously presented in Table 4 suggest that firms with abnormal amounts of offshore internal input trade away real operations earnings management in favor of tax expense planning via PRE. Yet, we do not find the same result with *Output*, Abn_Ext_Input , and Abn_Input in columns 2, 4, and 6. The result in columns 4 is null, and the results in columns 2 and 6 are in fact positively related to *ROEM*.

[insert Table 5 about here]

5 Additional Analyses

5.1 When Tax Expense Planning Is Most Desperate

We next examine settings where our tax expense planning results are likely to be strongest. We start with analyzing a setting where management needs to meet earnings targets. Managers are more likely to take advantage of cost effective earnings management through reducing tax expenses if they are in a situation where they need to desperately increase earnings. We use a subsample of firms who just meet or beat the median analyst forecast within \$0.01 following Kaplan et al. (2020) as a setting where managers are especially desperate. Managers in firms that actively conduct abnormal offshore internal input should be most incentivized to exploit PRE to boost earnings if they were to miss the earnings targets absent earnings management. To operationalize this notion of desperation, we use *Miss_Amount*, the median analyst forecast less earnings absent tax expense management (Cook et al. 2008; Dhaliwal et al. 2004), and interact it with *Abn_Int_Input*. We then test whether our primary results are more pronounced when managers are pressured to meet the annual earnings target.

Results shown in column 1 of Table 6, Panel A support our prediction. The positive and significant coefficient on the interaction term *Abn_Int_Input * Miss_Amount* (0.040; p-value = 0.082) indicates that managers utilize abnormal offshore internal input to increase PRE to a greater extent in order to meet or beat the earnings target. Further, we don't observe a significant change in real operations earnings management for these firms in column 2. This is intuitive, since the subset of firms struggling to meet an earnings target is unlikely to be able to reduce any form of earnings management in the immediate term.

Next, we examine whether managers' desperation to manage earnings is driven by incentives related to their compensation and performance evaluation. In other words, we examine whether our results are driven by managers that are evaluated on after-tax earnings rather than pre-tax earnings. We do this by utilizing information from the IncentiveLab database related to performance metrics included in managers' annual incentive plans. We incorporate this information in Panel B of Table 6. We include only the subset of firms that compensate management based on after-tax earnings, and interact the level of performance compensation (*Performance_Pay*) with our variables of interest in Equations (1) and (2). Referring to column 1 specifically, we find the propensity to engage in tax expense planning in the presence of abnormal offshore internal input increases in the magnitude of after-tax managerial compensation.

[insert Table 6 about here]

5.2 When Tax Expense Planning Is Most Costly

Even if firms with high levels of abnormal offshore internal input activity are willing to manage earnings by decreasing tax expense, there are circumstances where tax expense planning is costly. If the cost of managing tax expense outweighs the benefit, managers are less incentivized to choose tax expense planning as their main earnings management tool. In this light, we identify settings where tax expense

planning via PRE is likely to be too costly to engage in. We start with firms that are cash constrained domestically with high amounts of foreign cash trapped abroad. As a reminder, a PRE designation required U.S. MNFs to keep their PRE-designated foreign earnings overseas, hence the name permanently reinvested. A U.S. MNF needing cash domestically had one of two options: take out additional debt and pay interest or repatriate foreign earning and recognize income tax expense and cash tax payments. Such a firm with large amounts of aggregate unremitted foreign earnings is less incentivized to designate additional foreign earnings as PRE, because this designation would not allow them to domestically utilize the cash from such foreign earnings.

We manually collect the additional information related to the location of cash through searching 10-K filings. We define *Trapped* as an indicator variable equals to one if the percent of domestic cash to total assets is within the bottom tercile while the percent of foreign cash to total asset is simultaneously within the top tercile, and 0 otherwise. This variable captures firms with extreme amounts of cash held outside the U.S. at the expense of low cash domestically. We interact *Trapped* with *Abn_Int_Input* and predict that firms are less likely to designate their current foreign earnings as PRE if they are short of domestic cash.

Table 7, Panel A displays the results of this test which examines how domestic cash constraints impacts both tax expense planning via the current amount of permanently reinvested earnings (ΔPRE) and real operations earnings management (*ROEM*) in the presence of abnormal offshore internal input (*Abn_Int_Input*). Column 1 enhances Equation (1) by interacting an indicator if the firm-year had foreign cash trapped overseas (*TRAPPED*) with the variable of interest *Abn_Int_Input*. Column 2 enhances Equation (2) by interacting *TRAPPED* with the variable of interest *Abn_Int_Input* and $-1 * \Delta PRE$ ($-\Delta PRE$). As it relates to Hypothesis 1, the negative and significant coefficient on the interaction term (-0.094; p-value = 0.063) in column 1 implies that our tax expense planning result is muted when firms are domestically cash constrained with cash trapped overseas. Further examining the result which relates to Hypothesis 2, the subset of firms that are cash constrained with cash trapped overseas appears to instead use real operations activities to manage earnings, as shown by the significant three-way interaction (10.872; p-value = 0.081) in column 2.

Next, we examine whether our primary results are less pronounced when firms are under IRS attention through the voluntary Compliance Assurance Process, or CAP. The CAP is a voluntary program that large corporate taxpayers can opt into and work directly with the IRS in real time to resolve compliance issues prior to the filing of the corporate tax return. As such, the IRS is intimately monitoring such firms.¹³ To identify firms under the CAP program, we use manually collected data that contains current, prior, and

¹³ As prior studies document that intensive IRS monitoring shapes corporate policies and managerial actions (El Ghoul et al. 2011; Guedhami and Pittman 2008), we posit that firms under voluntary CAP would find managing earnings through decreasing their tax expense costly than firms that are not associated with CAP.

future IRS audits as well as any related appeals and litigation with the IRS in 10-K filings and related tax footnote.¹⁴ We define an indicator variable *CAP* that equals one if the firm is under the CAP program and interact it with our variable of interest *Abn_Int_Input*. As shown in the column 1 of Table 7, Panel B, which modifies Equation (1), firms are less likely to choose tax expense planning via PRE as their earnings management tool when they are under the CAP program. In comparison, when modifying Equation (2) in column 2 to incorporate CAP, we find that this set of firms, less incentivized to use tax planning via PRE, indeed do not significantly decrease the level of real operations earnings management as a tradeoff.

[insert Table 7 about here]

5.3 When Real Operations Earnings Management Is Most Costly

There are also situations where engaging in real operations earnings management is most costly, and management is likely to avoid using real operations earnings management if other earnings management tools are available. We analyze two such settings as follows. First, we follow Huang et al. (2020) in noting that the level of real operations earnings management relates to a firm's exposure to litigation risk. We thus expect that our results are more pronounced for firms in litigious industries. To analyze this, we augment our analyses by bifurcating our sample into firms in litigious industries (*LitRisk* = 1) and those that are not (*LitRisk* = 0). The results of these analyses are provided in Panel A of Table 8.

We do not find much of a difference between columns 1 and 2, where Equation (1) is used in this litigation bifurcation. A chi-squared analysis for the variable of interest *Abn_Int_Input* is only marginally different in favor of litigious industries if using a two-tailed test. We interpret this as evidence that litigation risk does not deter the use of our tax planning strategy. However, litigation risk appears to play a role in the propensity to shift away from real operations earnings management in favor of PRE in the presence of abnormal offshoring activities. We find support for this, consistent with our previous results, in column 3 only, the subset of firms in litigious industries. We do not find support that firms shift away from real operations earnings management in favor of tax expense planning when there is little risk of litigation. This latter result is intuitive; we would not expect firms to avoid this earnings management technique if there was little risk in doing so.

Next, we examine whether market competition plays a role in our results. Zang (2012) finds that real operations earnings management is most costly when firms suffer from product market competition via low market share. Panel B of Table 8 provides results of this additional test, where we partition our sample based on firms in the highest and lowest decile of market share. We find weak support that the share of market sales plays a role firms' decisions to shift away from real operations earnings management in favor

¹⁴ We thank Allison Kays at Emory University for sharing her CAP data. The data covers years 2008 to 2014. Given the fact that the data covers mostly the Russell 1,000 firms, only around 300 firm-year observations disclosed CAP information in our sample of firms.

of tax expense planning via PRE. The coefficient on the interaction of $Abn_Int_Input * \Delta PRE$ in column 3, where market share is low, is negative and statistically significant (-0.854; p-value < 0.01). Conversely, the corresponding coefficient in column 4, the subsample where market share is highest, is statistically insignificant. The difference among the coefficients, however, does not appear to be statistically different when using a chi-squared test.

[insert Table 8 about here]

To further corroborate our primary result for Hypothesis 1, we next verify whether firms indeed manage earnings by reducing tax expense through PRE when they actively conduct abnormal offshore internal input activities. We use the following Equation (3) to test this:

$$\begin{aligned} GETR_{it} = & \alpha + \beta_1 Abn_Int_Input_{it} + \beta_2 Abn_Int_Input_{it} * \Delta PRE_{it} + \beta_3 \Delta PRE_{it} + \beta_4 Size_{it} + \beta_5 MTB_{it} \\ & + \beta_6 LEV_{it} + \beta_7 OCF_{it} + \beta_8 Cash_{it} + \beta_9 BIG4_{it} + \beta_{10} ROA_{it} + \beta_{11} DACC_{it} + \beta_{12} NAS_{it} \\ & + \gamma Z_i + \eta V_t + \varepsilon_{it}. \end{aligned} \quad (3)$$

$GETR$ is the effective tax rate under U.S. GAAP. A negative and significant coefficient on the interaction term $Abn_Int_Input * \Delta PRE$ would indicate that the impact of increasing PRE in the presence of greater abnormal offshore internal input leads to an overall reduction in tax expense. While this might seem mechanical, since PRE is a permanent book-tax difference directly reducing tax expense, it is possible that firms offset the benefit from increasing PRE by reducing or being unable to engage in tax expense planning elsewhere. However, the results of Equation (3) presented in Table 9 confirm our expectation.

Columns 1 and 3 include only firm-years in the highest decile of ΔPRE , while columns 2 and 4 include only observations in the lowest decile. We focus on columns 3 and 4, which include the full set of control variables. The negative and significant coefficient on Abn_Int_Input in column 3 (-0.399; p-value = 0.061) indicates that the group of firms under analysis indeed manage earnings by decreasing their overall tax expenses. We find no such result in column 4, the subset of firms not currently utilizing PRE. A chi-squared test of difference is significant, suggesting these two subsets are indeed different.

[insert Table 9 about here]

6 Conclusion

Motivated by the growing trend of corporate foreign operations (i.e., offshoring activities) spurred by globalization, we contribute to the literature in operations management and accounting by investigating whether the intensity of foreign operations encourage firms to substitute other costly earnings management strategies with tax expense planning. Using a sample of U.S. multinational firms conducting offshore activities between 2007 and 2017, we find that firms with abnormal amounts of offshore internal input—for example, abnormal levels of direct asset ownership of foreign subsidiaries and foreign manufacturing facilities—designate a larger percentage of earnings as permanently reinvested in order to

boost their earnings. We further find that firms trade away the manipulation of real operating activities, a costly method of earnings management, in favor of this tax planning earnings management strategy. In particular, tax planning transactions are more attractive for firms with abnormal offshore internal input when they need to desperately increase earnings and when real operations earnings management is costly, but less attractive when the cost of tax expense planning is high.

Collectively, our findings support the notion that firms use tax expense planning as a viable alternative earnings management tool, particularly when managing earnings through real operating activities is unattractive, and existing organizational structures in terms of foreign operations allow firms to execute tax expense planning at relatively low cost. Our study, therefore, further contributes to the literature on how managers choose among multiple earnings management tools that are at their disposal. Prior research generally focuses on the tradeoff between managing accruals and manipulating real operating activities. We extend this line of research by showing that multinational firms use tax expense planning transactions as an earnings management tool. We also contribute to tax-related earnings management research. While existing literature focuses on the manipulation of tax-related accruals, our findings provide evidence that managers resort to manipulating tax-related contractual cash flows when real operations earnings management is costly. Given the impact of global offshoring activities on focal firm's earnings management strategy, future research could investigate whether and, if so, how global operations influence other firm's decisions and their consequences for shareholder welfare.

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Appendix 1

10-K PRE disclosure footnote examples

from Wal-Mart Stores, Inc.'s January 31, 2016 year-end Note 9 Taxes

U.S. income taxes have not been provided on accumulated but undistributed earnings of the Company's international subsidiaries of approximately \$26.1 billion and \$23.3 billion as of January 31, 2016 and 2015, respectively, as the Company intends to permanently reinvest these amounts outside of the U.S. However, if any portion were to be distributed, the related U.S. tax liability may be reduced by foreign income taxes paid on those earnings. Determination of the unrecognized deferred tax liability related to these undistributed earnings is not practicable because of the complexities with its hypothetical calculation. The Company provides deferred or current income taxes on earnings of international subsidiaries in the period that the Company determines it will remit those earnings.

from Exxon Mobil Corporation's December 31, 2016 year-end Note 19 Income & Other Taxes

The Corporation had \$54 billion of indefinitely reinvested, undistributed earnings from subsidiary companies outside the U.S. that were retained to fund prior and future capital expenditures. Deferred taxes have not been recorded for potential future tax obligations as these earnings are expected to be indefinitely reinvested for the foreseeable future. As of December 31, 2016, it is not practical to estimate the unrecognized deferred tax liability associated with these earnings given the future availability of foreign tax credits and uncertainties about the timing of potential remittances.

from Apple, Inc.'s September 24, 2016 year-end Note 5 Income Taxes

The foreign provision for income taxes is based on foreign pre-tax earnings of \$41.1 billion, \$47.6 billion and \$33.6 billion in 2016, 2015 and 2014, respectively. The Company's consolidated financial statements provide for any related tax liability on undistributed earnings that the Company does not intend to be indefinitely reinvested outside the U.S. Substantially all of the Company's undistributed international earnings intended to be indefinitely reinvested in operations outside the U.S. were generated by subsidiaries organized in Ireland, which has a statutory tax rate of 12.5%. As of September 24, 2016, U.S. income taxes have not been provided on a cumulative total of \$109.8 billion of such earnings. The amount of unrecognized deferred tax liability related to these temporary differences is estimated to be \$35.9 billion.

from Berkshire Hathaway Inc.'s December 31, 2016 year-end Note 16 Income Taxes

We have not established deferred income taxes on accumulated undistributed earnings of certain foreign subsidiaries. Such earnings were approximately \$12.4 billion as of December 31, 2016 and are expected to remain reinvested indefinitely. Upon distribution as dividends or otherwise, such amounts would be subject to taxation in the U.S. and potentially in other countries. However, U.S. income tax liabilities would be offset, in whole or in part, by allowable tax credits deriving from income taxes previously paid to foreign jurisdictions. Further, repatriation of all accumulated earnings of foreign subsidiaries would be impracticable to the extent that such earnings represent capital needed to support normal business operations.

Notes. Excerpts from the 2016 year-end tax portion of the notes to consolidated financial statements from the 10-K filings with the Securities and Exchange Commission of the United States for the four largest U.S. publicly traded corporations as of 2016.

Appendix 2

Variable definitions

Primary dependent variables

$\Delta PRE^{a,c}$	Permanently reinvested earnings from current period activities, defined as indefinitely reinvested earnings (FOREIGN_EARNINGS) in year t less FOREIGN_EARNINGS in year t-1, scaled by total assets (AT).
$ROEM^c$	<p>The amount of real operations manipulation computed as the sum of the abnormal portions of production costs and discretionary expenses, as defined by Roychowdhury (2006).</p> <p>The abnormal portion of production cost is estimated as the deviation from the predicted value from the corresponding industry-year regression: $(PROD)/(AT) = \beta_0 + \beta_1 * 1/(AT) + \beta_2 * (SALE)/(AT) + \beta_3 * (\Delta SALE)/(AT) + \beta_4 * (\Delta LAG_SALE)/(AT) + \varepsilon$.</p> <p>The abnormal portion of discretionary expenses is estimated as the deviation from the predictor value from the corresponding industry-year regression: $\Sigma(XRD+XAD+XSGA)/(AT) = \alpha_0 + \alpha_1 * 1/(AT) + \alpha_2 * (SALE)/(AT) + \varepsilon$. Missing values for XRD, XAD, or XSGA are assumed to be zero.</p>

Primary variables of interest

$Output^h$	<p>The natural log of $(1 + Offshore_OUTPUT)$.</p> <p><i>Offshore_OUTPUT</i> is measured as the number of mentions of the firm selling goods to the given country in 10-K filings (i.e., sale, revenue, customer, consumer, market, marketplace, distribute, distribution, distributor, distributorship, dealer, client, export, shipment, demand, store, wholesale, receivable, and any plural, past tense, or active voice derivations of such words).</p>
$Input^h$	<p>The natural log of $(1 + Offshore_INPUT)$.</p> <p><i>Offshore_INPUT</i> is measured as the number of mentions of the firm purchasing inputs from the given country in 10-K filings. <i>Offshore_INPUT</i> is a summation of <i>External_Offshore_Input</i>, <i>Internal_Offshore_Input</i>, and <i>Unknown_Offshore_Input</i>, defined below.</p>
Ext_Input^h	<p>The natural log of $(1 + External_Offshore_Input)$.</p> <p><i>External_Offshore_Input</i> is measured as the number of mentions of the firm purchasing inputs from the given country in 10-K filings when the firm does not also mention owning assets in the same country (i.e., supplier, import, importation, subcontract, subcontractor, vendor, purchase + from, and any plural, past tense, or active voice derivations of such words and phrases).</p>
Int_Input^h	<p>The natural log of $(1 + Internal_Offshore_Input)$.</p> <p><i>Internal_Offshore_Input</i> is measured as the number of mentions of the firm purchasing inputs from the given country in 10-K filings when the firm also mentions owning assets in the same country (i.e., subsidiary, facility, plant, factory, venture, exploration, storage, warehouse, and any plural, past tense, or active voice derivations of such words).</p>

(continued on next page)

Appendix 2

Variable definitions (continued)

Primary variables of interest

<i>Unknown_Input</i> ^h	The natural log of $(1 + \text{Unknown_Offshore_Input})$. <i>Unknown_Offshore_Input</i> is measured as the number of input words that are not explicitly identified as either <i>External_Offshore_Input</i> or <i>Internal_Offshore_Input</i> because the subject of the sentence is unclear (i.e., manufacture, produce, production, and any plural, past tense, or active voice derivations of such words).
<i>Abn_Input</i> ^h	Abnormal offshore input, defined as the residual of the annual regression $\text{Input} = f(\text{Output})$, by year.
<i>Abn_Ext_Input</i> ^h	Abnormal offshore external input, defined as the residual of the annual regression $\text{Ext_Input} = f[\text{Output}, \text{Input}]$, by year.
<i>Abn_Int_Input</i> ^h	Abnormal offshore internal input, defined as the residual of the annual regression $\text{Int_Input} = f[\text{Output}, \text{Input}]$, by year.

Conditioning variables

<i>CAP</i> ^s	An indicator variable equal to 1 if the firm is under the IRS Compliance Assurance Process program, 0 otherwise.
<i>GETR</i> ^c	Tax expense (TXT) divided by pre-tax income after special items (PI).
<i>LitRisk</i> ^c	An indicator variable equal to 1 if the firm operates in an industry with high litigation, defined as industry SICs 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370–7374, 0 otherwise.
<i>Miss_Amount</i> ⁱ	The median analyst forecast, from all forecasts issued within 180 days of the earnings announcement, less earnings absent earnings management via tax planning.
<i>MrktSh</i> ^c	The percentage of the firm's sales (SALE) to total sales in the industry, where industry is defined based on three-digit SIC codes.
<i>Performance_Pay</i> ^c	Ratio of performance-based pay to total compensation. Performance-based pay is the sum of bonus, non-equity incentive plan compensation, grant date fair value of stock awarded under FAS 123R, and grant date fair value of option granted. Total compensation is the sum of salary, all other compensation, change in pension value and nonqualified deferred compensation earnings and <i>Performance_pay</i> .
<i>Trapped</i> ^s	An indicator variable equal to 1 if the percent of domestic cash to total assets is within the bottom tercile of observations while the percent of foreign cash to total assets is simultaneously with the top tercile, 0 otherwise.

(continued on next page)

Appendix 2

Variable definitions (continued)

Control variables

<i>BIG4</i> ^a	An indicator variable equal to 1 if the firm is audited by one of the Big 4 accounting firms, 0 otherwise.
<i>Cash</i> ^c	Cash and cash equivalents (CHE) divided by total assets (AT).
<i>DACC</i> ^c	Discretionary accruals based on the Modified Jones model matched to another firm from the same industry and year with the closest ROA (Kothari, Leone, & Wasley, 2005).
<i>LEV</i> ^c	The sum of long-term debt (DLTT) and debt in current liabilities (DLC) divided by total assets (AT).
<i>MTB</i> ^c	Market value of equity, computed as the stock price at the end of the fiscal year (PRCC) * common shares outstanding (CSHO), divided by book value of equity (CEQ).
<i>NAS</i> ^a	Natural log of firm's non-audit fees paid to the auditor.
<i>OCF</i> ^c	Operating cashflow (OANCF) scaled by lagged total assets (AT).
<i>ROA</i> ^c	Pre-tax income (PI) less special items (SPI) divided by total assets (AT).
<i>SIZE</i> ^c	The natural log of market value of equity, where market value of equity is computed as the stock price at the end of the fiscal year (PRCC) * common shares outstanding (CSHO).

Definitions and construction methodology for variables used in this study.

^a denotes data obtained from AuditAnalytics.

^c denotes data obtained from Compustat North America Fundamentals.

^e denotes data obtained from Execucomp.

^h denotes data obtained from the Hoberg & Moon data library.

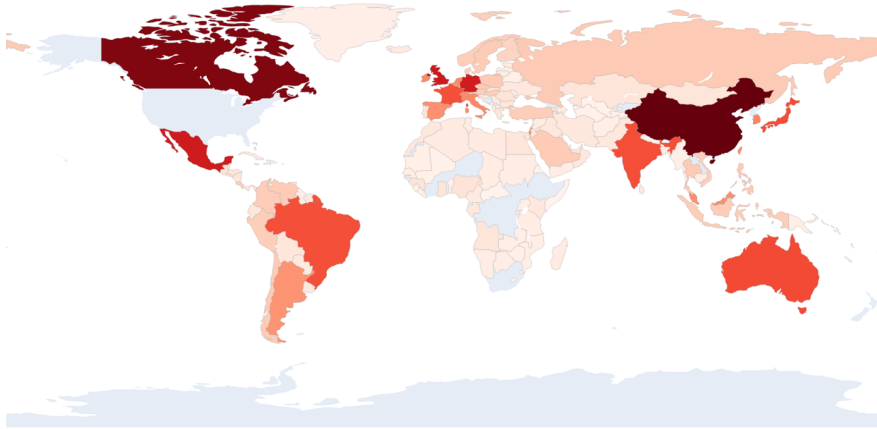
ⁱ denotes data obtained from I/B/E/S.

^s denotes data obtained from hand collection of SEC 10-K filings.

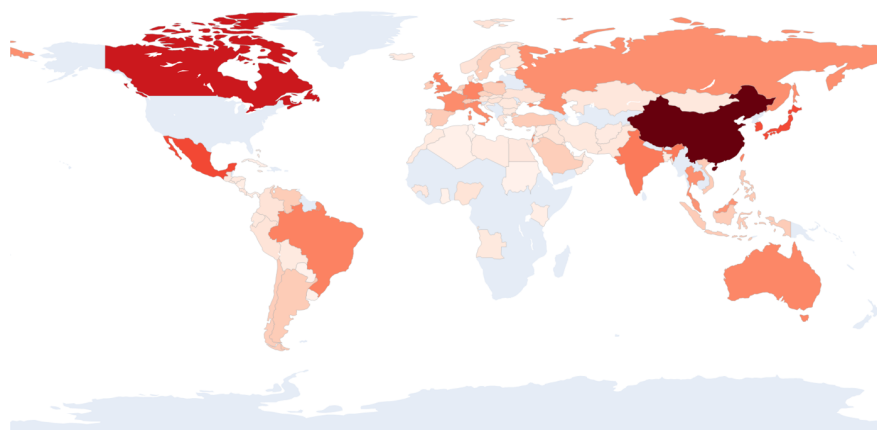
Appendix 3

Worldwide distribution of offshore internal input

(a) offshore internal input (*Internal_Input*)



(b) abnormal offshore internal input (*Abn_Int_Input*)



Notes. Appendix 3 depicts country-by-country maps breaking out the intensity of foreign operations (i.e., offshoring) activity in our sample. Darker shading denotes a greater intensity of activity in the country, relative to all other countries. Map (a) depicts the average *total* offshore internal input by country, while map (b) depicts the average *abnormal* offshore internal input. Variable definitions are provided in Appendix 2.

Figure 1

Analysis around the Tax Cuts and Jobs Act of 2017

Category 2017 benchmark	Average 2015 ~ 2016 <i>ROEM</i> Pre-TCJA	Average 2018 ~ 2019 <i>ROEM</i> Post-TCJA
(A) High <i>Abn_Int_Input</i> & High ΔPRE	(1) 0.069	(2) 0.157 (2) – (1): 0.088 ^{α} (0.002)
(B) High <i>Abn_Int_Input</i> & Low ΔPRE	(3) 0.179	(4) 0.193 (4) – (3): 0.014 ^{β} (0.485)

$\alpha - \beta: 0.074 (0.03)$

Notes. Descriptive analysis around enactment of the Tax Cuts and Jobs Act of 2017, where the financial statement benefit from a permanently reinvested earnings designation disappeared after 2017.

Category (A) shows the average amount of real operations earnings management (*ROEM*) in 2015 ~ 2016 (1) and 2018 ~ 2019 (2) for firms in the highest tercile of both abnormal offshore internal input (*Abn_Int_Input*) and current permanently reinvested earnings (ΔPRE) during 2017. Similarly, category (B) shows the average amount of *ROEM* in 2015 ~ 2016 (3) and 2018 ~ 2019 (4) for firms in the highest tercile of *Abn_Int_Input* and lowest tercile of ΔPRE during 2017. α denotes the test of mean difference of the average *ROEM* in 2018 ~ 2019 compared to 2015 ~ 2016 for category (A) firms, while β denotes the test of mean difference of the average *ROEM* in 2018 ~ 2019 compared to 2015 ~ 2016 for category (B) firms. $\alpha - \beta$ denotes the test of mean difference of the associated mean change in *ROEM* between category (A) and category (B) firms.

P-values of the difference in means are reported in parentheses. Variable definitions are reported in Appendix 2.

Table 1
Summary statistics

Variable	Avg	STD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) <i>Output</i>	3.75	0.83																	
(2) <i>Input</i>	3.54	0.98	0.55																
(3) <i>Ext_Input</i>	0.95	0.94	0.35	0.47															
(4) <i>Int_Input</i>	3.09	0.92	0.51	0.93	0.32														
(5) <i>Abn_Input</i>	0.32	0.83	-0.15	0.74	0.27	0.70													
(6) <i>Abn_Ext_Input</i>	-0.08	0.83	0.15	0.15	0.94	0.01	0.06												
(7) <i>Abn_Int_Input</i>	0.11	0.33	-0.08	-0.07	-0.35	0.29	-0.01	-0.37											
(8) ΔPRE	0.01	0.08	-0.01	0.04	-0.01	0.03	0.05	-0.02	-0.01										
(9) <i>ROEM</i>	0.13	0.40	-0.02	0.13	-0.02	0.15	0.17	-0.07	0.08	-0.01									
(10) <i>Size</i>	7.47	1.75	0.08	0.12	0.01	0.10	0.08	-0.03	-0.04	-0.01	0.15								
(11) <i>MTB</i>	3.00	4.55	-0.02	-0.08	-0.07	-0.07	-0.08	-0.05	0.03	0.09	-0.13	0.06							
(12) <i>LEV</i>	0.18	0.17	-0.04	0.10	0.04	0.10	0.15	0.02	0.01	-0.02	0.12	0.31	0.03						
(13) <i>OCF</i>	0.10	0.09	-0.03	-0.04	-0.04	-0.03	-0.03	-0.03	0.02	0.02	-0.13	0.21	0.16	-0.07					
(14) <i>Cash</i>	0.19	0.16	0.07	0.06	0.03	0.05	0.01	0.00	-0.02	0.02	0.01	0.29	0.13	-0.04	0.72				
(15) <i>BIG4</i>	0.90	0.31	0.02	-0.14	-0.03	-0.13	-0.19	0.02	0.01	0.05	-0.26	-0.30	0.11	-0.41	0.08	-0.11			
(16) <i>ROA</i>	0.07	0.10	-0.01	0.00	-0.01	0.00	0.01	-0.01	0.00	0.02	0.01	0.37	0.07	0.14	0.12	0.11	-0.04		
(17) <i>DACC</i>	0.00	0.05	0.03	0.02	0.02	0.03	0.00	0.02	0.02	-0.04	0.12	-0.01	-0.01	-0.02	-0.22	0.16	-0.05	-0.04	
<i>NAS</i>	11.94	3.45	0.08	0.09	-0.01	0.09	0.04	-0.04	0.01	0.03	0.04	0.52	0.05	0.19	0.12	0.17	-0.16	0.40	-0.02

Notes. Univariate statistics for the 5,298 firm-year sample observations. Avg and STD denotes the mean and standard deviation, respectively. Pairwise correlations are included for each variable used in our study. Correlations that are significant at the 1% level are denoted in bold characters.

Variable definitions are provided in Appendix 2.

Table 2

Breakout across time by country

2007						2017					
<i>ΣInternal Input</i>			<i>ΣAbn Int Input</i>			<i>ΣInternal Input</i>			<i>ΣAbn Int Input</i>		
Rank	Country	Amount	Rank	Country	Amount	Rank	Country	Amount	Rank	Country	Amount
1	Canada	6,291	1	China	213	1	Canada	4,990	1	China	181
2	China	5,395	2	Canada	178	2	China	4,463	2	Canada	124
3	England	3,186	3	Japan	83	3	Mexico	2,174	3	Mexico	61
4	Mexico	2,860	4	Mexico	74	4	England	2,043	4	Korea	49
5	Germany	2,305	5	Korea	69	5	Germany	1,665	5	Japan	46
6	Australia	1,891	6	Singapore	49	6	Australia	1,549	6	Brazil	41
7	Japan	1,794	7	Germany	48	7	Brazil	1,501	7	India	40
8	Singapore	1,793	8	England	46	8	Singapore	1,398	8	England	37
9	France	1,766	9	India	44	9	India	1,357	9	Australia	32
10	India	1,342	10	Taiwan	42	10	Japan	1,203	10	Taiwan	30
11	Brazil	1,098	11	Brazil	38	11	France	1,070	11	Singapore	27
12	Netherlands	1,065	12	Australia	36	12	Korea	1,002	12	Germany	27
13	Korea	1,039	13	France	29	13	Netherlands	828	13	Russia	21
14	Italy	864	14	Italy	25	14	Ireland	785	14	Italy	20
15	Ireland	831	15	Malaysia	21	15	Israel	683	15	France	19
16	Switzerland	710	16	Philippines	19	16	Italy	611	16	Israel	15
17	Israel	690	17	Russia	18	17	Switzerland	595	17	Thailand	14
18	Taiwan	647	18	Thailand	16	18	Taiwan	520	18	Vietnam	13
19	Malaysia	604	19	Israel	15	19	Malaysia	505	19	Malaysia	12
20	Spain	588	20	Spain	14	20	Bermuda	412	20	Philippines	11

Notes. Breakouts of countries with the largest total mentions of offshore internal input (*ΣInternal Input*) and abnormal offshore internal input (*ΣAbn Int Input*) by all sample U.S. multinational firm separately in 2007 at the beginning of the sample period and 2017 at the end of the sample period.

Rank denotes the position of the top 20 countries for each amount by year. Amount denotes the total number of mentions for each country-year. Variable definitions are provided in Appendix 2.

Table 3

Impact of offshore internal input on tax expense planning

	DV =	(1) ΔPRE	(2) ΔPRE	(3) ΔPRE
<i>Abn_Int_Input</i>		0.016 (0.085)	0.017 (0.059)	0.017 (0.050)
<i>Size</i>			-0.037 (0.005)	-0.037 (0.003)
<i>MTB</i>			0.001 (0.093)	0.001 (0.098)
<i>LEV</i>			-0.019 (0.236)	-0.015 (0.350)
<i>OCF</i>			-0.002 (0.956)	-0.048 (0.141)
<i>ROA</i>				0.039 (0.504)
<i>Cash</i>				0.045 (0.303)
<i>BIG4</i>				0.007 (0.200)
<i>DACC</i>				-0.049 (0.154)
<i>NAS</i>				0.001 (0.101)
Constant		0.024 (0.000)	0.293 (0.002)	0.264 (0.001)
observations		5,298	5,298	5,298
adjusted R ²		0.403	0.416	0.418
year fixed effect		yes	yes	yes
firm fixed effect		yes	yes	yes

Notes. Results of Equation (1) $\Delta PRE_{it} = Abn_Int_Input_{it} + \text{controls} + \text{fixed effects} + \varepsilon_{it}$, testing the Hypothesis 1 relation between abnormal offshore internal input (*Abn_Int_Input*) and the current amount of permanently reinvested earnings (ΔPRE).

Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient.

Variable definitions are provided in Appendix 2.

Table 4

Impact of offshore internal input and tax expense planning on real operations earnings management

	DV =	(1) <i>ROEM</i>	(2) <i>ROEM</i>	(3) <i>ROEM</i>
<i>Abn_Int_Input</i>		0.016 (0.568)	0.014 (0.603)	0.014 (0.602)
ΔPRE		0.070 (0.393)	0.106 (0.218)	0.121 (0.136)
<i>Abn_Int_Input</i> * ΔPRE		-0.383 (0.052)	-0.401 (0.050)	-0.440 (0.023)
<i>Size</i>			0.090 (0.000)	0.097 (0.000)
<i>MTB</i>			0.000 (0.603)	0.000 (0.684)
<i>LEV</i>			-0.056 (0.231)	-0.067 (0.162)
<i>OCF</i>			-0.551 (0.000)	-0.360 (0.000)
<i>ROA</i>				-0.298 (0.009)
<i>Cash</i>				0.127 (0.021)
<i>BIG4</i>				-0.012 (0.732)
<i>DACC</i>				0.242 (0.001)
<i>NAS</i>				-0.004 (0.031)
Constant		0.111 (0.000)	-0.480 (0.008)	-0.492 (0.007)
observations		5,298	5,298	5,298
adjusted R ²		0.843	0.851	0.852
year fixed effect		yes	yes	yes
firm fixed effect		yes	yes	yes

Notes. Results of Equation (2) $ROEM_{it} = Abn_Int_Input_{it} + \Delta PRE_{it} + Abn_Int_Input_{it} * \Delta PRE_{it} + \text{controls} + \text{fixed effects} + \varepsilon_{it}$, testing the Hypothesis 2 relation between the substitution away from real operations earnings management (*ROEM*) in favor of tax planning via permanently reinvestment earnings in the presence of abnormal offshore internal input ($Abn_Int_Input_{it} * \Delta PRE_{it}$).

Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient.

Variable definitions are provided in Appendix 2.

Table 5

Falsification test

	DV =	(1) <i>ΔPRE</i>	(2) <i>ROEM</i>	(3) <i>ΔPRE</i>	(4) <i>ROEM</i>	(5) <i>ΔPRE</i>	(6) <i>ROEM</i>
<i>Output</i>		0.002 (0.375)	-0.018 (0.040)				
<i>Output * ΔPRE</i>			0.161 (0.028)				
<i>Abn_Input</i>				0.010 (0.207)	0.005 (0.553)		
<i>Abn_Input * ΔPRE</i>					-0.047 (0.325)		
<i>Abn_Ext_Input</i>					-0.003 (0.298)	-0.020 (0.016)	
<i>Abn_Ext_Input * ΔPRE</i>							0.159 (0.025)
<i>ΔPRE</i>			-0.550 (0.021)		0.044 (0.602)		0.063 (0.280)
Constant		0.258 (0.002)	-0.454 (0.015)	0.263 (0.001)	-0.511 (0.006)	0.265 (0.002)	-0.489 (0.007)
observations		5,298	5,298	5,298	5,298	5,298	5,298
adjusted R ²		0.417	0.852	0.418	0.852	0.417	0.853
year fixed effect		yes	yes	yes	yes	yes	yes
firm fixed effect		yes	yes	yes	yes	yes	yes
control variables		yes	yes	yes	yes	yes	yes

Notes. Results of falsification measures of Equations (1), where the dependent variable is the current amount of permanently reinvested earnings (*ΔPRE*) in columns 1, 3, and 5, and Equation (2), where the dependent variable is the real operations earnings management (*ROEM*) in columns 2, 4, and 6, replacing abnormal offshore internal input with alternative components of offshoring.

Control variables are included, but coefficients are suppressed for brevity. Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient.

Variable definitions are provided in Appendix 2.

Table 6

When tax expense planning is most desperate

<i>Panel A. Pressure to meet analyst performance targets</i>		
	DV =	
	(1) <i>ΔPRE</i>	(2) <i>ROEM</i>
<i>Abn_Int_Input</i>	-0.044 (0.123)	0.090 (0.428)
<i>Abn_Int_Input * Miss_Amount</i>	0.040 (0.082)	0.038 (0.548)
<i>Abn_Int_Input * ΔPRE</i>		-0.731 (0.667)
<i>Abn_Int_Input * Miss_Amount * ΔPRE</i>		-0.063 (0.927)
<i>ΔPRE</i>		0.336 (0.324)
<i>ΔPRE * Miss_Amount</i>		0.028 (0.848)
<i>Miss_Amount</i>	-0.009 (0.284)	0.002 (0.900)
Constant	0.059 (0.608)	-0.876 (0.090)
observations	438	438
adjusted R ²	0.802	0.860
year fixed effect	yes	yes
firm fixed effect	yes	yes
controls	yes	yes

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Table 6

When tax expense planning is most desperate (continued)

<i>Panel B. Managerial compensation incentives</i>		
	DV =	
	(1) <i>ΔPRE</i>	(2) <i>ROEM</i>
<i>Abn_Int_Input</i>	-0.067 (0.030)	0.137 (0.297)
<i>Abn_Int_Input * Performance_Pay</i>	0.093 (0.049)	-0.151 (0.387)
<i>Abn_Int_Input * ΔPRE</i>		-0.605 (0.736)
<i>Abn_Int_Input * Performance_Pay * ΔPRE</i>		1.551 (0.508)
<i>ΔPRE</i>		1.315 (0.008)
<i>ΔPRE * Performance_Pay</i>		-1.680 (0.018)
<i>Performance_Pay</i>	-0.038 (0.112)	0.031 (0.650)
Constant	0.399 (0.011)	-0.400 (0.278)
observations	1,041	1,041
adjusted R ²	0.310	0.843
year fixed effect	yes	yes
firm fixed effect	yes	yes
controls	yes	yes

Notes. Results for settings where tax expense planning is the most desperate.

Panel A examines how the pressure to meet analyst earnings targets impacts both tax expense planning via the current amount of permanently reinvested earnings (*ΔPRE*) and real operations earnings management (*ROEM*) in the presence of abnormal offshore internal input (*Abn_Int_Input*). Column 1 enhances Equation (1) by interacting the amount by which the firm would have missed the earnings target (*Miss_Amount*) absent tax expense planning via *ΔPRE* with the variable of interest *Abn_Int_Input*. Column 2 enhances Equation (2) by interacting *Miss_Amount* with the variable of interest interaction of *Abn_Int_Input* and *ΔPRE*.

Panel B examines how the decision of a firm to compensate its management team based on after-tax earnings impacts tax expense planning via *ΔPRE* and *ROEM* in the presence of *Abn_Int_Input*. Column 1 enhances Equation (1) by interacting the amount of after-tax performance pay (*Performance_Pay*) with the variable of interest *Abn_Int_Input*. Column 2 enhances Equation (2) by interacting *Performance_Pay* with the variable of interest interaction of *Abn_Int_Input* and *ΔPRE*.

Control variables are included, but coefficients are suppressed for brevity. Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient.

Variable definitions are provided in Appendix 2.

Table 7

When tax expense planning is most costly

<i>Panel A. Domestic cash constraint</i>		
	DV =	
	(1) ΔPRE	(2) $ROEM$
<i>Abn_Int_Input</i>	0.005 (0.550)	0.025 (0.307)
<i>Abn_Int_Input * Trapped</i>	-0.094 (0.063)	-0.224 (0.447)
<i>Abn_Int_Input * $-\Delta PRE$</i>		0.576 (0.172)
<i>Abn_Int_Input * Trapped * $-\Delta PRE$</i>		10.872 (0.081)
<i>$-\Delta PRE$</i>		-0.179 (0.212)
<i>$-\Delta PRE * Trapped$</i>		0.504 (0.485)
<i>Trapped</i>	0.013 (0.430)	0.021 (0.834)
Constant	0.265 (0.000)	-0.131 (0.585)
observations	2,324	2,324
adjusted R ²	0.132	0.881
year fixed effect	yes	yes
firm fixed effect	yes	yes
controls	yes	yes

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Table 7

When tax expense planning is most costly (continued)

<i>Panel B. Attention from taxing authority</i>		
	DV =	
	(1) ΔPRE	(2) $ROEM$
<i>Abn_Int_Input</i>	0.019 (0.155)	-0.146 (0.055)
<i>Abn_Int_Input</i> * <i>CAP</i>	-0.036 (0.002)	0.139 (0.137)
<i>Abn_Int_Input</i> * $-\Delta PRE$		4.788 (0.216)
<i>Abn_Int_Input</i> * <i>CAP</i> * $-\Delta PRE$		-3.625 (0.327)
$-\Delta PRE$		-0.287 (0.092)
$-\Delta PRE$ * <i>CAP</i>		-0.110 (0.770)
<i>CAP</i>	0.009 (0.186)	-0.065 (0.212)
Constant	0.751 (0.048)	-1.664 (0.123)
observations	233	233
adjusted R ²	0.297	0.910
year fixed effect	yes	yes
firm fixed effect	yes	yes
controls	yes	yes

Notes. Results for settings where tax expense planning is the most costly.

Panel A examines how domestic cash constraints impacts both tax expense planning via the current amount of permanently reinvested earnings (ΔPRE) and real operations earnings management ($ROEM$) in the presence of abnormal offshore internal input (*Abn_Int_Input*). Column 1 enhances Equation (1) by interacting an indicator if the firm-year had foreign cash trapped overseas (*TRAPPED*) with the variable of interest *Abn_Int_Input*. Column 2 enhances Equation (2) by interacting *TRAPPED* with the variable of interest *Abn_Int_Input* and $-1 * \Delta PRE$ ($-\Delta PRE$).

Panel B examines how participation in the IRS compliance assurance process (*CAP*) impacts both tax expense planning via ΔPRE and $ROEM$ in the presence of *Abn_Int_Input*. Column 1 enhances Equation (1) by interacting an indicator if the firm participated in *CAP* during the year with the variable of interest *Abn_Int_Input*. Column 2 enhances Equation (2) by interacting *CAP* with the variable of interest *Abn_Int_Input* and $-\Delta PRE$.

Control variables are included, but coefficients are suppressed for brevity. Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient.

Variable definitions are provided in Appendix 2.

Table 8

When real operations earnings management is most costly

Panel A. Litigation risk				
	(1)	(2)	(3)	(4)
<i>LitRisk:</i>	= 1	= 0	= 1	= 0
DV =	<i>ΔPRE</i>	<i>ΔPRE</i>	<i>ROEM</i>	<i>ROEM</i>
<i>Abn_Int_Input</i>	0.035^α	0.009^β	0.027	-0.004
	(0.019)	(0.393)	(0.413)	(0.905)
<i>Abn_Int_Input</i> * <i>ΔPRE</i>			-0.749^α	-0.071^β
			(0.013)	(0.512)
<i>ΔPRE</i>			0.241	0.020
			(0.110)	(0.652)
Constant	0.288	0.244	-0.409	-0.491
	(0.057)	(0.005)	(0.063)	(0.075)
chi-square statistic for α versus β	2.39		4.35	
p-value	(0.12)		(0.03)	
observations	1,858	3,440	1,858	3,440
adjusted R ²	0.440	0.413	0.888	0.830
year fixed effect	yes	yes	yes	yes
firm fixed effect	yes	yes	yes	yes
controls	yes	yes	yes	yes

(continued on next page)

Table 8

When real operations earnings management is most costly (continued)

Panel B. Market share					
	MrktSh: DV =	(1) Low ΔPRE	(2) High ΔPRE	(3) Low $ROEM$	(4) High $ROEM$
Abn_Int_Input		0.080^{\alpha}	-0.020^{\beta}	0.077	0.049
		(0.116)	(0.003)	(0.412)	(0.123)
$Abn_Int_Input * \Delta PRE$				-0.854^{\alpha}	-0.982^{\beta}
				(0.000)	(0.415)
ΔPRE				0.255	0.587
				(0.001)	(0.110)
Constant		0.447	0.326	-0.678	2.588
		(0.162)	(0.014)	(0.094)	(0.034)
chi-square statistic for α versus β		3.28		0.81	
p-value		(0.07)		(0.37)	
observations		530	530	530	530
adjusted R ²		0.581	0.493	0.877	0.884
year fixed effect		yes	yes	yes	yes
firm fixed effect		yes	yes	yes	yes
controls		yes	yes	yes	yes

Notes. Results for settings where real operating activities earning management is the most costly.

Panel A examines how domestic cash constraints impact both tax expense planning via the current amount of permanently reinvested earnings (ΔPRE) and real operations earnings management (*ROEM*) in the presence of abnormal offshore internal input (*Abn_Int_Input*). Equation (1) is reexamined by including only firms in high litigation risk industries (*LitRisk*) in column 2, and all others in column 2. Equation (2) is reexamined by including only firms in high litigation risk industries (*LitRisk*) in column 3, and all others in column 4.

Panel B examines how firms' market share of industry sales (*MrktSh*) impacts both tax expense planning via ΔPRE and *ROEM* in the presence of *Abn_Int_Input*. Equation (1) is reexamined by including only firms in the lowest decile of *MrktSh* in column 1 and including only firm-years in the highest decile of *MrktSh* in column 2. Equation (2) is reexamined by including only firms in the lowest decile of *MrktSh* in column 3 and including only firm-years in the highest decile of *MrktSh* in column 4.

Control variables are included, but coefficients are suppressed for brevity. Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient. The chi-square statistics are provided for the chi-squared test of difference between the relevant α and β variables of interest.

Variable definitions are provided in Appendix 2.

Table 9

Confirming tax expense planning

	(1)	(2)	(3)	(4)
ΔPRE : DV =	High <i>GETR</i>	Low <i>GETR</i>	High <i>GETR</i>	Low <i>GETR</i>
<i>Abn_Int_Input</i>	-0.550^{α} (0.002)	0.171^{β} (0.497)	-0.399^{α} (0.061)	0.131^{β} (0.535)
Constant	0.114 (0.021)	0.129 (0.230)	-0.922 (0.119)	-1.518 (0.225)
chi-square statistic for α versus β	3.79		3.21	
p-value	(0.05)		(0.07)	
observations	528	528	533	533
adjusted R ²	0.656	0.740	0.470	0.765
year fixed effect	yes	yes	yes	yes
firm fixed effect	yes	yes	yes	yes
controls	no	no	yes	yes

Notes. Results to confirm that tax expense planning leads to lower overall tax expense.

Equation (1) is modified by replacing the dependent variable with the effective tax rate under US GAAP (*GETR*). Columns 1 and 3 include firm-year observations in the highest decile of the current amount of permanently reinvested earnings (ΔPRE), while columns 2 and 4 include firm-year observations in the lowest decile of ΔPRE .

Control variables are included in columns 3 and 4 only, but coefficients are suppressed for brevity. Year and firm fixed effects are included. Robust standard errors are clustered by firm. P-values are presented in parentheses below the associated regression coefficient. The chi-square statistics are provided for the chi-squared test of difference between the relevant α and β variable of interest. Variable definitions are provided in Appendix 2.