

## The Effects of Changes in the Value and Certainty of Foreign Tax Credits

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## **The Effects of Changes in the Value and Certainty of Foreign Tax Credits**

### **Abstract**

We examine the effects of regulations that impose novel limitations on firms' foreign tax credits (FTCs), adding uncertainty to their calculation and potentially diminishing their value, as well as the subsequent weakening of those limitations. While FTCs can arise from U.S. firms' foreign operations or from shifting U.S. income to lower-tax jurisdictions, prior research has not directly examined the value that these credits provide to firms. Overall, we find mixed evidence that regulations altering the availability of FTCs broadly affect firm value. We find more consistent evidence that the FTC regulations we examine increase investor uncertainty. However, some subsets of firms – notably those lobbying on FTCs – experience more consistent market reactions to FTC-related events. Our study informs policymakers and suggests that, under the current U.S. international tax system, certain limitations on FTCs may not broadly reduce firm value.

## I. INTRODUCTION

Extensive research examines determinants of tax avoidance, generally exploring the association between firm attributes and effective tax rates (ETRs). A consistent finding is that firms' foreign operations play a central role in reducing ETRs (e.g., Rego 2003), because multinational corporations (MNCs) can shift income across jurisdictions to take advantage of lower tax rates. These income shifting strategies typically involve complex intercompany transactions and interactions with numerous provisions in the tax law. Despite this, the underlying mechanisms through which firms reduce taxes via foreign activities remain underexamined, with limited exceptions (e.g., Krull 2004; De Simone 2016; Duxbury 2023). In this study, we examine one aspect of foreign tax planning – foreign tax credits (FTCs) – by studying recent tax law changes that alter these credits.

FTCs, which are a long-standing feature of the U.S. tax system, mitigate double taxation on income that already faces foreign tax by providing a credit that partially or fully offsets U.S. taxation of the foreign income.<sup>1</sup> While FTCs have received limited attention in the literature relative to other credits (e.g., research and development [R&D] credits), FTCs are the largest tax credit taken by U.S. firms in recent years. As illustrated in Figure 1, in each year between 2015 and 2021, aggregate FTCs claimed by U.S. C corporations exceeded \$50 billion and were larger than *all other claimed general business credits combined* (IRS 2015-2021). Compared to the R&D credit, which is one of the credits making up the general business credit, FTCs were at least twice as large in each year.

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<sup>1</sup> The tax law changes we study occur after the Tax Cuts and Jobs Act of 2017 (TCJA), when FTCs are most relevant for foreign income subject to the global intangible low-taxed income (GILTI) regime. GILTI rules impose U.S. tax on foreign income above a set threshold. FTCs also remain relevant for Subpart F, which subjects certain types of foreign income to immediate U.S. taxation as if the income was earned in the U.S. Our tests capture changes affecting FTCs related to both GILTI and Subpart F income. Section 2 provides background on how FTCs apply to GILTI and Subpart F.

Despite their magnitude, prior work does not examine FTCs in detail for several reasons. First, unlike R&D credits, FTC rules rarely undergo changes in isolation. Second, firm disclosures contain limited FTC information. Some studies examine the overall valuation of deferred tax assets, of which FTCs may be one component, but find mixed results that cannot be attributed specifically to FTCs (Amir, Kirschenheiter, and Willard 1997; Ayers 1998).

The FTC changes that we examine arise from Treasury Regulations issued separately from broader tax legislation, providing a unique opportunity to examine FTCs without the confounding effects of other tax law changes. Specifically, the U.S. Treasury proposed new Regulations in late 2020 that would significantly alter the approach to determining which foreign taxes generate FTCs. The primary goal of the Regulations was to limit the ability of U.S. firms to claim FTCs for new digital service taxes (DSTs) enacted by certain foreign countries. DSTs, which are akin to sales taxes and apply to a firm's gross revenue from providing certain services based on *customer* location, represent a major departure from traditional approaches to global income taxation based on supply chains (e.g., *asset or employee* location). Among other issues, the U.S. government was concerned that U.S. firms would claim FTCs for DSTs paid to foreign countries, reducing U.S. tax revenue and effectively subsidizing DSTs that the U.S. government viewed as unfairly targeting U.S. tech firms. Further, DSTs do not meet the conceptual criteria underlying taxes eligible for FTCs (Oosterhuis 2024), so that failing to pursue the Regulations could encourage taxpayers to claim FTCs for other non-creditable taxes, a risk to government revenue that is frequently subject to litigation and congressional interest (e.g., *FedEx Corporation v United States*; Whitehouse et al. 2025).

However, the proposed FTC Regulations potentially limited the creditability of many more foreign taxes than just DSTs. Firms noted that the "...Regulations are a radical departure from

well-established law” (Patolawala et al. 2022). The changes to determining which foreign taxes generate FTCs raised questions about the ability of firms to obtain FTCs for previously creditable foreign taxes and generated a significant amount of uncertainty regarding FTC availability. Given the concerns raised by firms, the Treasury modified, and in 2023 indefinitely postponed, the implementation of the new Regulations. Section 2 provides additional discussion of these changes.

We study market responses around seven events related to the Regulations. The first event is the initial proposal of the Regulations in 2020. We expect that the proposed Regulations reduce the value of FTCs due to new limitations on creditable foreign taxes and increase uncertainty due to both the novel law changes and uncertainty as to how any final Regulations would differ from the proposed Regulations. The second event – the issuance of final Regulations in 2021 – finalizes the new rules that reduce the value of FTCs. Event 2 has ambiguous effects on uncertainty, however, because it resolves uncertainty about the proposed versus final form of the rules but confirms the novel and uncertain methods now imposed on FTC calculations. Consistent with firms anticipating negative effects from the Regulations, CFOs of 28 major U.S. firms wrote a letter to Treasury Secretary Yellen to raise concerns and request relief from the new rules (Patolawala et al. 2022).

We then examine market responses to the remaining five events, which gradually scale back and postpone the Regulations. We expect countervailing effects for these events (i.e., reduced uncertainty around FTC computations and increased value of FTCs) as the rules move back toward the well-established historical rules. Consistent with benefits to the reversal of the Regulations, Johnson & Johnson (whose CFO also signed the letter to Secretary Yellen) recorded a \$500 million tax benefit in 2023 to reflect additional FTCs available under the old rules – that could not be recorded while the new Regulations were in effect – which became available again after the

postponement of the Regulations (Velarde 2023).

One challenge with studying events that affect a wide set of firms on a single day is that each firm's reaction may be correlated. Therefore, following Schipper and Thompson (1983), we conduct our analyses by creating portfolios of affected (e.g., multinational) and unaffected (e.g., domestic) firms and comparing the returns across the portfolios in two-day event windows over the full sample period from July 1, 2020 to December 31, 2023. In addition to examining stock market returns, we examine option volatility (options data is only available through August 31, 2023) to gain insight about uncertainty in addition to firm value.

Our initial test compares an equal-weighted portfolio of MNCs, likely eligible for FTCs broadly, to a portfolio of domestic firms. One notable limitation of our study is that the first event date, the initial proposal of the new Regulations, occurs on November 2, 2020 and directly overlaps with the 2020 election held on November 3, 2020. Thus, we have difficulty interpreting results around the initial event date. Around Event 2 (the finalization of the new Regulations), we find some evidence of reduced market value and uncertainty for MNCs relative to domestic firms. Though the final Regulations had negative effects for MNC value, they provided clarity on the new FTC rules which were previously subject to change. For the events subsequently weakening the Regulations, we generally find evidence of increased market value and reduced uncertainty for MNCs relative to domestic firms. Results are more consistent and statistically significant regarding uncertainty than firm value, suggesting that the FTC Regulations primarily increased uncertainty, with less clear effects on firm value. Discussions with several practitioners at Big 4 accounting firms also consistently specify concerns over uncertainty in conducting FTC computations under the Regulations rather than valuation concerns. Notably, these discussions indicate the Big 4 accounting firms came to differing conclusions regarding what taxes were eligible for FTCs, and

the firms were unwilling to share their differing conclusions, which is unusual (e.g., firms often publicly post their views).

Based on discussions with practitioners and other experts in foreign taxes, we conduct numerous cross-sectional analyses attempting to isolate the firms most likely to be affected by the Regulations. In these cross-sectional tests, we examine only MNCs and split our portfolios into those MNCs more versus less likely to be affected. We expect firms more affected by the Regulations to be: a) firms avoiding more tax, b) firms with subsidiaries in Brazil (which was repeatedly singled out as having income taxes that were no longer eligible for FTCs under the Regulations),<sup>2</sup> or c) firms (and their peers) that attempt to influence regulatory decision-making related to the FTC either by requesting relief from the Regulations in a letter to Treasury Secretary Yellen or by lobbying on FTC-related topics. We generally find evidence of more positive market reactions and less uncertainty around the events weakening the Regulations (Events 3 to 7) for the MNCs in our “more affected” cross-sections relative to other MNCs. Evidence around the issuance of the Final Regulations (Event 2) is more mixed. That said, across several other cross-sections that might reasonably predict larger impacts of the Regulations (e.g., firms with tax haven subsidiaries, firms with low foreign ETRs and high foreign income), we fail to find consistent evidence. Overall, our results suggest that changes in the value and uncertainty of FTCs are highly relevant for narrow subsets of firms, but may not affect a wider array of firms.

In additional analyses, for the events that occurred during the trading day for which we have timestamps (Events 1, 4, 5, and 6), we examine narrow-window trading using Trade and Quote (TAQ) data to better isolate effects of the Regulations. We focus on the firms that sign the letter to Secretary Yellen or engage in lobbying related to FTCs. Even among these firms, we find

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<sup>2</sup> Brazil subsequently adjusted its tax system in response to the Regulations beginning in 2024 (Ruedenberg 2023). We acknowledge that markets may have anticipated these adjustments.

little evidence of reactions to the Regulations. In a further analysis to attempt to better isolate affected firms, we identify 10-K filings that reference the foreign tax credit or related terms. Among these firms, we again observe little consistent evidence of a market response. These findings are consistent with investors facing challenges in interpreting the ultimate effects of the Regulations, as well as the broader difficulty investors have in processing tax information (e.g., Weber 2009). Nuances of the tax and accounting rules related to FTCs may contribute to investors' difficulty in interpreting the ultimate effects of the Regulations, driving the uncertainty effects and the limited market value responses we observe.

Our study contributes to the literature by examining a specific tool that reduces firm taxes – FTCs. Despite the large magnitude of FTCs, little prior work examines FTCs directly. In contrast to the perceived importance of FTCs in the global tax system, and prior research finding strong market responses to certain tax legislation, our results suggest that in the current U.S. tax system, the limitations imposed on FTCs by the Regulations may only be relevant for a limited set of firms. This finding is important to policymakers; limiting firms' ability to use FTCs may raise U.S. government revenue with relatively small costs to most firms. The limited market return reactions we find may also suggest that investors anticipate foreign countries adjusting their policies in ways that offset U.S. tax changes, as Brazil did, which is also relevant to policy debates (e.g., these types of negotiations arose in the “One Big Beautiful Bill Act” (OBBBA) passed in 2025). Finally, our results suggest that uncertainty in laws may be a chief consideration for firms and investors, which also has implications for recent policymaking that takes a “whipsaw” approach.

## **II. SETTING**

The foreign tax credit is a long-standing part of the U.S. taxation of multinationals. Before the Tax Cuts and Jobs Act (TCJA) of 2017, the U.S. operated under a worldwide system of

corporate taxation, where all income earned by U.S. corporations was subject to U.S. tax (up to a maximum corporate rate of 35%), regardless of the location where the income was earned. However, most foreign income was only subject to this tax upon its repatriation to the U.S.<sup>3</sup> Thus, multinational firms could shift income to low-tax foreign countries, reducing their taxes for as long as the income was not repatriated to the U.S. Upon repatriation, the repatriated income generates credits for foreign taxes paid on that income, which partially or fully offset the U.S. tax on that income in order to mitigate double taxation. Before the TCJA, FTCs could accumulate over time as income was repatriated, so that FTCs not used in one year could carry over and be used in other years (subject to limitations).

After the TCJA, the U.S. shifted to a quasi-territorial corporate tax system, where most income is taxed where earned and repatriations do not trigger incremental U.S. tax. However, the U.S. created a tax on GILTI so that foreign income earned above a set threshold faces U.S. tax at a reduced rate in the current period, regardless of repatriation. GILTI has three notable aspects in our sample period. First, the tax rate on GILTI (10.5%) is half of the post-TCJA corporate tax rate of 21%. This rate reduction is achieved by allowing a 50% deduction of GILTI. Second, only 80% of foreign taxes deemed paid can be used as FTCs to offset GILTI tax, whereas up to 100% were available to offset U.S. taxes on repatriated foreign income before the TCJA (though the FTC cannot exceed the U.S. tax on the foreign income). Third, unused FTCs related to GILTI do not carry over to other years; if the credit is not used in the current year, it expires.

Appendix B includes a more detailed example of a GILTI tax calculation, including the effect of FTC in reducing GILTI. As shown in Appendix B, FTCs can be important in offsetting

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<sup>3</sup> Some foreign income, known as Subpart F income, is taxable immediately in the year it is earned (e.g., Dunbar and Duxbury 2015). The TCJA only made minor changes to the Subpart F rules, but added GILTI and other new rules around international taxes.

U.S. taxes. When the foreign tax rate exceeds about 14% ( $14\% * 80\% = 11\%$ ), it may be possible for FTCs to fully offset U.S. tax on GILTI (with a 10.5% rate), noting that this is a very simple and rough estimate for illustration.<sup>4</sup> Appendix B also includes an example of an FTC computation for Subpart F income, which mirrors the general pre-TCJA FTC rules discussed earlier.

In order for a foreign tax to be creditable – that is, to generate FTCs – the U.S. requires the foreign tax to be an *income tax* in a U.S. sense. As discussed previously, the U.S. Treasury wanted to ensure that firms could not claim FTCs for DSTs, which tax revenue rather than income. Under previous regulations, foreign taxes that broadly resembled income taxes under the U.S. rules could generate FTCs. Under the new Regulations, rather than rely on general characterizations, foreign taxes could only generate FTCs if technical details of the foreign laws matched U.S. laws (EY 2020). This required U.S.-based personnel to interpret foreign laws and compare them to U.S. laws, which is far outside the scope of the typical tax practitioner’s skill set. Thus, in the attempt to ensure DSTs did not generate FTCs, the new Regulations also imposed a high degree of uncertainty and limited the creditability of historically creditable foreign taxes.

We examine seven events related to the Regulations. On November 2, 2020 (Event 1), the Treasury proposed the new Regulations that would substantially change the computation of FTCs. The proposal arose in response to DSTs, which became increasingly salient following EU discussions in March of 2018, followed by France’s enactment of a DST retroactive to January 1, 2019.<sup>5</sup> Following the proposed Regulations is a period for gathering public comments. This process of proposing regulations and requesting comments (typically due within 60 days of the proposal) is standard and generally required (e.g., under the Administrative Procedure Act). The

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<sup>4</sup> The OBBBA made changes to GILTI, including rebranding it as “net CFC tested income” (NCTI). These changes occur after our sample period. Because the OBBBA changed many laws, its passage does not allow direct study of FTCs.

<sup>5</sup> <https://taxfoundation.org/research/all/global/digital-taxation/>

Treasury gathers the comments and then decides if and how to proceed with rulemaking. Appendix D summarizes common issues raised in comment letters submitted in response to the proposed Regulations. The most frequently raised issues relate to jurisdictional nexus, net gain, and cost recovery requirements, all of which increase the potential for double taxation of U.S. firms operating abroad. After collecting comments, the Treasury finalized the Regulations on December 29, 2021 (Event 2).<sup>6</sup>

The next five events relate to weakening or postponing the Regulations. First, on July 26, 2022 (Event 3), the Treasury issued “technical corrections” broadening the foreign taxes eligible for FTCs. These corrections address the “cost recovery requirement” in the Regulations, which was viewed by firms as one of the most problematic changes. In brief, prior to the technical corrections, FTCs were not allowed when foreign countries’ tax systems disallowed deductions beyond those that were disallowed in U.S. law. The technical corrections expanded the permitted disallowances to those consistent with *any principles* in the U.S. tax system or general public policy concerns (EY 2022a), mitigating the need to do line-by-line comparisons and apply uncertain judgements across U.S. and foreign tax law. On November 18, 2022 (Event 4), the Treasury proposed additional regulations further broadening the types of foreign taxes eligible for FTCs. Specifically, this proposal further expanded the cost recovery requirement to only require deduction of “substantially all” of each significant item of expense, regardless of the underlying principles. It also expanded the creditability of withholding taxes on royalties, which had been limited by the final Regulations (EY 2022b).

On July 21, 2023 (Event 5), the IRS issued Notice 2023-55, which, with limited exceptions,

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<sup>6</sup> The Regulations became effective March 7, 2022. We do not examine this as an event date because there was no new information released. However, this is the date that GAAP reflects the effects of the taxes. Most 12/31/2021 firms therefore discuss the effects of the regulations, if material, as subsequent events in their 2021 10-K (see Appendix C for examples).

temporarily waived the Regulations for 2022 and 2023. Thus, firms could use the well-established FTC rules that existed prior to the Regulations to compute FTCs for these years. On September 13, 2023 (Event 6), an IRS attorney speaking at a conference stated his expectation that the IRS would extend the temporary waiver in Notice 2023-55 to 2024 (Smith 2023). Finally, on December 11, 2023 (Event 7), the IRS issued Notice 2023-80, indefinitely extending Notice 2023-55. As a result, the FTC rules reverted to the pre-Regulation rules as of Event 7. Table 1 lists each of these events.

### **III. PRIOR LITERATURE AND HYPOTHESES**

Several studies document that firms with foreign operations (i.e., MNCs) avoid taxes (e.g., Rego 2003). Tax haven use also appears to assist MNCs in avoiding taxes (Dyreng and Lindsey 2009). Broadly, tools like transfer pricing and aspects of location decisions are believed to enable these tax reductions, but the literature only recently documents specific strategies that MNCs can use to reduce their taxes. For example, De Simone (2016) finds that adoption of accounting standards by a broad array of firms provides firms with more “comparable companies” that they can use to justify favorable transfer prices between their foreign subsidiaries. Albertus (2025) finds that controlled foreign corporation (CFC) rules limit foreign MNCs’ ability to shift income out of the U.S. through transfer pricing. Khalil et al. (2023) find that firms can reduce taxes by locating goodwill in Luxembourg, where goodwill impairments receive favorable tax treatment. Drake et al. (2022) show that firms place additional employees in locations to support income-shifting to those locations. Kelley et al. (2024) find that firms reclassify additional expenses as cost of goods sold (COGS) to avoid the Base Erosion and Anti-Abuse Tax (BEAT), which imposes additional tax on non-COGS payments to foreign related parties. In sum, research recently examines specific methods that MNCs use to avoid tax. Because foreign tax planning strategies often generate FTCs,

FTCs play a role in these strategies.

A separate set of studies examines the economic and firm value consequences of tax avoidance. Hasan et al. (2014) and Shevlin et al. (2020) find that tax avoidance increases firms' cost of debt, while Goh et al. (2016) find that it decreases firms' cost of equity capital. Drake et al. (2019) and Fan et al. (2025) find that the relation between tax avoidance and firm value can vary with firm attributes, including the level of risk inherent in the tax avoidance. Hanlon and Slemrod (2009), Nesbitt et al. (2023), and Li et al. (2024) find mixed evidence of market reactions to tax sheltering news, finding positive, neutral, or negative reactions. Ayers (1998) finds that tax-related assets and liabilities – including items such as FTC carryforwards – are value relevant to firms. Amir et al. (1997) find more mixed evidence after breaking tax-related assets into finer categories. Given the prior literature indicating that FTCs may be value relevant, reduction in their value or an increase in their uncertainty could have market consequences.

A broad set of studies also examine tax law changes using event studies similar to ours, often focusing on the Tax Reform Act of 1986 (TRA86) or the TCJA (e.g., Cutler 1988; Givoly and Hayn 1991; Hulse 1996; Bratten and Hulse 2016; Wagner, Zeckhauser, and Ziegler 2020; Luchs-Nuñez et al. 2022; Gaertner et al. 2025). Most studies find evidence of market reactions – even if heterogeneous – around law changes. However, Wagner et al. (2020) and Luchs-Nuñez et al. (2022) find more mixed evidence reflecting either limited effects of the tax changes or market inability to fully appreciate the consequences of complex tax laws. Interestingly, few studies examine regulatory actions taken by the U.S. Treasury (see Daugherty, Stomberg, and Williams 2024 and Marino and Watson 2024 for exceptions), instead focusing primarily on proposed or enacted legislative action from Congress. However, the Treasury provides substantially more guidance through regulations and other documents than Congress issues through laws.

Based on this prior literature, we propose a set of hypotheses regarding both market reaction and uncertainty. To our knowledge, our study is among the first to consider uncertainty around tax law changes (see Campbell et al. 2025 and Gallemore et al. 2025 for exceptions).<sup>7</sup> The initial proposal of the Regulations in 2020 (Event 1) should limit the value of FTCs and increase uncertainty surrounding their usage. However, because this event overlaps with the 2020 election, we do not propose a hypothesis. The finalization of Regulations in 2021 (Event 2) should also reduce the value of FTCs given that the rule is now in effect. Of note, some firms believed that the final Regulations produced worse outcomes than the proposed version (Patolawala et al. 2022). While this event cements the value reduction of FTCs, the effect on uncertainty is less clear. Specifically, the finalization of the Regulations may increase uncertainty due to changes from the initially proposed Regulations and concerns about how to implement the final rules. On the other hand, the finalization of the Regulations reduces uncertainty in the regulatory process around the proposed versus final FTC rules. Based on this discussion, we propose the following hypotheses:

**H1a:** Finalization of the FTC Regulations reduces firm value for firms more affected by the Regulations relative to firms less affected by the Regulations.

**H1b:** Uncertainty for firms more affected by the FTC Regulations does not vary relative to firms less affected by the Regulations around the finalization of the Regulations.

In response to criticism, the IRS and Treasury subsequently took steps to weaken the effect of the Regulations beginning in mid-2022 (Events 3 to 7). In general, these events had the effect of partially or fully reverting to the rules in place before the new Regulations. As such, we expect each of these events to increase the value of FTCs and reduce the surrounding uncertainty. As such, we propose the following hypotheses:

**H2a:** Events rolling back the FTC Regulations increase firm value for firms more affected

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<sup>7</sup> A few studies examine general perceptions or expectations of tax policy uncertainty, rather than uncertainty directly arising from tax law changes (e.g., Brown et al. 2022, 2025).

by the Regulations relative to firms less affected by the Regulations.

**H2b:** Events rolling back the FTC Regulations reduce uncertainty for firms more affected by the Regulations relative to firms less affected by the Regulations.

These hypotheses are not without tension. Notably, the value of FTCs after the TCJA – or even before the TCJA – is not clear, with little or no direct evidence on their value. It is possible that FTCs or the changes made by the Regulations are too small to materially affect public firms' market value or uncertainty.<sup>8</sup> Also, firms are not required to follow regulations as long as they disclose this choice on Form 8275-R, though this heightens litigation risk. Appendix B notes cases where firms may generate excess, unusable FTCs (e.g., high foreign tax rates). For firms with “too many” FTCs, uncertainty around additional FTCs is less relevant. Similarly, Appendix B notes that firms with excess credits under the FTC regime before the Regulations may not have expected to use all the carryover credits, requiring a valuation allowance. To the extent that the FTC Regulations changed this expectation, these firms may remove the valuation allowance which the market may interpret as positive (though, in the long run, the Regulations will result in higher cash taxes paid once all the credit carryforwards are used up).<sup>9</sup> As such, the effects we study are empirical questions.

#### **IV. DATA, RESEARCH DESIGN, AND SUMMARY STATISTICS**

##### **Data**

We test the market reaction to key FTC events using data from the CRSP daily stock files for July 2020 through December 2023. Table 2 presents our sample selection process. We start with the intersection of CRSP and Compustat for firms with CRSP share code 10 or 11 (ordinary U.S. common shares). Because the FTC is most relevant to MNCs based in the U.S., limiting our

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<sup>8</sup> Prior to starting this project, an academic foreign tax expert suggested the effects of the Regulations on FTCs would be immaterial, indicating that we have a credible null hypothesis.

<sup>9</sup> SEC filings by Yum! Brands and The Brinks Company, from which excerpts are presented in Appendix C, exemplify this nuance of accounting for FTC carryovers.

sample to share codes 10 and 11 excludes REITs, American Depositary Receipts (ADRs), closed-end funds, and firms not incorporated in the U.S. (Hanlon and Hoopes 2014). We require firms to have information to determine MNC status using the method outlined by Dyreng and Lindsey (2009).<sup>10</sup> We then eliminate firms that change between MNC and domestic-only status during the sample, firms with total assets below \$10 million for any years in the sample, and firms with an earnings announcement on the day prior to (or over the weekend for Monday events), the day of, or the day after any of our event dates. Lastly, we exclude firms with a share price below \$5 on the day prior to any of our event dates (Wagner, Zeckhauser, and Ziegler 2018). The final sample for our primary market reaction tests includes 1,764 firms, comprised of 1,243 MNCs and 521 domestic-only firms. As we discuss later, we aggregate returns to daily portfolios, so that our tests include up to 881 trading days. Cross-sectional tests may include fewer firms due to data availability for defining cross-sections, though the number of days analyzed remains constant.

### **Research Design**

We examine the stock market reaction around the key FTC Regulation event dates in Table 1 using the multivariate regression model (MVRM) from Schipper and Thompson (1983). In our setting, where each event date is the same for all firms, the MVRM is advantageous because cross-correlation between firms' stock returns is problematic for testing abnormal returns on a security-by-security basis (Frischmann, Shevlin, and Wilson 2008; Dee, Lulseged, and Zhang 2011). The MVRM is based on the market model, but also includes an indicator variable for each event window. The coefficient on each indicator variable measures that event's effect on the portfolio of treated firms. We estimate the following OLS regression:

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<sup>10</sup> As in Dyreng and Lindsey (2009), we identify MNCs as firms with nonzero foreign current tax expense (TXFO) or pretax foreign income (PIFO). We follow the method in Dyreng and Lindsey (2009) to populate missing values in pretax foreign income, pretax domestic income, foreign current tax expense, federal current tax expense, and worldwide current tax expense based on values of total, domestic, and foreign income and/or tax for the given firm-year that are populated.

$$R_{pt} = \alpha_p + \beta_p R_{ct} + \sum_{k=1}^K g_{pk} D_{kt} + e_{pt} \quad (1)$$

$R_{pt}$  is the equal-weighted return on portfolio  $p$  consisting of the MNCs in our sample on day  $t$ . We identify MNCs as firms with nonzero foreign current tax expense (*TXFO*) or pretax foreign income (*PIFO*) as in Dyreng and Lindsey (2009).  $R_{ct}$  is the equal-weighted return on a control portfolio  $c$  consisting of the domestic-only firms in our sample on day  $t$ . Firms are considered domestic-only if they are not identified as MNCs.  $D_{kt}$  is an indicator variable equal to one for the two-day period  $[0, 1]$  relative to each event  $k$  listed in Table 1, and zero otherwise. Our coefficients of interest are  $g_{pk}$ , which represent each event's effect on the MNC portfolio's return relative to domestic-only firms. The number of observations (881) is the number of trading days between July 1, 2020 and December 31, 2023. Appendix A presents variable definitions.

To examine the effect of the Regulation changes on uncertainty, we study firms' implied volatility at each of our event dates. Implied volatility, measured daily, is a common forward-looking proxy for firms' fundamental uncertainty (Billings, Jennings, and Lev 2015; Hann, Kim, and Zheng 2019). We replace  $R_{pt}$  and  $R_{ct}$  in Equation (1) with measures of implied volatility computed using the OptionMetrics Standardized Options dataset.<sup>11</sup> We replace  $R_{pt}$  with  $IV_{pt}$ , the equal-weighted average of 30-day implied volatility for MNC sample firms on day  $t$ .<sup>12</sup> We replace  $R_{ct}$  with  $IV_{ct}$ , the equal-weighted average of 30-day implied volatility for control firm options in OptionMetrics on day  $t$ .

In addition to our full sample tests, we also conduct cross-sectional tests with returns and implied volatility as dependent variables. Notably, our cross-sectional tests focus only on MNCs

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<sup>11</sup> The OptionMetrics implied volatility data is only available through August 31, 2023. Our implied volatility tests therefore use only 798 observations for trading days between July 1, 2020 through August 31, 2023. Events 6 and 7 are not currently included in the implied volatility tests because they occur after the end of available OptionMetrics data. Also, our sample of firms is smaller for the implied volatility tests because not all firms have traded options.

<sup>12</sup> Before calculating portfolio-level measures, we calculate the implied volatility for each security-day as the average implied volatility for put and call options (e.g., Rogers, Skinner, and Van Buskirk 2009; Hann et al. 2019).

and exclude domestic firms. Specifically, in our cross-sectional analyses, we split MNCs into those more versus less likely to be affected by the Regulations, which we determine based on several separate firm attributes. We discuss the cross-sections in Section 5 below.

### **Descriptive Statistics**

Table 3 presents descriptive statistics for MNCs and domestic firms in our primary analyses. Column 1 (2) summarizes cumulative raw return for each event window for the MNC (domestic-only) firms. Descriptively, raw returns are generally higher for the MNC portfolio around event 7, consistent with H2a. We fail to find statistically significant univariate evidence for returns around other event dates. Measures of implied volatility for the MNC and domestic portfolios in Columns 4 and 5 suggest a more mixed picture of uncertainty around the event dates. While we find more evidence of statistically significant results, these measures do not consistently align with our expected direction for MNCs versus domestic-only firms. Because these are only univariate tests, however, we refrain from drawing conclusions until our MVRM results in the following section.

## **V. RESULTS**

### **Main Results**

Table 4 presents our primary results examining the market reaction to seven FTC Regulation events. Column 1 (2) shows abnormal stock returns (implied volatility) for a portfolio of MNCs relative to a portfolio of domestic firms. Because the Event 1 window overlaps with the U.S. presidential election on November 3, 2020, we are unable to draw clear conclusions regarding the initial FTC regulation proposal on November 2. However, we include this event date in the analysis for completeness. We observe a significant positive market response around Event 1 (0.11%,  $p = 0.012$ ), which is opposite of the expected direction, but likely incorporates confounding effects from the presidential election. We also observe increased implied volatility

(1.12%,  $p < 0.001$ ) at Event 1, consistent with heightened uncertainty. The finalization of the regulations on December 29, 2021 (Event 2) is not associated with significant abnormal returns; however, we observe reduced volatility (-1.38%,  $p < 0.001$ ), suggesting greater clarity for investors regarding the regulation's effects on MNCs. Together, these results suggest that uncertainty, rather than valuation, drove market responses to the introduction and finalization of the Regulations.

Subsequent events weakening or delaying the FTC Regulations display effects that are more consistent with our expectations. Technical corrections (July 26, 2022; Event 3) and proposed revisions (November 18, 2022; Event 4) are both associated with reduced implied volatility (-0.62%, -2.12%; both  $p < 0.001$ ), with the latter associated with a marginal return improvement (0.22%,  $p = 0.072$ ). A temporary waiver (July 21, 2023; Event 5) led to both a return increase (0.14%,  $p = 0.02$ ) and lower volatility (-1.51%,  $p < 0.001$ ). Lastly, the indefinite postponement (December 11, 2023; Event 7) produced the strongest positive return (0.76%,  $p = 0.001$ ), indicating investors clearly view the postponement as a positive development for MNCs.

Overall, events reversing FTC restrictions reduced uncertainty and, in most cases, increased firm value. We find some evidence that finalizing the Regulations also reduced uncertainty. These results partially reject the null H1b, partially support H2a, and are consistent with H2b, aligning with practitioner concerns focused more on uncertainty than the direct economic impact of FTCs.<sup>13</sup>

### **Cross-Sectional Tests**

Next, we perform cross-sectional tests among MNCs to examine the extent to which a market reaction concentrates among MNCs that we expect to experience greater consequences

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<sup>13</sup> In untabulated analyses for our main test and cross-sections, we also evaluate the combined market value effect for all events (either including or excluding Event 1). Across nearly all specifications, we find a positive aggregate effect. However, we urge caution in interpreting the aggregate effect for all events because Event 1 is confounded by the election.

from the FTC Regulation changes. First, we consider variation in MNCs' long-run tax avoidance. As shown in Appendix B related to GILTI, firms with lower (higher) tax rates are more (less) susceptible to the availability of FTCs. We calculate each MNC's 3-year cash effective tax rate (*Cash ETR*) for the last three fiscal years ending prior to February 2020, when the Covid-19 pandemic introduced a potentially interfering shock. We use firms in the lowest (highest) tercile of 3-year cash ETR as the treatment (control) portfolio variable in Equation (1). As shown in Table 5 Panel A, low Cash ETR firms exhibit stronger positive abnormal returns around rollback events (e.g., 0.47% for Event 4,  $p < 0.001$ ; 0.30% for Event 7,  $p < 0.001$ ) and consistent reductions in implied volatility, suggesting that firms with lower tax rates are more sensitive to FTC changes. Investors view the scaling back of the FTC Regulations as resolving more uncertainty for these firms.

Second, we consider the locations of MNCs' subsidiaries. Brazil's income tax was repeatedly singled out as losing eligibility for FTCs under the revised regulations, suggesting that firms with operations in Brazil may be more affected by the changes. After matching our sample of MNCs to Scott Dyreng's 2021 subsidiary location data, we use the 318 MNCs with at least one Brazil subsidiary as the treatment portfolio for the dependent variable in Equation (1).<sup>14</sup> The control portfolio consists of 657 MNCs with no Brazil subsidiaries. Panel B shows some positive return effects (e.g., 0.28% for Event 4,  $p < 0.001$ ) and consistent declines in implied volatility among events that scale back the FTC regulation changes, though effects are generally weaker than those based on cash ETR. As discussed earlier, Brazil ultimately changed its tax laws to ensure that U.S. MNCs would obtain FTCs under the Regulations. The somewhat weaker results in this cross-sectional analysis may arise from the market's anticipation of Brazil's law changes.

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<sup>14</sup> We thank Scott Dyreng for sharing this data. The number of MNCs comprising the portfolios for this cross-sectional test is smaller than the full number of MNCs in our sample because some firms are missing subsidiary location data.

Third, we identify MNCs more likely to be impacted by the FTC Regulations based on actions firms take related to the FTC. One such action is a letter sent to Treasury Secretary Yellen on June 3, 2022 by the chief financial officers of large U.S. firms, requesting that Treasury modify the final Regulations issued in December 2021. We match 20 of the 28 firms signing the letter to firms in our sample of publicly traded MNCs with non-missing variables. Because this is a relatively small group, we identify peer firms that face similar regulatory exposure as the signing firms using a regulatory similarity score from Chen and Kalmenovitz (2024).<sup>15</sup> Chen and Kalmenovitz (2024) develop a score based on text from the *Federal Register* that measures the similarity of a firm-pair's interactions with U.S. regulatory agencies on an annual basis. In addition to an overall regulatory similarity score, the authors score the similarity of 12 topics such as fiscal policy, which includes regulation related to taxation. For each of the firms signing the letter to Secretary Yellen, we select the ten peer firms with the highest fiscal policy similarity scores.<sup>16</sup> Our treatment firms for this cross-section therefore include 20 MNCs signing the letter to Treasury Secretary Yellen plus 36 firms that face similar tax regulatory exposure.<sup>17</sup> These treatment firms constitute the treatment portfolio for the dependent variable in Equation (1), while all other sample MNC firms make up the control portfolio. Panel C shows that firms signing the letter to Yellen and their peers exhibit positive returns around two rollback events (0.23% for Event 3,  $p < 0.001$ ; 0.28% for Event 4,  $p < 0.001$ ) and sharp declines in implied volatility relative to other MNCs for Events 3 through 5. Notably, these results concentrate in the uncertainty measures, suggesting that the letter-writing firms (and their peers) may also be more concerned about uncertainty than value.

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<sup>15</sup> We thank Jason Chen and Joseph Kalmenovitz for making their regulatory similarity scores publicly available at: <https://sites.google.com/view/jkalmenovitz/home>.

<sup>16</sup> Chen and Kalmenovitz (2024) primarily define “high regulatory similarity” with a focal firm as the top-ten peer firms with the highest similarity scores.

<sup>17</sup> Due to overlapping peer firms and attrition from missing variables, the number of peer firms is less than 200 (20 focal firms  $\times$  10 peer firms each).

Another action that suggests a firm is more affected by the Regulatory changes is lobbying related to the FTC, as expending resources on lobbying indicates that the FTC is consequential for the firm. We use LobbyView to identify firms in our MNC sample that engage in lobbying related to the FTC during the period from 2020 to 2023. As above, we also identify the ten peer firms with the highest fiscal policy similarity scores for each lobbying firm, using scores from Chen and Kalmenovitz (2024). Our resulting sample of treatment firms for the dependent variable in this cross-sectional test includes 14 MNCs that lobby related to the FTC, plus 55 peer firms that face similar tax regulatory exposure. The control portfolio consists of all other MNC sample firms. As shown in Panel D, lobbying firms and their peers experience stronger positive return reactions (e.g., 0.12% for Event 3,  $p < 0.001$ ; 0.21% for Event 4,  $p = 0.003$ ) and significant reductions in implied volatility across rollback events relative to other MNCs.

In addition to the cross-sectional tests tabulated in Table 5, we also test whether other subsamples of MNCs experience valuation and uncertainty effects around the FTC Regulation changes. Specifically, we test whether any effect is more concentrated among: MNCs with high foreign income relative to total income, MNCs with high permanently reinvested earnings (PRE), MNCs with subsidiaries in tax havens, MNCs with subsidiaries in countries that do not have a tax treaty with the U.S., MNCs with low foreign ETR and high foreign income, MNCs in industries more likely to have royalties such as life sciences and technology (which are expected to have larger GILTI exposures and needs for FTCs), and MNCs mentioning potentially affected taxes such as digital service taxes or withholding taxes in their 10-Ks. Results for these cross-sectional tests (untabulated) are generally mixed or statistically insignificant, failing to provide support for a strong effect among a wide array of subsamples where we expect to observe effects. While we

caution that failing to find evidence of effects does not necessarily indicate that no effect exists, it is important to note the lack of evidence in these subsamples.

Overall, market reactions concentrate among firms more exposed to FTC issues, particularly in terms of uncertainty reduction. Return effects are present but generally small and less consistent than volatility effects, reinforcing that the main impact of the FTC changes was through investor uncertainty rather than firm valuation. Thus, while we find some support for H2a (market value effects around Events 3-7), some evidence rejecting H1b (rejecting null effects for uncertainty around Event 2), and relatively consistent support for H2b in our tabulated tests (reduced uncertainty around Events 3-7), we emphasize that these effects likely relate to a relatively small subset of firms and did not materialize in several cross-sections where we expected results. Thus, while our evidence is consistent with the Regulations adding uncertainty and, to a lesser extent, affecting market value, these results apply to narrow sets of firms.

### **Additional Analyses**

In additional untabulated analyses, we use TAQ data to examine intraday trading for events that occurred during trading hours and for which precise timestamps are available (Events 1, 4, 5, and 6). This narrow-window analysis allows us to better isolate immediate market responses to the FTC regulation changes, minimizing the influence of unrelated news. We focus on a subset of firms that either lobbied on FTC-related issues or signed the June 2022 letter to Treasury Secretary Yellen, as these firms are most likely to be affected. Despite this targeted focus, we find limited evidence of significant price movements in the minutes around the event announcements. These muted intraday reactions suggest that investors either did not fully understand the implications of the Regulation changes or did not view them as material in the short run.

To further explore cases where investors are likely aware that FTCs are relevant and to isolate affected firms better, we identify firms that explicitly reference FTCs or related terms in

their 10-K filings, reasoning that disclosure of FTC-related risks or strategies might lead to greater investor attention or stronger market responses. Yet, similar to the results from the TAQ analysis, we observe little consistent evidence of abnormal returns for these firms around the key FTC events. Together, these findings highlight the difficulty investors face in interpreting complex and technical tax changes in real time. This is consistent with prior research documenting that tax disclosures are often underappreciated or misunderstood by market participants (Cutler 1988; Weber 2009) and further supports the conclusion that uncertainty – rather than clearly understood valuation impacts – was the dominant market concern related to the FTC Regulations.

## **VI. CONCLUSION**

This study examines the impact of changes to the U.S. foreign tax credit system, particularly through regulatory actions, on market perceptions of firm value and uncertainty. We examine seven regulatory events that either increase or relax restrictions on the creditability of foreign taxes. While we find little consistent evidence that announcements increasing FTC restrictions reduce firm value for affected firms, we find that events weakening or delaying the regulation changes typically reduce uncertainty and, in some cases, modestly increase firm value. These effects are concentrated among specific subsets of MNCs that are more likely to be affected, including those with low cash effective tax rates, Brazilian subsidiaries, or those engaging with policymakers.

Overall, our findings suggest that the FTC Regulations that we study primarily affect investor uncertainty rather than altering the valuation of most firms. These results are important for policymakers, suggesting that certain limits on FTCs may have limited effects on firm value but may increase uncertainty. Notably, rather than further restricting FTCs, the OBBBA expanded FTCs slightly, allowing a 90% credit against GILTI (now known as NCTI) tax, rather than the

previously allowed 80% credit. More broadly, our study highlights the complexity and opacity of international tax rules and the challenges they pose for investors attempting to assess tax-related regulatory risks.

## Appendix A: Variable Definitions

<b>Variable</b>	<b>Definition</b>
$R_{pt}$	Equal-weighted return on day $t$ for portfolio $p$ of treatment firms.
$R_{ct}$	Equal-weighted return on day $t$ for portfolio $c$ of control firms.
$IV_{pt}$	Equal-weighted average of 30-day implied volatility for treatment firms on day $t$ . Prior to calculating the portfolio-level average, we calculate the implied volatility for each security-day as the average implied volatility for put and call options.
$IV_{ct}$	Equal-weighted average of 30-day implied volatility for control firms on day $t$ . Prior to calculating the portfolio-level average, we calculate the implied volatility for each security-day as the average implied volatility for put and call options.
$D_{kt}$	Indicator variable which equals one for the two-day period $[0, 1]$ for each event $k$ , and zero otherwise

## Appendix B: Foreign Tax Credit Calculation Examples

First, we present an example of a GILTI computation, based on Duxbury, Grossberg, and Tokic (2025). We assume foreign income of \$1,100, a foreign tax rate of 10%, and average qualified foreign assets of \$1,500.

### Hypothetical GILTI Calculation

<b>Foreign Activity</b>			
Foreign Income	a		1,100
Foreign Tax Rate	b	10%	
Foreign Tax Due	$c = a * b$		110
Average Qualified Business Assets	d		1,500

### U.S. Computations

Net (or “Tested”) Income	$e = a - c$		990
10% of Average Foreign Assets	$f = d * 10\%$		150
GILTI before Section 78 Gross-up	$g = e - f$		840
GILTI Inclusion Percentage	$h = g / e$		84.8%
GILTI Section 78 Gross Up	$i = c * h$		93
GILTI	$j = g + i$		933
Statutory GILTI Deduction (50%)	$k = j * 50\%$		467
Taxable GILTI	$l = j - k$		466
U.S. Corporate Tax Rate	m	21%	
GILTI Tax before FTC	$n = l * m$		98
FTC (not to exceed the tax before FTC)	$o = i * 80\%$		74
<b>GILTI Tax</b>			<b>24</b>

The foreign activity arises from the actual activity and taxes at the foreign entity. The U.S. evaluates the after-tax income (\$990 here) relative to a statutory threshold of 10% of average foreign assets (\$150). Conceptually, the 10% return on assets is an allowable normal return; if the firm’s return on foreign assets is less than 10%, no GILTI is due, and, correspondingly, FTCs are irrelevant. The Section 78 Gross-up adjusts for the fact that GILTI is an after (foreign) tax amount. U.S. tax is imposed on pre-tax amounts. The gross-up is the amount of foreign taxes paid that the GILTI income carries with it (e.g., deemed paid foreign taxes on GILTI income) that become eligible for FTCs. Note that, as the foreign tax rate increases, the GILTI tax decreases. Thus, with higher foreign taxes, FTCs become *less* valuable because many of them are unusable. GILTI does not allow for carryforward of unused FTCs. There is a 50% deduction for GILTI, which effectively reduces the U.S. tax rate on GILTI from 21% to 10.5%. The FTC is 80% of the deemed paid taxes (i.e., the Section 78 gross-up).

Second, we present an example of the foreign tax credit calculation for other types of income. After TCJA, this calculation primarily applies to Subpart F income.

### Hypothetical FTC Calculation (non-GILTI)

<b>Foreign Activity</b>			
Foreign Income	a		1,000
Foreign Tax Rate	b	25%	
Foreign Tax Due	$c = a * b$		250
Foreign Net Income	$d = a - c$		750

### U.S. Computations

Subpart F Income (deemed taxable in the US)	$e = d * 50\%$	(assumption)	375
Section 78 Gross-up	$f = (e / [1 - b]) - e$		125
Total Subpart F Inclusion (pre-tax)	$g = e + f$		500
Foreign tax credit	$h = f, \text{ or } g * b$		125
U.S. Corporate Tax Rate	i	21%	
U.S. Tax on Subpart F Inclusion (FTC limit)	$j = g * i$		105
Maximum FTC available in current year	$k = \min (h, j)$		105
U.S. Tax Due on Subpart F income this year	$l = j - k$		0
FTC Carryover (back 1 year, forward 10 years)	$m = \max (0, h - k)$		20

The foreign activity arises from actual activity and taxes at the foreign entity. Assume that 50% of the foreign income is Subpart F income rather than GILTI income (Subpart F income includes income such as certain other income categories or “baskets”: general, passive, and foreign branch). The Section 78 Gross-up adjusts for the fact that the initially deemed taxable Subpart F income is an after (foreign) tax amount. U.S. tax is imposed on pre-tax amounts. The gross-up is the amount of foreign taxes paid that the Subpart F income carries with it (e.g., deemed paid foreign taxes on Subpart F income) that becomes eligible for FTCs. The FTC cannot exceed the U.S. tax that would be due on the pre-tax Subpart F inclusion. Any excess can be carried back 1 year or forward 10 years. For firms that have excess credits that carry forward, limits on FTCs will reduce the excess credits and force the firms to use their carryforward credits faster. Some firms may not have expected to use all their FTC credit carryforwards under the old rules, requiring a valuation allowance. The FTC limits may have caused some firms to change this expectation and remove the valuation allowance.

## Appendix C: Foreign Tax Credit Disclosure Examples

This appendix presents examples of disclosures in Forms 10-K and 10-Q regarding FTC Regulation changes. Emphasis added using **bold** passages.

### Johnson & Johnson

#### 10-K (Year Ending Jan 2, 2022)

- a. *Note 8 – Income Taxes*: “In December of fiscal year 2019 [calendar year 2020], the U.S. Treasury issued final foreign tax credit regulations, which resulted in the Company revising the amount of foreign tax credits that were initially recorded in the fiscal year 2017 as part of the provisional TCJA tax charge. **As a result, the Company recorded an increased deferred tax asset related to these foreign tax credits of approximately \$0.3 billion or 1.7% to the annual effective tax rate.** This benefit has been reflected as “TCJA and related impacts” on the Company’s effective tax rate reconciliation.”

#### 10-Q (Quarter Ending July 2, 2023)

- a. *Note 5 – Income Taxes*: “**On July 21, 2023, the IRS issued Notice 2023-55** which provides guidance to taxpayers in determining whether a foreign tax is eligible for a U.S. foreign tax credit for tax years 2022 and 2023, specifically delaying until 2024 the application of unfavorable foreign tax credit regulations that were originally issued late last year. **As a result of this new guidance, the Company has concluded that it is applicable to certain of its tax positions and therefore will record a tax benefit of approximately \$0.5 billion** in the fiscal third quarter of 2023.”

### Yum! Brands

#### 10-K (Year Ending December 31, 2021)

- a. *Note 21 – Subsequent Event*: “In January 2022, the U.S. Treasury published new regulations impacting foreign tax credit utilization beginning in the Company’s 2022 tax year. These regulations make foreign taxes paid to certain countries no longer creditable in the U.S. As discussed in Note 18, we currently have foreign tax credit carryforwards of \$187 million, on which there is a \$172 million valuation allowance. **We anticipate that these regulations will result in the utilization of some amount of our existing prior year foreign tax credit carryforwards and that a corresponding amount of the existing valuation allowance will be released in the first quarter of 2022.** While our determination of which foreign taxes that will no longer be creditable is not yet complete, we anticipate that the amount of valuation allowance to be released could be significant. **Further, we anticipate that these regulations will result in additional cash tax due in the U.S. in future years once all existing foreign tax credit carryforwards have either been utilized or have expired.** Subject to finalizing our review, we estimate we could be subject to incremental cash taxes as early as 2028.”

### **10-Q (Quarter Ending March 31, 2022)**

- a. *Note 6 – Income Taxes*: **“The decrease in our effective tax rate for the quarter ended March 31, 2022, as compared with the quarter ended March 31, 2021, is primarily due to an \$82 million tax benefit discretely recorded in the quarter ended March 31, 2022, from the release of a valuation allowance on foreign tax credit carryforwards.** In January 2022, the U.S. Treasury published new regulations impacting foreign tax credit utilization beginning in the Company’s 2022 tax year. These regulations make foreign taxes paid to certain countries no longer creditable in the U.S. Accordingly, we reversed a valuation allowance associated with existing foreign tax credit carryforwards that we now believe will be used to offset these now non-creditable taxes in 2022 and future years.”

### **10-Q (Quarter Ending March 31, 2022)**

- a. *Note 6 – Income Taxes*: “In January 2022, the U.S. Treasury published new regulations impacting foreign tax credit utilization beginning in the Company’s 2022 tax year. These regulations made foreign taxes paid to certain countries no longer creditable in the U.S., which was expected to result in additional foreign tax credit carryforward utilization prospectively. As a result, we reversed a valuation allowance associated with existing foreign tax credit carryforwards. This valuation allowance reversal resulted in a one-time discrete tax benefit of \$82 million in the quarter ended March 31, 2022. **The U.S. Treasury published clarifying guidance in November 2022 which resulted in foreign taxes originally determined to be non-creditable under the January 2022 regulations to now be treated as creditable taxes. As such, the valuation allowance on foreign tax credit carryforwards that was released in the quarter ended March 31, 2022, was re-established in the quarter ended December 31, 2022.**”

### **The Brinks Company**

#### **10-K (Year ending December 31, 2021)**

- a. *Note 25 – Subsequent Events*: “On January 4, 2022, the U.S. Treasury published in the Federal Register final foreign tax credit regulations. Among other changes and barring any tax treaty relief, the newly enacted regulations substantially overhaul longstanding foreign tax credit regulations involving the determination of creditable foreign taxes and may reduce the amount of foreign taxes that are likely to be creditable against U.S. income taxes under the U.S. Internal Revenue Code. Based upon a country-by-country analysis of the Company’s foreign withholding taxes, we expect that a portion of the Company’s post-2021 foreign withholding taxes will now be ineligible for U.S. income tax credit treatment under the new regulations. For foreign taxes that are now ineligible for the U.S. income tax credits under the new regulations, we expect that the Company should be able to deduct such foreign taxes on its U.S. income tax return. The Company is mainly impacted by certain withholding taxes levied by Latin American countries for services and royalty payments to Brink’s U.S.

If the Company is unable to receive sufficient foreign tax credits in the U.S. for prospective annual foreign taxes paid, including withholding taxes, the Company may begin to utilize a portion of its foreign tax credit carryforwards, which currently are subject to a valuation allowance. **Therefore, the Company is evaluating the possibility of releasing a portion of the valuation allowance on certain U.S. deferred tax assets related to the foreign tax credit carryforward attributes during the first quarter of 2022.** We are currently unable to estimate the impact.”

#### **10-Q (Quarter ending March 31, 2022)**

- a. *Note 5 – Income Taxes:* In the first quarter of 2022, we concluded that it is more likely than not that a substantial amount of the U.S. deferred tax assets for U.S. foreign tax credit and general business credit carryforwards that previously required a valuation allowance would be realized. Our conclusion was based upon an analysis of the final foreign tax credit regulations that the U.S. Treasury published in the Federal Register on January 4, 2022. **Based upon this analysis, we determined a significant amount of the post-2021 foreign withholding taxes will now be ineligible for U.S. foreign income tax credit treatment and therefore we are forecasting that our U.S. operations will no longer annually be generating new foreign tax credits in excess of its annual foreign tax credit utilization limit. As a result, we expect to be able to utilize a substantial amount of our foreign tax credit and general business tax credit carryforwards to offset future tax prior to their expiration. Accordingly, we reversed a substantial amount of our valuation allowance on our net U.S. deferred tax assets, resulting in a \$58.3 million benefit in our provision for income taxes. This benefit was recorded in the first quarter of 2022. Due to the novel approach that the final regulations impose, it is possible that further developments in foreign country or U.S. tax laws could occur and may require us to change our assessment of the ultimate amounts we consider more-likely-than-not to be realized.”**

#### **10-K (Year ending December 31, 2023)**

- a. *MD&A – Application of Critical Accounting Policies:* “In 2023, we concluded that we were not more-likely-than-not to realize assets related to certain attributes with a limited statutory carryforward, **and we recorded a \$33 million valuation allowance detriment through income from continuing operations and an additional \$1 million valuation allowance increase through other comprehensive income (loss).** Our conclusion was based upon **Internal Revenue Notices 2023-55 and 2023-80, both issued in 2023 (the "Notices"), which provide taxpayers relief in determining whether a foreign tax meets the definition of a foreign income tax** as required under final foreign tax credit regulations the U.S. Treasury published in the Federal Register on January 4, 2022. The Notices provide relief for foreign taxes paid in any taxable year beginning on or after December 28, 2021, and ending before the date that a notice or other guidance withdrawing or modifying the temporary relief is issued (or any later date specified in such notice or other guidance). **We determined a significant**

**amount of the post-2021 foreign withholding taxes will now be eligible for U.S. foreign income tax credit treatment and therefore our U.S. operations will annually be generating new foreign tax credits which should be creditable in the year generated. As a result, we no longer expect to be able to utilize a substantial amount of our foreign tax credit carryforwards to offset future tax prior to their expiration.”**

## Appendix D: Summary of Comment Letters on Proposed FTC Regulations, by Issue

Issue	Description	Comment Letter Issuers
Jurisdictional nexus requirements	Requiring a direct link between a foreign tax and local business activity would deny credits for legitimate foreign income, resulting in double taxation.	<ul style="list-style-type: none"> <li>• Jeffrey Cadet (01/18/2021)</li> <li>• U.S. Chamber of Commerce (02/05/2021)</li> <li>• Ivins Phillips &amp; Barker (02/08/2021; 05/23/2022; 06/22/2022)</li> <li>• Fenwick &amp; West LLP (02/08/2021)</li> <li>• United States Council for International Business (02/08/2021)</li> <li>• National Foreign Trade Council (02/09/2021)</li> <li>• Semiconductor Industry Association (02/09/2021)</li> <li>• Silicon Valley Tax Directors Group (02/09/2021)</li> <li>• Software Coalition (02/09/2021)</li> <li>• Alliance for Competitive Taxation (02/10/2021)</li> <li>• Securities Industry and Financial Markets Association (02/11/2021)</li> </ul>
Net gain and cost recovery requirements	Limits credits to taxes resembling the U.S. net income model and forces foreign countries to mirror U.S. tax deduction rules, which ignores how most countries structure their tax systems and increases double taxation risks.	<ul style="list-style-type: none"> <li>• U.S. Chamber of Commerce (02/05/2021)</li> <li>• Ivins Phillips &amp; Barker (02/08/2021)</li> <li>• United States Council for International Business (02/08/2021)</li> <li>• National Foreign Trade Council (02/09/2021)</li> <li>• Semiconductor Industry Association (02/09/2021)</li> <li>• Silicon Valley Tax Directors Group (02/09/2021)</li> <li>• National Association of Manufacturers (02/10/2021)</li> </ul>
Allocation and apportionment of foreign taxes	Using book value to allocate foreign taxes likely misrepresents how income is generated across jurisdictions.	<ul style="list-style-type: none"> <li>• United States Council for International Business (02/08/2021)</li> <li>• Semiconductor Industry Association (02/09/2021)</li> <li>• New York State Bar Association (02/09/2021)</li> </ul>

<b>Issue</b>	<b>Description</b>	<b>Comment Letter Issuers</b>
Allocation and apportionment of other expenses (R&E & Advertising)	Limiting deductions for advertising while fully allowing research costs is inconsistent with business practice.	<ul style="list-style-type: none"> <li>• New York State Bar Association (02/09/2021)</li> <li>• McDermott Will &amp; Emery (02/10/2021)</li> <li>• Alliance for Competitive Taxation (02/10/2021)</li> </ul>
OECD / U.S. GAAP / International Principles Alignment	Divergence from international norms, thereby disadvantaging domestic firms.	<ul style="list-style-type: none"> <li>• Baker &amp; McKenzie LLP (02/03/2021)</li> <li>• National Foreign Trade Council (02/09/2021)</li> <li>• Silicon Valley Tax Directors Group (02/09/2021)</li> </ul>
Elimination of “predominant character” / “normal circumstances” tests	Removing these standards would replace a more practical, substance-based approach.	<ul style="list-style-type: none"> <li>• U.S. Chamber of Commerce (02/05/2021)</li> <li>• Fenwick &amp; West LLP (02/08/2021)</li> <li>• National Association of Manufacturers (02/10/2021)</li> </ul>
Gross receipts requirement	Rejecting credits for gross receipts deviates from established practice and risks double taxation.	<ul style="list-style-type: none"> <li>• U.S. Chamber of Commerce (02/05/2021)</li> <li>• National Foreign Trade Council (02/09/2021)</li> <li>• National Association of Manufacturers (02/10/2021)</li> </ul>

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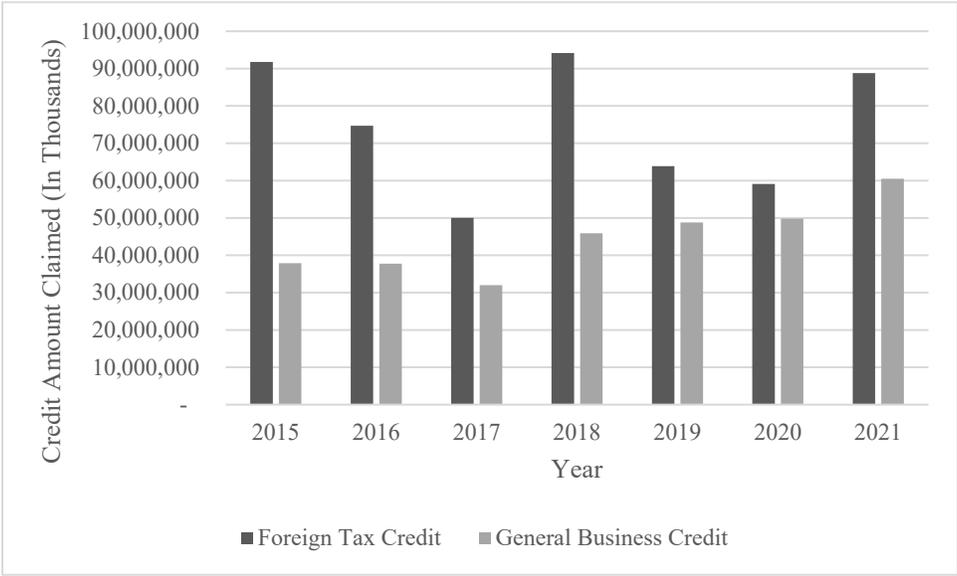
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**FIGURE 1**  
**Aggregate Claimed Foreign Tax Credit and General Business Credit**



This figure illustrates the aggregate amounts of foreign tax credits and general business credits (which includes R&D credits) claimed by C corporations each year from 2015-2021, based on data from the Internal Revenue Service Statistics of Income (SOI) Division.

**TABLE 1**  
**Event Dates**

Event No.	Event Date	Description	Predicted Stock Market Return Reaction for MNCs	Predicted Change in Uncertainty for MNCs
1	11/2/2020	(11:15 a.m. ET) Proposed Regulations issued, revising rules for determining creditable foreign taxes for FTC. The 2020 election on November 3 may interfere with predicted effects of the proposed Regulations.	-	+
2	12/29/2021	(After market) Final Regulations issued on 12/28/21 after market closure	-	?
3	7/26/2022	(Before market) Treasury Department issues technical corrections	+	-
4	11/18/2022	(11:15 a.m. ET) Additional proposed Regulations issued, relaxing the cost recovery requirement	+	-
5	7/21/2023	(Around 12:19 p.m. ET) IRS issues Notice 2023-55, allowing relief period for 2022 and 2023	+	-
6	9/13/2023	(10:45 a.m. - 12:15 p.m. ET) IRS announces it anticipates extending the relief period from Notice 2023-55 to 2024	+	-
7	12/11/2023	(Before market) IRS issues Notice 2023-80, indefinitely extending Notice 2023-55	+	-

**TABLE 2**  
**Sample Selection**

<b>Criteria</b>	<b>Firms</b>
Intersection of CRSP and Compustat firms with Share Code 10 or 11 with return data between July 2020 - December 2023	4,570
Less:	
Firms missing variables to determine MNC status	(552)
Firms that are switch between domestic and MNC during sample period	(288)
Firms with total assets less than \$10 million for any years in the sample	(212)
Firms announcing earnings on day prior to (over weekend for Monday events), day of, or day after event	(586)
Firms with share price less than \$5 on day prior to any of the event dates	(1,168)
<b>Total Firms</b>	<b>1,764</b>

Table 2 depicts the process for selecting sample firms. The final sample of 1,764 firms consists of 1,243 MNC firms and 521 domestic-only firms.

**TABLE 3**  
**Descriptive Statistics**

Event	Cumulative Raw Return: Days [0,1]			Average Implied Volatility (30-day): Days [0,1]		
	(1)	(2)	(3)	(4)	(5)	(6)
	MNC Firms	Domestic-Only Firms	Difference	MNC Firms	Domestic-Only Firms	Difference
1	0.045	0.041	0.004	0.581	0.665	-0.084***
2	0.004	0.005	-0.001	0.442	0.551	-0.109***
3	0.014	0.013	0.001	0.575	0.677	-0.102***
4	-0.003	-0.007	0.004	0.510	0.627	-0.117***
5	-0.001	-0.003	0.002	0.464	0.574	-0.110***
6	0.005	0.005	0.000	n/a	n/a	n/a
7	0.004	-0.010	0.014***	n/a	n/a	n/a
Number of firms	1,243	521		1,159	385	

Table 3 presents descriptive statistics for the variables used in our baseline sample of multinational and domestic firms. Columns 4 and 5 do not present data for the last two events because OptionMetrics data ends in August 2023, prior to those event dates. Also, Columns 4 and 5 have fewer firms because not all firms have traded options. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% significance level, respectively.

**TABLE 4**  
**Market Reaction to FTC Regulation Changes**

	(1)			(2)		
<b>Dependent Variable</b>	<i>MNC Equal-Weighted Portfolio Return (<math>R_{pt}</math>)</i>			<i>MNC Equal- Weighted Portfolio Implied Volatility (<math>IV_{pt}</math>)</i>		
<b>Control Variable</b>	<i>Domestic Equal- Weighted Portfolio Return (<math>R_{ct}</math>)</i>			<i>Domestic Equal- Weighted Portfolio Implied Volatility (<math>IV_{ct}</math>)</i>		
	<b>Pred.</b>			<b>Pred.</b>		
<i>EVENT 1</i>	-	0.0011	**	+	0.0112	***
		(0.0118)			(0.0001)	
<i>EVENT 2</i>	-	-0.0008		?	-0.0138	***
		(0.1826)			(<0.0001)	
<i>EVENT 3</i>	+	0.0002		-	-0.0062	***
		(0.9608)			(<0.0001)	
<i>EVENT 4</i>	+	0.0022	*	-	-0.0212	***
		(0.0721)			(<0.0001)	
<i>EVENT 5</i>	+	0.0014	**	-	-0.0151	***
		(0.0219)			(<0.0001)	
<i>EVENT 6</i>	+	0.0006				
		(0.4631)				
<i>EVENT 7</i>	+	0.0076	***			
		(0.0010)				
N		881			798	
Adjusted R <sup>2</sup>		92.6%			90.8%	

Table 4 presents the multivariate estimates from Equation (1) using our baseline sample of MNC and domestic-only portfolios, covering 881 (798) trading-day observations in Column 1 (2). Column 2 has fewer trading-day observations because OptionMetrics data ends in August 2023. All variables are defined in Appendix A. Huber-White robust standard errors are used to control for heteroscedasticity and serial correlation. Two-sided p-values are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% significance level, respectively.

**TABLE 5**  
**Cross-Sectional Tests**

**Panel A: Impact of FTC Regulations by Pre-Regulation Tax Avoidance Levels**

<b>Measure</b>	<b>(1)</b>			<b>(2)</b>		
		<i>Return</i>		<i>Implied Volatility</i>		
<b>Treatment Group</b>		<i>Bottom Tercile 3-year Cash ETR</i>		<i>Bottom Tercile 3-year Cash ETR</i>		
<b>Control Group</b>		<i>Top Tercile 3-year Cash ETR</i>		<i>Top Tercile 3-year Cash ETR</i>		
	<b>Pred.</b>			<b>Pred.</b>		
<i>EVENT 1</i>	-	0.0014 ** (0.0312)		+	0.0171 *** (<0.0001)	
<i>EVENT 2</i>	-	0.0001 (0.9526)		?	-0.0042 * (0.0656)	
<i>EVENT 3</i>	+	0.0012 *** (0.0005)		-	-0.0112 *** (<0.0001)	
<i>EVENT 4</i>	+	0.0047 *** (<0.0001)		-	-0.0061 ** (0.0405)	
<i>EVENT 5</i>	+	-0.0002 (0.8172)		-	-0.0084 * (0.0926)	
<i>EVENT 6</i>	+	0.0019 * (0.0790)				
<i>EVENT 7</i>	+	0.0030 *** (<0.0001)				
N		881			798	
Adjusted R <sup>2</sup>		90.5%			95.9%	

**Table 5 (Continued)**

**Panel B: Impact of FTC Regulations by Presence of Brazilian Subsidiaries**

<b>Measure</b>	<b>(1)</b>		<b>(2)</b>	
	<i>Return</i>		<i>Implied Volatility</i>	
<b>Treatment Group</b>	<i>At least one Brazil sub</i>		<i>At least one Brazil sub</i>	
<b>Control Group</b>	<b>Pred.</b>	<i>No Brazil subs</i>	<b>Pred.</b>	<i>No Brazil subs</i>
<i>EVENT 1</i>	-	0.0035 (0.2461)	+	0.0069 *** ( <i>&lt;0.0001</i> )
<i>EVENT 2</i>	-	-0.0009 (0.6740)	?	0.0028 *** (0.0009)
<i>EVENT 3</i>	+	0.0013 * (0.0524)	-	-0.0031 (0.2314)
<i>EVENT 4</i>	+	0.0028 *** ( <i>&lt;0.0001</i> )	-	-0.0069 *** (0.0022)
<i>EVENT 5</i>	+	0.0001 (0.8797)	-	-0.0031 *** ( <i>&lt;0.0001</i> )
<i>EVENT 6</i>	+	0.0008 (0.4659)		
<i>EVENT 7</i>	+	-0.0010 (0.1019)		
N		881		798
Adjusted R <sup>2</sup>		91.8%		97.1%

**Table 5 (Continued)**

**Panel C: Impact of FTC Regulations by Requests for Regulatory Relief**

<b>Measure</b>	<b>(1)</b>		<b>(2)</b>	
	<i>Return</i>		<i>Implied Volatility</i>	
<b>Treatment Group</b>	<i>Firms signing 6/3/22 letter to Yellen + top 10 peer firms</i>		<i>Firms signing 6/3/22 letter to Yellen + top 10 peer firms</i>	
<b>Control Group</b>	<b>Pred.</b>	<i>All other MNCs</i>	<b>Pred.</b>	<i>All other MNCs</i>
<i>EVENT 1</i>	-	0.0052 (0.3170)	+	0.0183 *** (<0.0001)
<i>EVENT 2</i>	-	-0.0012 (0.5754)	?	-0.0160 *** (<0.0001)
<i>EVENT 3</i>	+	0.0023 *** (<0.0001)	-	-0.0248 *** (<0.0001)
<i>EVENT 4</i>	+	0.0028 *** (<0.0001)	-	-0.0099 *** (0.0017)
<i>EVENT 5</i>	+	0.0018 (0.1317)	-	-0.0241 *** (<0.0001)
<i>EVENT 6</i>	+	0.0000 (0.9851)		
<i>EVENT 7</i>	+	0.0027 (0.3237)		
N		881		798
Adjusted R <sup>2</sup>		80.9%		90.9%

**Table 5 (Continued)**

**Panel D: Impact of FTC Regulations by Lobbying on FTC-Related Topics**

<b>Measure</b>	<b>(1)</b>			<b>(2)</b>		
	<i>Return</i>			<i>Implied Volatility</i>		
<b>Treatment Group</b>	<i>Firms that lobby on FTC + top 10 peer firms</i>			<i>Firms that lobby on FTC + top 10 peer firms</i>		
<b>Control Group</b>	<b>Pred.</b>	<i>All other MNCs</i>		<b>Pred.</b>	<i>All other MNCs</i>	
<i>EVENT 1</i>	-	0.0060	**	+	0.0161	***
		(0.0265)			(<0.0001)	
<i>EVENT 2</i>	-	-0.0014		?	-0.0131	***
		(0.6709)			(<0.0001)	
<i>EVENT 3</i>	+	0.0012	***	-	-0.0109	**
		(0.0003)			(0.0473)	
<i>EVENT 4</i>	+	0.0021	***	-	-0.0107	***
		(0.0029)			(<0.0001)	
<i>EVENT 5</i>	+	0.0019		-	-0.0183	***
		(0.4522)			(<0.0001)	
<i>EVENT 6</i>	+	0.0027	***			
		(<0.0001)				
<i>EVENT 7</i>	+	0.0027				
		(0.1647)				
N		881			798	
Adjusted R <sup>2</sup>		82.2%			92.7%	

Table 5 presents the results from the cross-sectional analyses. Panel A compares a treatment group of bottom tercile Cash ETR MNCs to a control group of top tercile Cash ETR MNCs. Panel B compares a treatment group of MNCs with at least one Brazilian subsidiary to a control group of MNCs with no Brazilian subsidiaries. Panel C compares a treatment group of MNCs that signed the June 3, 2022 letter to Secretary Yellen and their top 10 peer firms to a control group of all other MNCs in our sample. Panel D compares a treatment group of MNCs that lobby on foreign tax credit-related issues and their top 10 peer firms to a control group of all other MNCs in our sample. All variables are defined in Appendix A. Huber-White robust standard errors are used to control for heteroscedasticity and serial correlation. Two-sided p-values are in parentheses. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% significance level, respectively.