Conflicting Transfer Pricing Incentives and the Role of Coordination

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Abstract: Our study tests the effects of conflicting income tax and customs duty incentives on the transfer pricing behavior of multinational firms with intrafirm trade. We find that when duties are large and duty-related transfer pricing incentives conflict with income tax transfer pricing incentives, firms focus less on income tax minimization when setting transfer prices. Although the average foreign affiliate facing significantly conflicted incentives incurs increased income tax payments, we estimate that these additional taxes are more than offset by decreased duty payments. Additionally, we find that the presence of a coordinated income tax and customs enforcement regime and corporate coordination in setting transfer prices both further decrease firms’ focus on income tax minimization. Our study highlights the importance of coordination in firms’ tax reporting behavior.

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1. **Introduction**

“Transfer pricing is both a corporate tax and a customs valuation issue” (KPMG (2007)) because the transfer prices set on intrafirm trade – i.e., trade that occurs within a firm – simultaneously affect a firm’s income tax and customs duty obligations. As a result, firms face a complicated optimization problem when the objectives of minimizing both income taxes and customs duties are incompatible using a single price (transfer pricing incentives “conflict”).\(^1\) Our study examines the relation between income tax rates and profitability to infer the extent to which income taxes influence transfer pricing policies differentially across firms that do and do not face conflicting transfer pricing incentives. Our novel finding is that when firms cannot set a single transfer price that minimizes both tax payments, their transfer pricing policies appear less (more) influenced by income taxes (customs duties) and that coordination within governments and coordination within firms further increase the use of such transfer pricing policies.

The notion that the allocation of profits among members of an affiliated group – which is directly affected by the transfer prices set on intrafirm trade – is sensitive to income tax rates is evident across several academic literatures including accounting, finance, and economics. The role of customs duties on transfer prices has been less studied, and customs duties and income taxes are rarely studied together, though their tax bases are linked.\(^2\) The potential for both income taxes and customs duties to influence transfer pricing policies is most relevant in the context of international trade in goods, and Clausing (2003) reports that approximately 40 percent of all U.S. international trade in tangible goods is intrafirm.

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\(^1\) A customs duty is a trade tax imposed on the declared value of imported goods. A firm reduces customs duties by *understating* the purchase price, but reduces income taxes by *overstating* the purchase price if the related party sale originates in a low-income-tax country or terminates in a high-income-tax country. See Section 2.3.

\(^2\) To provide some perspective on the economic importance of customs duties, OECD (2010) reports that tax revenue from i) customs duties and ii) corporate profits, as a percent of total tax revenue, are 3 and 8 percent, respectively. These figures include all OECD countries and cover the time period 1965 through 2008. Interestingly, although duty payments provide over a third of the total tax revenue that income taxes provide, the empirical transfer pricing literature is nearly void of analyses of customs duties.
Although the interaction between prices set on related party transactions for income tax and customs purposes has gained little academic attention, it was the subject of two major recent conferences. Held in 2006 and 2007, and jointly organized by the World Customs Organization (WCO) and the Organization for Economic Cooperation and Development (OECD), these conferences drew customs and tax authorities from around the world, as well as members of the international trade community. Interest in the joint role that transfer prices play in income tax and duty minimization is increasing due to the growing importance of cross-border intrafirm trade, governments’ need to enhance and preserve their tax revenues, and firms’ desire for more certainty regarding their tax positions (Ping and Silberzstein [2008]).

We contribute to the academic literature by undertaking an empirical analysis of transfer pricing behavior that considers firms’ incentives to minimize the sum of income taxes and duties. Using data from confidential and mandatory surveys of U.S. multinational firms conducted by the Bureau of Economic Analysis (BEA), we identify foreign affiliates that engage in intrafirm trade in tangible goods with their U.S. parent. Using information on the direction of U.S. parent-affiliate net trade and proxies for the relevant income tax rates and customs duty rates, we parse our sample of foreign affiliates into two groups: (i) those where transfer prices that decrease income taxes increase customs duties (incentives “conflict”), and (ii) those where a single set of transfer prices can minimize both income taxes and customs duties (incentives do not conflict).

First, we examine whether firms alter their income-tax-motivated transfer pricing when incentives conflict by ascertaining whether an empirical model traditionally used to detect income-tax-motivated transfer pricing does so differentially across the two groups of affiliates. Unless firms report inconsistent, or “decoupled”, transfer prices to income tax and customs authorities, firms with conflicting incentives should reduce their income-tax-motivated transfer
pricing relative to firms without conflicting incentives, because the former group reduces income taxes only by paying greater customs duties. Second, we analyze the role of coordination in establishing transfer prices across firms’ income tax and customs functions when a single set of prices cannot minimize both taxes. We anticipate that greater coordination within governments or coordination within firms should further reduce these firms’ tendencies to use transfer pricing policies that seek solely to minimize income taxes.

In the absence of governmental coordination of income tax and customs audits, firms with conflicting incentives can reduce the aggregate income tax and duty burden for parent-affiliate trade by reporting decoupled prices. However, relatively more coordinated enforcement regimes should increase firms’ real or perceived audit risk from doing so, making them less likely to use decoupled transfer prices. If firms that face conflicting incentives respond to government coordination by altering their income tax transfer price to be more consistent with the customs transfer price (i.e., reduce decoupling) then these firms’ transfer pricing behavior should appear to be less myopically focused on income tax minimization. However, if these firms do not rely on decoupled prices, then government coordination should have no effect on their transfer pricing activity.

We also consider corporate coordination of the income tax and customs functions within the firm. Relatively more coordinated firms are likely to have a better understanding of whether their intra-firm trade results in conflicting transfer pricing incentives and are more likely to have information systems in place to solve the aggregate tax minimization optimization problem. There are effectively two ways in which corporate coordination can impact the transfer pricing

3 Customs duties can be significant. In contrast to income taxes, duty rates are applied to the gross price of the purchased goods (rather than profit) and the transfer pricing cost or benefit relates to the actual duty rate (rather than the rate differential between countries). In our empirical analyses, we incorporate an estimate of the magnitude of the duty rate, relative to the income tax rate differential, in identifying the existence of a transfer pricing conflict.

4 According to OECD and WTO guidelines, transfer prices used for customs and income taxes do not need to be identical to be consistent.
policies of firms with conflicting incentives. First, if firms tend to use decoupled prices, we believe that relatively more coordinated firms should move away from this practice as they better understand the aggregate audit risk associated with decoupling. Second, if firms do not rely on decoupled prices, then relatively more coordinated firms should reduce fixation on income tax minimization as they are more likely to focus on reducing the aggregate tax burden associated with parent-affiliate trade (the sum of income taxes and duties).\(^5\)

Overall, our findings are consistent with firms setting transfer prices to reduce aggregate tax payments on parent-affiliate trade. In the absence of conflicting incentives, firms in our sample report more income in affiliates located in low-income-tax countries and less income in affiliates located in high-income-tax countries, consistent with prior income-tax-motivated transfer pricing studies. However, we also find that in the presence of conflicting incentives, firms report less income in affiliates located in low-income-tax countries and more income in affiliates located in high-income-tax countries. The latter finding is novel in the transfer pricing literature, as this transfer pricing behavior increases income tax payments. However, this does not imply irrationality because setting transfer prices in this manner decreases customs duties for a firm facing conflicting incentives.

Our result – suggesting that firms set transfer prices to minimize aggregate tax payments – is strongest when the potential cost associated with raising the transfer price (suggested by the duty rate), relative to the potential benefit (suggested by the difference in the affiliate’s and parent’s income tax rate), is high. We estimate that the average firm denoted in our sample as facing significant conflicting incentives saves $1.60 in customs duties for every $1 paid in income taxes, resulting in net tax savings of two percent of shifted income. Our paper joins work such as

\(^5\) We try to determine which of these two channels is stronger in Section 5.3.3 and conclude that both are operative in our sample.
Desai, Foley and Hines (2004) and Robinson (2012) in demonstrating that other taxes are salient in a setting where income tax is nearly always the focus,

Consistent with governmental coordination decreasing firms’ use of decoupled transfer prices, we find that, when incentives conflict, our measures of governmental coordination are associated with less income-tax motivated transfer pricing. Our finding that governmental coordination of transfer pricing enforcement influences firm behavior also provides evidence that some firms decouple income tax and custom duty transfer prices. This result suggests that the tax benefits from decoupling often offset the potential costs of any increased audit risks. Consistent with corporate coordination either decreasing the use of decoupled transfer prices or reducing firms’ income-tax transfer pricing myopia, we find that, when incentives conflict, our proxies for corporate coordination are also associated with less income-tax-focused transfer pricing. Our finding that within firm coordination influences transfer pricing suggests that without coordination, firms face either greater audit risks or higher aggregate tax burdens. Although other conflicting transfer pricing objectives have been examined theoretically (e.g., Baldenius, Melumad and Reichelstein (2004)), ours is the first empirical analysis of this issue.

Section 2 provides background, Section 3 develops hypotheses, Section 4 outlines the data, Section 5 describes the research design and empirical results, and Section 6 concludes.

2. Institutional Background and Relevant Literature

2.1. Income Tax Transfer Pricing

The operations of multinational firms entail numerous transactions between affiliated entities located in different jurisdictions but within the same controlled group. The prices attached to these transactions are known as “transfer prices.” Transfer pricing guidelines for income tax
reporting are established by the OECD, and most countries have adopted some form of these regulations. Known as the “arm’s length principle”, valuation for income tax is required to be established using prices that would have been realized if the parties were unrelated.

There is an extensive literature that studies transfer pricing motivated by income tax minimization. This literature recognizes that it is generally advantageous for firms to avoid reporting income in affiliates located in high-income-tax jurisdictions and to instead report income in affiliates located in low-income-tax jurisdictions. Empirical studies typically rely on statistical relations between tax rates and profitability (or trade prices, which affect profitability) to provide evidence consistent with income-tax motivated transfer pricing (see Hines (1997); U.S. Treasury (2007)). For instance, studies document a negative association between income tax rates and profitability, (e.g., Klassen, Lang, and Wolfson (1993), Grubert and Mutti (1991), Hines and Rice (1994)) or income tax rates and trade prices (e.g., Clausing (2003), depending on the type of data available to the researcher, suggesting that transfer prices are influenced by income tax considerations. Clausing (2003) does not examine firm-level incentives or consider customs duties, but her study suggests that income-tax-motivated transfer pricing is an important consideration in intrafirm trade in goods.

2.2. CUSTOMS DUTY TRANSFER PRICING

As customs duties are levied on the transaction price, transfer prices will also affect the amount of customs duty paid. While transfer pricing guidelines are established by the OECD, customs valuation methods are established by the WTO. Like income tax transfer pricing regulations, prices for customs duty reporting are also required to be "arm’s length."

Swenson (2001) examines customs values of certain U.S. imports from five countries and finds evidence consistent with transfer pricing incentives created by income taxes and customs
Bernard, Jensen and Schott (2006) examine U.S. export prices and find that lower prices are set for goods exported to countries with higher import duty rates. However, if the export is destined for a country with a relatively higher income tax rate and firms overprice exports to high-income-tax countries, as established by Clausing (2003), it is not clear how the competing objective of minimizing both income taxes and customs duties would be resolved within a firm.  

Conflicting transfer pricing objectives have been studied theoretically and in a different context. Specifically, Baldenius, Melumad and Reichelstein (2004) examine competing tax and managerial incentives, highlighting that when joint optimization cannot be achieved with a single coordinated transfer price, a firm may desire to decouple its transfer prices. However, in our setting, both prices are reported to and verified by a party external to the firm – the government – making it more costly to decouple prices.

2.3. CONFLICTING INCENTIVES BETWEEN INCOME TAX AND CUSTOMS DUTY TRANSFER PRICING

A simple model of income shifting involves a multinational firm earning income in affiliates located in jurisdictions that impose different income tax rates. In such a setting, the objective is generally to locate as much income in low-income-tax jurisdictions as can be sustained under

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6 Swenson (2001) computes a transfer pricing incentive variable that combines income tax and duty rates for various products imported into the U.S. As the data used in her study for 1981 to 1988 include non-intrafirm trade, imports by entities with foreign parents, and are at the product-level, she cannot examine firm-level incentives, and thus does not explore the transfer pricing optimization problem relevant to firms that face conflicting incentives or the role of coordination in that optimization problem, which are the focus of our study.

7 Though there are currently few countries in the world with tax rates higher than the U.S., our study examines transfer pricing behavior during the time period 1982 through 2005, when many countries’ tax rates were higher than the U.S.. Furthermore, while our study is conducted in the context of U.S. multinationals, the implications of our study are relevant for multinational firms based in other countries that are engaging in intrafirm trade, many of which may currently face higher tax rates outside their jurisdiction.

8 The potential for decoupling transfer prices (either intentionally or unintentionally) distinguishes our study from the literature that examines “tax-nontax tradeoffs” more generally. For instance, there is a large literature that examines the tradeoff between realizing tax benefits and potential nontax financial reporting costs of reporting lower earnings (see Hanlon and Heitzman (2010)). In contrast, in our setting, the firm’s benefit is the government’s cost, while the firm’s cost is the government’s benefit. Therefore, while decoupling their transfer prices would minimize the tax burden of the firm, the government has an incentive to force firms to coordinate their transfer prices in order to limit the revenue loss from decoupling and the firm has a competing incentive to coordinate in order to limit the audit risk from decoupling. Thus, our paper also introduces an interesting coordination issue both within firms and within governments. As we discuss in Section 5, our empirical analysis sheds some light on the extent to which it is costly for firms to decouple transfer prices for duty and income tax minimization.
scrutiny by tax authorities. Either overstating related-party revenues or understating related-party expenses in affiliates located in low-income-tax jurisdictions increases income recognized in the low-income-tax jurisdiction and lowers the worldwide income tax burden of the firm. Thus, when the foreign tax rate, $t_f$, is less than the U.S. tax rate, $t_{US}$, income can be shifted into the low-income-tax foreign jurisdiction from the U.S. by the foreign affiliate selling goods to its U.S. parent at a high price or purchasing goods from its U.S. parent at a low price. Alternatively, when $t_f > t_{US}$, income can be shifted into the U.S. by the foreign affiliate selling goods to its U.S. parent at a low price or purchasing goods from its U.S. parent at a high price.

The transfer price also influences the customs value, which is the tax base to which a duty rate is applied. The lower the transfer price, the lower the customs value and the applicable duty payment. Thus, in contrast to income taxes, customs duties unambiguously create incentives to understate the transfer price because the purchaser will incur a smaller duty payment on lower values.\(^9\) In addition, duty rates are applied to the *gross* price of the purchased goods (rather than profit) and the transfer pricing cost or benefit relates to the actual duty rate (rather than the rate differential between countries).

Suppose a foreign affiliate faces a customs duty imposed at a rate, $Duty_f$, on imports from its U.S. parent. Understating the cost of the goods by $1 will reduce the actual customs duty by $1 \times Duty_f$. Thus, in the absence of income tax minimization objectives, a lower purchase price should always be preferred to a higher price if $Duty_f > 0$. Furthermore, the duty payment is

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\(^9\) Our focus is on import duties (paid in the host country of the purchaser) because export duties (paid in the host country of the seller) provide only $1/10^{th}$ of one percent of total tax revenue in OECD countries and are, more generally, immaterial in global trade (OECD (2010)). Import duties, on the other hand, represent 3 percent, on average, of total tax revenue in OECD countries (OECD (2010)).
The transfer pricing incentives created by income taxes and customs duties conflict in two cases: for high-income-tax foreign affiliate importers and for low-income-tax foreign affiliate exporters. Figure 1 below summarizes the discussion above.

**Figure 1: Transfer Pricing Incentives to Minimize Income Tax (I) or Customs Duty (C) and the Anticipated Effect on Reported Income**

<table>
<thead>
<tr>
<th>Foreign affiliate is:</th>
<th>High-income-tax ((t_f &gt; t_{US}))</th>
<th>Low-income-tax ((t_f &lt; t_{US}))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Importer</strong></td>
<td>(I) Conflict</td>
<td>(II) No Conflict</td>
</tr>
<tr>
<td></td>
<td>I: High Price, Income ↓</td>
<td>I: Low Price, Income ↑</td>
</tr>
<tr>
<td></td>
<td>C: Low Price, Income ↑</td>
<td>C: Low Price, Income ↑</td>
</tr>
<tr>
<td><strong>Exporter</strong></td>
<td>(III) No Conflict</td>
<td>(IV) Conflict</td>
</tr>
<tr>
<td></td>
<td>I: Low Price, Income ↓</td>
<td>I: High Price, Income ↑</td>
</tr>
<tr>
<td></td>
<td>C: Low Price, Income ↓</td>
<td>C: Low Price, Income ↓</td>
</tr>
</tbody>
</table>

Traditional transfer pricing studies document a negative relation between income tax rates and profitability in the full sample of foreign affiliates represented by Figure 1, and conclude that transfer prices are influenced by income tax considerations. This result is consistent with the arrows on the “I” lines shown in quadrants (I) through (IV) of Figure 1, whereby more income is anticipated in low-income-tax jurisdictions and less income is anticipated in high-income-tax jurisdictions. This inverse relation between income and tax rates is expected without regard to the direction of intrafirm trade (i.e., importer versus exporter).

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10 When the U.S. parent faces a duty payment on imports from its foreign affiliates, the total cost of the duty paid in the U.S. is \(D_{US} \times (1-t_{US})\).

11 The effect of duty payments on income-tax-motivated transfer pricing incentives depends critically on two things. First, the sign of the income tax rate differential, \((t_f - t_{US})\), between the trading partners (i.e., the U.S. parent and its foreign affiliate) determines whether the income tax minimization incentive is to overstate or understate income in the foreign jurisdiction. Second, the direction of trade determines whether opportunities to shift the income tax base via intrafirm trade are available through the sale price or the purchase price. We provide a further discussion of these incentives in the Appendix.
However, when the duty and income tax transfer pricing incentives conflict, the relation between income tax rates and profitability is ambiguous. Note the arrows on the “C” lines shown in quadrants (I) and (IV) are of the opposite direction of the “I” arrows. For a firm that seeks to set transfer prices that minimize its duty payments, the “C” arrows imply that more income is anticipated in affiliates located in high-income-tax jurisdictions and less income is anticipated in affiliates located in low-income-tax jurisdictions.

In the conflict quadrants of Figure 1, a single transfer price cannot achieve both customs duty minimization and income tax minimization. The firm will incur additional customs duties when shifting income out of a high-income-tax importer because shifting income requires the firm to increase the transfer price at which goods are purchased, which increases the custom duty. Similarly, the firm will incur additional customs duties when shifting income into a low-income-tax exporter, because to shift income the firm must increase the transfer price at which goods are sold, which again increases the customs duty.

One option for a firm facing conflicting incentives in this setting is to decouple transfer prices, thereby minimizing both income taxes and customs duties by reporting separate prices to the relevant authorities with the hope that inconsistent transfer pricing polices go undiscovered. However, as decoupling prices introduces additional costs, such as increased audit risk, firms may be reluctant to decouple prices and therefore must trade-off minimizing income taxes against minimizing customs duties.

2.4. ANECDOTAL EVIDENCE

Although virtually all transfer pricing disputes are resolved short of litigation, we identify a representative anecdote in the public domain to further motivate the issues that we examine in
this study. Coca-Cola SL (Spain), a wholly-owned foreign subsidiary of Coca-Cola in the U.S., was a distributor of imported concentrate manufactured by related party foreign affiliates (in Ireland and France). Coca-Cola Spain paid both import duties (on imported concentrate) and income taxes to the Spanish government. The income tax rate faced by Coca-Cola Spain was higher than that faced by its related party affiliates, who benefited from temporary tax holidays in their jurisdictions. To minimize customs duties, Coca-Cola’s incentive was to set the transfer price low, whereas to minimize income taxes Coca-Cola’s incentive was to set the transfer price high. In our study, we designate this firm as having “conflicting transfer pricing incentives.”

The Spanish customs authority ultimately challenged the transfer price set by Coca-Cola Spain for imported concentrate by adjusting it upwards. Coca-Cola conceded the adjustment for customs purposes, which had the effect of increasing its customs duty obligations to Spain. To offset the increased duty, Coca-Cola used the new, higher, price for income tax purposes, thereby shifting income out of high-income-tax Spain and lowering its income tax obligation. This suggests that the initial transfer price was set to minimize customs duties rather than income taxes; Coca-Cola initially reported more income in high-income-tax Spain to reduce its duties on imported concentrate.

Although the income tax authority in Spain initially opposed Coca-Cola’s new (higher) transfer price because it reduced taxable income reported in Spain, the Supreme Court in Spain

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12 See Resolution of Supreme Court (TS) December 11, 2009 (RJ210/1324). Any case documents we reference were obtained from Westlaw and are published in Spanish. We enlisted a Spanish attorney to help us determine the relevant facts and circumstances of the case. The Spanish documents are available upon request.

13 There is subjectivity inherent in the appropriate customs value of an import because certain items form a part of the value of the imported merchandise (on which duties are assessed), but may not necessarily be reflected in the invoiced transfer price. Customs authorities call these items “assists.” In this case, Coca-Cola Spain (the distributor) provided production design plans and sketches to its foreign affiliates (the manufacturers) free of charge. Spanish duties are assessed on the invoiced transfer price of the goods, plus the value of the services provided by Coca-Cola Spain. Customs takes the position that if the services were not provided to a foreign jurisdiction, the design would have been purchased or made in the foreign jurisdiction and the additional costs incurred would have been passed on to the Spanish importer as part of the invoiced transfer price.
supported the higher transfer price for income tax purposes on the basis that the price was approved by the Spanish customs authority. This case is particularly interesting because it subsequently influenced how the Spanish government conducts audits. Recently, Spain formally moved to conducting joint customs and income tax audits of large taxpayers. Thus, this case also demonstrates the relevance of our governmental coordination analysis.

3. **Hypothesis Development**

While prior literature finds evidence that income tax and duty considerations influence transfer pricing of related-party, multi-jurisdictional trade in tangible goods, the literature has not addressed the effect of conflicting transfer pricing incentives. We develop a set of hypotheses aimed at understanding the role of conflicting transfer pricing incentives and the role of coordination in shaping transfer pricing decisions in the presence of a conflict.

3.1 **CONFLICTING TRANSFER PRICING INCENTIVES**

Assuming that firms report one transfer price for income tax and duty reporting, if the conflict sample (represented by the shaded portion of the sample of foreign affiliates in Figure 1) is concerned with both income tax and duty minimization, then we expect to see a different relation between income tax rates and profitability in this group of affiliates, relative to the group that does not face conflicting incentives. Accordingly, our first hypothesis is as follows:

\[ H_1: \text{Firms are less likely to engage in income-tax-motivated transfer pricing when income tax and customs duty transfer pricing incentives conflict.} \]

Firms with conflicting incentives should reduce their income-tax-motivated transfer pricing relative to firms without conflicting incentives, because the former group reduces income taxes only by paying greater customs duties. The decoupling of income tax and duty transfer prices...
should attenuate any association between conflicting transfer pricing incentives and measures of income-tax-motivated transfer pricing.

3.2 EFFECT OF COORDINATION ON CONFLICTING TRANSFER PRICING INCENTIVES

We next investigate whether cross-sectional variation in coordination affects firms’ transfer pricing behavior in the presence of conflicting incentives. To ascertain whether coordination affects the transfer pricing behavior of these firms, we identify two important aspects of coordination that we expect to matter in our setting: i) coordination of tax enforcement of related party transfer prices within governments (governmental coordination), and ii) coordination of transfer pricing decisions within firms (corporate coordination).

3.2.1 GOVERNMENTAL COORDINATION

Coordination in the administration and enforcement of revenue and customs should increase firms’ real or perceived cost of decoupling transfer prices set for customs and income taxes. For example, OECD (2010) notes that customs valuations can be useful to income tax administrators, and vice versa. Customs officials have contemporaneous information regarding transactions that is relevant for transfer pricing purposes, especially if prepared by the taxpayer, while income tax authorities often have transfer pricing documentation which provides detailed information on the circumstance of the transactions. We expect that coordination in enforcement is more likely to reveal firms’ attempts to decouple prices thereby increasing the likelihood that firms use consistent transfer prices.

The 2008 E&Y survey reports that 33 percent of parent company respondents that have undergone a transfer pricing or customs audit were aware of an information exchange between income tax and customs authorities. Furthermore, 19 percent of the parent company respondents have had their customs transfer pricing challenged based on their income tax transfer pricing for
the same goods, or vice versa, with responses greater than 30 percent in some countries. These statistics confirm that integration of enforcement should decrease firms’ ability to use inconsistent transfer pricing methodologies for customs and income tax purposes because the price reported to one administrative body is known to the other administrative body.

To the extent that firms facing conflicting incentives set transfer prices to minimize total tax payments rather than to solely minimize income taxes, we anticipate that income-tax-motivated transfer pricing will be less likely to occur in the presence of governmental coordination, as this should raise the expected cost of decoupling transfer prices. If, however, firms with conflicting incentive already report consistent prices, then governmental coordination should not further influence the transfer pricing behavior of these firms. Our second hypothesis is stated as follows:

**H2A:** Firms facing conflicting income tax and customs duty transfer pricing incentives exhibit less income-tax-motivated transfer pricing when governmental enforcement of transfer prices for income tax and customs duty purposes is more likely to be coordinated.

### 3.2.2 CORPORATE COORDINATION

We argue that relatively more coordinated firms are likely to have a better understanding of whether their intra-firm trade results in conflicting transfer pricing incentives and are more likely to have information systems in place to solve the aggregate tax minimization optimization problem. Thus, assuming that reporting decoupled transfer prices is costly, relatively greater coordination in setting transfer prices should encourage firms to use consistent (i.e., not decoupled) transfer prices that minimize total taxes.

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14 Due to our data and research design, our ability to infer reduced decoupling by firms requires that firms move their income tax transfer prices towards a price that would instead minimize duties rather than income taxes. Alternatively if firms reduced decoupling by moving their customs price towards a price that would instead minimize income taxes rather than duties, this would be consistent with reduced decoupling, but we would not observe it. Thus, finding evidence in support of H2A would suggest that duty minimization is relatively more important than income tax minimization in our sample.
The 2005 Tax Executives Institute (TEI) survey and the 2008 Ernst & Young (E&Y) survey provide evidence on the extent to which firms coordinate income tax and customs valuations. The tax department claims responsibility for transfer pricing for income tax purposes in 81 percent of TEI survey respondent firms, but only 17 percent claim responsibility for customs. Roughly half (48 percent) of firms surveyed by E&Y said that the person responsible for transfer pricing for income taxes has input into setting prices for customs purposes. This is consistent with relatively few tax directors viewing customs duties as the most important tax issue they face (E&Y [2008]). While there appears to be cross-sectional variation in whether there is joint oversight of customs duties and income taxes within an organization, other companies jointly manage their exposure to both income tax and customs authorities with the help of professional advisors (KPMG [2007]).

To the extent that decoupling is expected to be costly and firms facing conflicting incentives set transfer prices to minimize total tax payments, rather than to minimize income taxes, we expect that income-tax-motivated transfer pricing will be less likely to occur in the presence of corporate coordination. Thus, our third hypothesis is stated as follows:

\[ H_{2b}: \text{Firms facing conflicting income tax and customs duty transfer pricing incentives exhibit less income-tax-motivated transfer pricing when corporate transfer pricing decisions for income tax and customs duty purposes are more likely to be coordinated.} \]

4. **Sample and Variable Measurement**

4.1 **Sample**

We study transfer pricing behavior of U.S. multinational firms using Bureau of Economic Analysis (BEA) *Annual and Benchmark Surveys of U.S. Direct Investment Abroad*. Beginning in 1982, federal law obligates U.S. multinational firms to report certain financial and operating data for both domestic and foreign operations to the BEA each year. A U.S. multinational is the
combination of a single U.S. entity, called the U.S. parent, and at least one foreign affiliate in which the U.S. parent holds, directly or indirectly, at least a 10 percent equity interest. The amount of data collected by the BEA varies by year and depends on whether the affiliate meets the applicable reporting threshold.\footnote{15}{In order to reduce the reporting burden, the BEA only requires affiliates to participate in its surveys if its assets, sales, or net income (loss) exceed the threshold for the year. The thresholds are lower in benchmark years (i.e., 1982, 1989, 1994, 1999, and 2004) requiring more affiliates to report. For example thresholds are $7 million in 1999, $30 million in 2000-2003, and $10 million in 2004. See Mataloni (2003) and http://www.bea.gov/surveys/diadurv.htm for detailed information on BEA data.}

The BEA data allow us to observe classified income statements and balance sheets for foreign affiliates that include important items for our analysis, such as income tax expense, net income, total assets, and total employee compensation. The financial data are reported on a fiscal year basis, in U.S. dollars, and in accordance with U.S. Generally Accepted Accounting Principles (GAAP). We also observe other key information such as trade in goods between each affiliate and its U.S. parent and each affiliate’s country location and industry membership.\footnote{16}{Reference to the “U.S. parent” describes data collected for the domestic operations only.}

Table 1 Panel A details our final sample selection of 55,893 foreign-affiliate-year observations. We begin with 226,365 affiliate-year observations in the period 1982 through 2005 that provide all of the required variables for our study. We first exclude entities that may not face incentives created by the U.S. corporate income tax system by eliminating foreign-controlled U.S. subsidiaries, non-corporate affiliates of corporate U.S. parents, and non-corporate U.S. parents (and their affiliates). We exclude banking and insurance entities, and holding company affiliates (i.e., NAICS 5512 and SIC 671) for two reasons. First, these entities do not conduct the type of import and export activity we are interested in examining. Second, as these types of entities generate little nonfinancial income, the model of expected (i.e., un-shifted) income as a function of labor and capital that we rely on in our empirical tests is not well specified for them.

(Insert Table 1 about here)
We follow the extant transfer pricing literature and exclude unprofitable affiliates and unprofitable U.S. parents (and their affiliates) because the income shifting incentives for entities with losses are less clear (e.g., Blouin, Robinson and Seidman (2011); Power and Silverstein (2007)). As customs duties are central to our study, we delete affiliates that we cannot classify as either a net importer or a net exporter with its U.S. parent. Lastly, we exclude observations missing gross domestic product information. The final sample for our main tests consists of 55,893 affiliate-year observations over 2,418 U.S. parents and 16,744 of their foreign affiliates for a 23-year period. In tests of the effect of governmental coordination, we lose 5,379 affiliate-year observations because some countries represented in our sample did not participate in the OECD survey from which we draw the measures of government-level coordination.

Table 1 Panel B illustrates that an overwhelming majority of foreign affiliates in our final sample operate in the chemical (18 percent), durables (29 percent), or retail (32 percent) industries. The chemical industry faces customs duties on such products as fertilizers, soaps, and cosmetics. Products incurring duties in the durable goods industry include home appliances, consumer electronics, furniture, sports equipment, and toys. Finally, the retail industry faces duties on a wide range of products such as clothing, shoes, and handbags. Duty rates are assessed on very specific products definitions such that products that seem very similar often face wildly disparate rates. Consider the Toy Biz v. U.S. International Trade Case (Court Number 96-10-02291) where customs authorities argued that X-Men action figures were “Dolls representing human beings” subject to a 12 percent duty rate. Toy Biz, on the other hand, argued that the

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17 As a practical matter, the dependent variable in our basic regressions (described first in Section 4.2.5) is the log of foreign affiliate pre-tax income and the natural log of a negative number is not defined.
18 See Section 4.2.1 for a discussion of our reasoning for this classification.
19 Consider that duty rates on sweaters are determined by their material: acrylic or synthetics 32.5 percent, cotton 17.1 percent, cashmere 4.4 percent, silk 1.4 percent.
action figures were “Other toys” subject to a 6.8 percent duty rate. As evidenced by such cases heard in international trade courts, firms actively attempt to minimize duty payments in practice.

4.2 VARIABLE MEASUREMENT

4.2.1 IMPORTER/EXPORTER

The BEA data contain information on the dollar amount and direction of intrafirm trade in goods between the U.S. parent and its foreign affiliates. To capture firms that face meaningful income tax and customs duty incentives when setting transfer prices, our analysis focuses exclusively on a sample of foreign affiliates that engage in intrafirm trade in goods with their U.S. parent. We classify a foreign affiliate that primarily purchases goods from its U.S. parent as an importer (i.e., Importer set equal to 1). Alternatively, we classify an affiliate that primarily sells goods to its U.S. parent as an exporter. We delete affiliates from our sample that do not trade in goods in at least one direction with their U.S. parent, or affiliates where trade is not significantly larger in one direction than the other.

4.2.2 INCOME TAX TRANSFER PRICING INCENTIVES

The standard measure of income tax transfer pricing (ITPI) incentives in the literature is the tax rate differential between two affiliated entities in different jurisdictions. We measure $t_f$ as the ratio of foreign affiliate income tax expense to the foreign affiliate pre-tax income. We measure

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20 The court ultimately ruled that mutants were not human.
21 We cannot observe intrafirm trade in goods among foreign affiliates, but rather only intrafirm trade between foreign affiliates and their U.S. parents.
22 While most affiliates either import from or export to their U.S. parent, some do both. The combined income tax and duty transfer pricing incentives of such an affiliate are ambiguous (i.e., import transactions will conflict whereas export transactions will not, or vice versa). See Figure 1. Therefore, in such instances, we classify an affiliate as an importer (exporter) only if its imports (exports) are more than twice its exports (imports).
23 If $t_f < 0$ or $t_f > 1$, we set $t_f$ equal to the statutory tax rate in the affiliate’s country-year. Our results are not sensitive to bounding $t_f$ for these affiliates at 0 and 1, or deleting them from the sample. These observations represent 2.3 percent of our total sample.
$t_{US}$ as the maximum corporate statutory rate in effect each year of our sample period.\textsuperscript{24} If $t_t > t_{US}$, then $ITPI > 0$ (i.e., High-Income-Tax is equal to 1). Throughout our study, we rely on $ITPI$ in tests for income-tax-motivated transfer pricing.

### 4.2.3 Conflicting Transfer Pricing Incentives

As Figure 1, introduced in Section 2.3, shows, transfer pricing incentives conflict for high-income-tax importers and low-income-tax exporters. Accordingly, we set Conflict equal to 1 when both Importer and High-Income-Tax are equal to 1 (quadrant I), and when both Importer and High-Income-Tax are equal to 0 (quadrant IV). For all other affiliates, Conflict is equal to 0.

While our Conflict indicator variable identifies instances where transfer pricing conflicts potentially arise, the existence of a conflict alone may not be significant enough to alter transfer pricing behavior. For instance, if a firm with a conflict anticipates significant income tax savings and a trivial increase in duty payments from shifting income, the conflict is not likely to be of sufficient magnitude to impact transfer pricing behavior. Therefore, we create three additional indicator variables to capture relatively strong conflicting incentives. Conflict\textsuperscript{25}, Conflict\textsuperscript{50}, and Conflict\textsuperscript{75} are equal to 1 if Conflict is equal to 1 and the after-income-tax duty rate is greater than 25, 50, and 75 percent, respectively, of the income tax incentive ($|ITPI|$).

We do not observe the specific product mix composition of each affiliate in our data; rather we observe the amount and direction of intrafirm trade. Therefore, we measure Duty as the average duty rate in each country-year, as reported by the World Bank.\textsuperscript{26} For affiliate exporters –

\textsuperscript{24} The BEA survey forms do not capture U.S. income tax expense for domestic operations in 10 of the 23 years in our sample period. In periods when the data are available, the mean and median U.S. effective tax rate calculated using BEA data approximate the U.S. statutory rate and the use of calculated U.S. rates, when available, do not change our inferences.

\textsuperscript{25} We measure expected duty payments net of the income tax benefit (i.e., Duty $\times (1 - t)$) because duty payments are deductible. Thus, the income tax benefit from the deduction reduces the burden of the duty payment.

\textsuperscript{26} Pierce and Schott (2009) report more than 20,000 classifications for goods imported into the U.S., each with a different duty rate. This large number of classifications is common. The World Bank calculates “average” duty rates...
foreign affiliates exporting goods to the U.S. parent – we measure the expected after-income-tax duty rate on shifted income as $D_{US} \times (1 - t_{US})$. For affiliate importers – foreign affiliates importing goods from the U.S. parent – the expected after-income-tax duty rate on shifted income equals $D_{i} \times (1 - t_{i})$. This approach reflects that the firm’s duty on intrafirm trade is paid and deducted in the country of the purchaser.

4.2.4 COORDINATION

4.2.4.1 GOVERNMENTAL-LEVEL (GOV’T-COORDINATION)

We rely on two country-level measures of governmental coordination from OECD (2006, 2009). One_Authority and One_Audit are indicator variables that capture whether the governments’ monitoring of firms’ income tax returns and customs duty declarations is relatively more coordinated.\footnote{We characterize the tax administration variables in reference to the country of import rather than the country of the export in order to characterize the appropriate side of the transaction for which we expect tax administration to matter. Thus, the tax administration variables are set to the U.S. values for all foreign affiliates that export to the U.S. parent (because the U.S. parent is the importer) and are set to the values applicable to the affiliate’s country of location for all foreign affiliates that import from the U.S. parent.} One_Authority is equal to 1 when a country has formally aligned its income tax and customs administration by bringing them within a single management structure. One_Audit is equal to 1 when integrated audits of taxpayers are the primary organization model for tax audits, as opposed to separate audits by tax type.\footnote{One_Authority is intended to capture formal integration (e.g., organizational structure), whereas One_Audit captures informal integration (i.e., organizational processes). Either formal or informal integration should increase the probability of detection for a taxpayer using inconsistent transfer prices for income taxes and customs.} Governmental departments that operate in an integrated fashion are more likely to share information, which in turn increases the

for a country-year by weighting duty rates in effect by a normal basket of goods imported into that country. While the normal basket may not correspond with the basket of traded goods in our sample of affiliates, we expect they are highly correlated. We also recognize that duty rates are bilateral in nature if trade agreements reduce or eliminate the duty rate on imports from certain countries. An important trade agreement is the North American Free Trade Agreement (NAFTA), which phases out duty rates on trade occurring between the U.S., Canada, and Mexico over a 15-year period beginning in 1995. Although we cannot identify the effect of NAFTA on our sample specifically, we set Duty equal to zero for trade occurring between these countries after 1995 and our results are not materially affected.

\footnote{We characterize the tax administration variables in reference to the country of import rather than the country of the export in order to characterize the appropriate side of the transaction for which we expect tax administration to matter. Thus, the tax administration variables are set to the U.S. values for all foreign affiliates that export to the U.S. parent (because the U.S. parent is the importer) and are set to the values applicable to the affiliate’s country of location for all foreign affiliates that import from the U.S. parent.}
audit risk arising when firms report inconsistent transfer prices to minimize both income taxes and duties on intrafirm trade.

4.2.4.2 Corporate-Level (Corp-Coordination)

It is difficult to measure the extent to which a firm’s tax planning coordinated, so we rely on multiple affiliate-level and firm-level proxies for corporate coordination. Consistent with Halperin and Srinidhi (1991), centralized decision making facilitates coordination of competing objectives within the firm. We draw two affiliate-level proxies for centralized decision making from Robinson and Stocken (2012), who find evidence consistent with affiliates using the U.S. dollar functional currency as having relatively less autonomy (i.e., decision rights are primarily located in the U.S. headquarters). They also find that U.S. expatriates are more prevalent in these affiliates. Centralized and Expat are indicator variables equal to 1 if the affiliate uses the U.S. dollar as its functional currency or employs a U.S. expatriate, respectively.

We also identify three firm-level proxies for the likely extent of coordination between the income tax and duty function within an organization: Private, TradeDum, and SizeDum. Our first measure, Private, is motivated by our expectation that private firms are less likely to myopically focus on minimizing the firm’s effective tax rate (ETR). As customs duties are not included in the numerator of ETR, duty minimization does not decrease the ETR. Because private firms are likely focusing more on the cash flow, rather than earnings, implications of tax planning, we believe that they are more likely to coordinate customs duties and income tax planning. For instance, Armstrong, Blouin, and Larcker (2012) and Robinson, Sikes, and Weaver (2010) find that tax departments of public companies are rewarded for lowering the firm’s effective tax rate
(ETR), through income-tax-motivated transfer pricing, for example.\textsuperscript{29} Therefore, Private is equal to 1 when the firms’ equity is privately owned. Our second measure, TradeDum, is motivated by our expectation that when international trade is relatively significant to the firm as a whole, the firm will be more likely to coordinate its income tax and duty function. Thus, TradeDum equals 1 if either the ratio of total U.S. exports to total U.S. sales or the ratio of total U.S. imports to total U.S. sales is above the median of the sample distribution. Our third measure, SizeDum, is motivated by our expectation that the ability to coordinate the income tax and customs function within the firm would decrease in firm size. For instance, TEI (2005) reports that a significantly greater proportion of smaller firms incorporate the income tax function into the firm’s Enterprise Resource Planning system, which would also be used by the customs function. Therefore, SizeDum equals 1 if logFirmAssets, the natural log of firm total assets, is below the median of the sample distribution.

4.2.5 Other Variables

As described in Section 5.1, we rely on Hines and Rice (1994) who outline a model to detect income-tax motivated transfer pricing in affiliate-level or country-level data. In their model, the natural log of pre-tax profitability, logPTI, is expressed as a function of the natural log of real input measures – total assets, logAssets, and total employee compensation, logComp. The natural log of gross domestic product, logGDP, controls for cross-country differences in technology or factor qualities that may affect productivity.

4.3 Descriptive Statistics

Table 2 provides descriptive statistics for our sample and regression variables. The median foreign affiliate in our sample reports pre-tax income, assets, and compensation of $4,4, $37,4,

\textsuperscript{29} As customs duties are not included in the numerator of ETR, duty minimization does not decrease the ETR. As public firms often devote more time and resources to tax planning (TEI (2005)) they may alternatively be more likely to invest in outside professionals that effectively coordinate the income tax and duty functions.
and $6.6 million, respectively, and is located in a relatively developed country (median GDP of $550 million). The mean value of ITPI is -0.023, suggesting that the average income tax transfer pricing incentive in our sample is to shift income out of the U.S. and into a low-income-tax foreign affiliate. However, 45 percent of affiliates in our sample are considered high-income-tax relative to their U.S. parent. While this percentage may seem large given the statutory tax rates in effect today, the U.S. was relatively low-income-tax in the 1980’s when statutory tax rates in much of the world were higher.\textsuperscript{30} We observe a nearly-monotonic downward trend in relative tax rates in our data beginning in the late 1980’s: in 1988, 65.6 percent of the sample is high-income-tax relative to the U.S. but by 2005 only 29.7 percent of the sample faces relatively high income tax.

(Insert Table 2 about here)

The mean value of Conflict is 0.499 indicating that approximately half of the affiliates in our sample face conflicting transfer pricing incentives. Mean values of Conflict25, Conflict50, and Conflict75 indicate that 32, 23 and 18 percent, respectively, of the sample face an economically meaningful conflict and face a duty rate on intrafirm trade that is greater than 25, 50, and 75 percent of the income tax transfer pricing incentive. As our measures of conflict consider the level of Duty relative to ITPI, a firm where Conflict25 = 1 does not necessarily face a high absolute customs duty but rather a high customs duty relative to the income tax differential. For example, the median Duty (ITPI) for firms where Conflict25 = 1 is 4.7 percent (3.8 percent), while the median Duty (ITPI) for firms where Conflict75 = 1 is 5.2 percent (2.2 percent), respectively. Therefore, duty rates are increasing in the absolute size of the income tax differential in our “conflict” sample. The average duty rate in our sample is 5.3 percent.

\textsuperscript{30} Despite the low foreign tax rates in effect today, relative to the U.S., note that our study has broad implications for international trade occurring between any two countries facing different income tax rates, not just the U.S. and foreign countries, to which our dataset restricts our attention.
To provide a sense for the economic magnitude of duty payments in our sample, we describe (untabulated) statistics for both the level of duty and income tax payments, as well as the ratio of duty payments to income taxes. We estimate aggregate duty payments made by foreign affiliates in our sample by multiplying, for each country-year, the dollar value of imports or exports by our World Bank measure of duty rates. The mean (median) estimated duty payment is $76.3 million ($5.9 million) per year. We observe a mean (median) income tax payment of $199.6 million ($27.9 million) per year in the BEA data. The mean (median) country ratio of duty payments to income tax payments over our sample period is 2.2 (0.4), and ranges from 0.002 at the 5th percentile to 7.923 at the 95th percentile. Of the 115 countries in our sample, those that rank high both in terms of the level of duty payments and the ratio of duties to income taxes are China, Malaysia, Thailand, Taiwan, Venezuela, Argentina, and Korea.

Our measures of Gov’t-Coordination indicate that approximately 29 percent of the sample faces formal integration of the customs and revenue tax authorities (One_Authority), while 62 percent face informal integration through the audit process (One_Audit). Consistent with a significant amount of autonomy granted to foreign affiliates, only 22 percent use the U.S. dollar as their functional currency (Centralized), and only 17 percent employ a U.S. expatriate (Expat). Approximately 17 percent of affiliates in our sample are owned by private U.S. parents.

5. Tests of Hypotheses and Discussion of Results

5.1 BASELINE – INCOME TAX INCENTIVES ONLY

5.1.1 BASELINE – EMPIRICAL SPECIFICATION

To demonstrate behavior in our sample consistent with existing income tax transfer pricing studies, we first estimate a model developed by Hines and Rice (1994) and used in numerous studies to detect income-tax-motivated transfer pricing (most recently, Huizinga and Laeven...
(2008) and Markle (2012)). Specifically, we estimate foreign affiliate-level OLS regressions of Equation (1) as follows:

\[
\log PTI = \beta_0 + \beta_1 ITPI + \beta_2 \log \text{Assets} + \beta_3 \log \text{Comp} + \beta_4 \log \text{GDP} + \text{Industry, Year Indicators}
\]

Where,

- \( \log PTI \) = natural log of affiliate pre-tax income\(^{31} \)
- \( ITPI \) = income tax transfer pricing incentive = \((t_f - t_{\text{US}})\)
- \( \log \text{Assets} \) = natural log of affiliate total assets\(^{32} \)
- \( \log \text{Comp} \) = natural log of affiliate total employee compensation
- \( \log \text{GDP} \) = natural log of per capita income of the affiliate’s country

A negative coefficient on \( \beta_1 \) suggests higher than expected profitability in affiliates located in relatively low-income-tax countries and lower than expected profitability in affiliates located in relatively high-income-tax countries, consistent with income taxes influencing transfer pricing decisions.

5.1.2 Baseline – Result

In Table 3 column (1) we report a coefficient of -0.542 on \( \beta_1 \), consistent with prior literature and in line with Huizinga and Laeven (2008) who report a coefficient of -0.595 in a similar specification. Our estimate indicates that a one percentage point lower foreign tax rate, \textit{ceteris paribus}, raises foreign affiliate profitability by 0.54 percent, on average.\(^{33} \)

31 While gross margin may more directly capture fluctuation in profits due to transfer prices set on intrafirm trade, the BEA data do not provide sufficient income statement detail to measure gross margin. Thus, we follow prior literature in using pre-tax income.

32 The proxy for capital used in Hines and Rice (1994) is fixed assets, rather than total assets. However, we use total assets because this variable is reported more consistently than fixed assets in our data, allowing us to use a larger sample and longer time period. Inferences obtained from estimating Equation (1) are unchanged when we substitute fixed assets for total assets using a smaller sample.

33 When we estimate Equation (1) in the sample of 77,855 affiliates we drop from our study because they do not engage in intrafirm trade in goods with their U.S. parent (see Table 1), the coefficient on \( ITPI \) is -0.936 (\( p < 0.01 \)). This implies a sensitivity of income to tax rates nearly twice that observed in our sample. We conjecture that our sample appears to have relatively limited opportunities to shift income as compared to firms with higher levels of “migratory” intangibles. Prior research that includes such affiliates also estimate larger coefficients on the income tax incentive variable; e.g., Hines and Rice (1994) estimate a coefficient of -2.83 in a sample including many tax haven affiliates. However, our sample allows us to observe the joint optimization problem introduced by conflicting incentives created by different taxes and the role of coordination in tax minimization.
foreign affiliate pre-tax income \((0.54 \times -0.033)\). The coefficient on \(\log GDP\) reflects the net effect of economic development on profitability. For instance, higher profitability might materialize in developed countries due to more advanced technology, or alternatively, profitability could be negatively impacted if firms require higher returns in less developed countries to compensate for risks associated with less effective property rights and regulations. As in Huizinga and Laeven (2008), \(\log GDP\) enters the regression negatively, suggesting that the latter effect is stronger.

5.2 \(H_1\) – Conflicting Transfer Pricing Incentives

5.2.1 \(H_1\) – Empirical Specification

We test our first hypothesis – that greater potential duty obligations alter firms’ income tax motivated transfer pricing incentives – by incorporating the presence of conflicting transfer pricing incentives into Equation (1) and testing for an interaction effect between \(ITPI\) and our measure of conflict. If firms cannot costlessly decouple the prices reported to income tax and customs authorities, then we anticipate that the negative relation between pre-tax income and \(ITPI\) will be attenuated when income tax and duty minimization incentives conflict. Specifically, we estimate affiliate-level OLS regressions of Equation (2) as follows:

\[
\log PTI = \beta_0 + \beta_1 ITPI + \beta_2 Conflict + \beta_3 ITPI \times Conflict + \beta_4 \log Assets \\
+ \beta_5 \log Comp + \beta_6 \log GDP + \text{Industry, Year Indicators} 
\]  

(2)

Where,

\(Conflict\) = 1 if transfer pricing incentives created by income taxes and customs duties conflict, 0 otherwise (i.e., \(Conflict25, Conflict50, Conflict75\))

All other variables are as defined above for Equation (1).

We continue to expect a negative coefficient on \(\beta_1\) consistent with income taxes influencing transfer pricing decisions of firms that do not have conflicting incentives. A positive coefficient on \(\beta_3\) is consistent with \(H_1\) and suggests that firms facing conflicting transfer pricing incentives
engage in less income-tax-motivated transfer pricing. An insignificant coefficient on $\beta_3$ suggests either that conflicting incentives do not alter transfer pricing behavior, or that it is costless for firms to decouple their income tax and duty transfer prices.

5.2.2 $H_1$—RESULT

Table 3, Columns (2) through (4), report results from estimating Equation (2). In all cases, we continue to observe a negative relation between pre-tax income and $ITPI$ for the non-conflict observations. However, we estimate a positive relation between pre-tax income and $ITPI$ for the conflict observations ($\beta_1+\beta_3>0; \ p<.01$), implying that firms instead shift less (more) income into affiliates with low (high) income tax rates. This is consistent with firms responding to incentives to minimize duties when setting transfer prices.

Recall that we identify conflict observations by requiring the duty rate to be considerable relative to the income tax differential such that these observations have strong incentives to consider duty payments.\textsuperscript{34} For example, in Column (2) Duty (after-tax) is greater than 25 percent of $|ITPI|$ (e.g., $Conflict25 = 1$). Thus, as conflict observations with larger values of $ITPI$ will therefore also have higher Duty rates, the slope on $ITPI$ changes as the significance of duties increase. We tabulate results using $Conflict25$, $Conflict50$, and $Conflict75$ to highlight the slope difference on $ITPI$ as the significance of the transfer pricing conflict increases.\textsuperscript{35}

(Insert Table 3 here)

\textsuperscript{34} Untabulated results indicate that when a conflict exists but is less economically significant, firms only slightly alter their income-tax-motivated transfer prices. For instance, the coefficient on $Conflict \times ITPI$ in Equation (2) is positive and significant if we define $Conflict$ as low as two percent of $ITPI$. However, the magnitude of the coefficient is smaller ($\beta_3 = 0.165$) so the overall slope on $ITPI$ (-0.872+0.165) for the conflict observations remains negative and significant ($\beta_1+\beta_3<0; \ p<.01$). This illustrates that duty minimization dominates only when the expected duty payments relative to income tax savings are significant. We use $Conflict25$ to test for a three-way interaction in $H_2$ to ensure that $Conflict$ identifies the sub-sample for which customs duties are likely to be a salient consideration in transfer pricing decisions while also maintaining a sufficient sample size to estimate three-way interactions.

\textsuperscript{35} We also estimate Equation (2) using a continuous measure, whereby $Conflict$ is equal to the ratio of the duty rate to the absolute value of $ITPI$ for conflict observations. The estimated coefficient on $ITPI$ is -0.694 ($p<0.01$) and the coefficient on the interaction term is 1.799 ($p<0.01$). However, we rely on a dichotomous measure of $Conflict$ as our tests of $H2$ require three-way interactions. A binary variable makes those results easier to interpret, particularly since we estimate our regressions in natural log.
On average, firms facing relatively large duty rates appear to significantly alter the transfer prices they might otherwise set in order to minimize their customs duties rather than to minimize income taxes. This indicates that these firms expect it to be sufficiently costly to decouple prices reported to income tax and customs authorities. Interpreting Column (2), the profitability of foreign affiliates that do not face a conflict increases by 0.68 percent per one percentage point decrease in foreign tax rate, while the profitability of the conflict sample is reduced by 0.68 percent (-0.679+1.358). This may seem counter-intuitive but our analysis suggests that when the customs duty incentives outweigh the income tax incentives, a conflict affiliate saves net taxes by reducing its focus on income tax minimization.

For a conflict affiliate in our sample that faces the average Duty and ITPI, this duty-related tax savings represents approximately 160 percent of the income tax transfer pricing incentive (0.053/0.033). In fact, if we apply the coefficient estimate on ITPI for the full sample in Column (1) to conflict affiliates, this would imply that conflict affiliates set transfer prices that would actually raise the sum of their income tax and duty obligations. Specifically, applying the coefficient estimates in column (1) to both groups of affiliates suggests that the average affiliate without conflicting incentives would lower the sum of income tax and duty payments by 8.6 percent (0.053 + 0.033) of shifted income while affiliates with conflicting incentives would raise the sum of income tax and duty payments by 2.0 percent (0.053 – 0.033). Thus, in the presence

36 Other research has documented a positive association between income tax rates and income. Collins, Kemsley, and Lang (1998) find a positive relation between tax rates and income in firms that face foreign tax rates that are on average lower than the U.S. tax rate, an effect that they attribute to implicit taxes dominating explicit (income) taxes in their sample. Based on our findings, however, if the sample in Collins et al. (1998) engages in a significant amount of U.S. import activity from low-income-tax countries but relatively little U.S. export activity to high-income-tax countries, the authors may have found evidence consistent with duty minimization in the low-income-tax sample. Klassen and LaPlante (2011) attack the positive relation found in Collins et al. (1998) based on measurement error, noting that the Collins et al. (1998) result is inconsistent with the hypothesis of purely income-tax-motivated transfer pricing.
of conflicting incentives, firms appear to modify their transfer prices to place less (more) focus on income tax (duty) minimization, lowering the sum of income tax and duty obligations.

5.3  \( H_2A \) \& \( H_2B \) – **Role of Coordination on Conflicting Transfer Pricing Incentives**

5.3.1 \( H_2A \) \& \( H_2B \) – **Empirical Specification**

Our second set of hypotheses predict that firms facing conflicting transfer pricing incentives will focus less on income tax minimization when there is relatively greater coordination in either governments’ or firms’ income tax and customs functions. Thus, equation (3) introduces *Coordination* into Equation (2), and tests for an interaction effect on *Conflict \times ITPI* (i.e., a three-way interaction).

\[
\text{log } PTI = \beta_0 + \beta_1 ITPI + \beta_2 Conflict + \beta_3 Conflict \times ITPI + \beta_4 Coordination \\
+ \beta_5 ITPI \times Coordination + \beta_6 Conflict \times Coordination \\
+ \beta_7 Conflict \times ITPI \times Coordination + \beta_8 \text{logAssets} + \beta_9 \text{logComp} \\
+ \beta_{10} \text{logGDP} + \text{Industry, Year Indicators} \tag{3}
\]

*Coordination* is defined below. All other variables are as defined above for Equation (1).

\( H_2A \) predicts that when governments coordinate duty and income tax enforcement, firms are less likely to decouple their transfer prices due to the increased audit risk created by decoupling. This, in turn, reduces the use of transfer pricing policies that focus on income tax minimization.

To test \( H_2A \), we measure *Coordination* at the government-level using two alternative measures:

- \( \text{One}_\text{Authority} = 1 \) if administration of revenue and customs operations are integrated formally under a single management structure, 0 otherwise, as reported by OECD
- \( \text{One}_\text{Audit} = 1 \) if the government primarily conducts integrated audits by taxpayer, 0 otherwise, as reported by the OECD

We estimate affiliate-level OLS regressions of Equation (3) and continue to expect a negative coefficient on \( \beta_1 \) and a positive coefficient on \( \beta_3 \). A positive coefficient on \( \beta_7 \) is consistent with \( H_2A \), because it suggests that firms are less likely to focus on income-tax-motivated transfer pricing when governmental coordination renders it more costly to decouple transfer prices.
H₂B predicts that corporate coordination reduces firms’ focus on income-tax-motivated transfer pricing, because coordination either increases awareness of the audit risk associated with the use of decoupled transfer prices, or reduces firms’ income-tax-motivated transfer pricing myopia. To test H₂B, we measure Coordination at the corporate-level using five alternative proxies:

- **Centralized** = 1 if the functional currency of the affiliate is the reporting currency (e.g., U.S. Dollar) under Topic 830, *Foreign Currency Translation*, 0 otherwise
- **Expat** = 1 if the affiliate employs at least one U.S. expatriate, 0 otherwise
- **Private** = 1 if the affiliated group does not have publicly-traded equity, 0 otherwise
- **TradeDum** = *TradeDum* equals 1 if Pct_Import or Pct_Export is above the median of the sample distribution, 0 otherwise. *Pct_Export* and *Pct_Import* measure the extent of international trade for the affiliated group as the ratio of total U.S. exports to total U.S. sales, and the ratio of total U.S. imports to total U.S. sales, respectively.
- **SizeDum** = *SizeDum* equals 1 if *Size* is below the median of the sample distribution, 0 otherwise. *Size* is the natural log of affiliated group total assets.

We continue to expect a negative coefficient on β₁ and a positive coefficient on β₃. A positive coefficient on β₇ is consistent with H₂B. We anticipate that the effect of Conflict on ITPI will be stronger if the firm coordinates its income tax and duty functions. To ease comparability, each of the five measures is set equal to 1 when we expect coordination to be relatively stronger.

### 5.3.2 H₂A – Result

Table 4 reports results from estimating Equation (3) using our measures of governmental coordination. In Column (1), which uses One_Authority as our measure of Coordination, we find a positive coefficient on the three-way interaction term (β7=0.810; p<.0001) suggesting that firms facing conflicting transfer pricing incentives attenuate their income tax transfer pricing activity when operating in a country that has formally integrated its customs and income tax enforcement activities. The two-way interaction parameter of 0.806 on β₁+β₃ moves higher to 1.616 (β₁+β₃+β₇=−0.633+1.439+0.810) when the government is coordinated.

(Insert Table 4 about here)
Column (2) presents results using \textit{One\_Audit} as our measure of \textit{Coordination}. Again, we find a positive coefficient on $\beta_7$, suggesting that informal integration of customs and revenue also further constrains transfer pricing on intrafirm trade.\textsuperscript{37} The interpretation of \textit{One\_Audit} is the same as the interpretation of \textit{One\_Authority}; both formal and informal integration appear to matter for the transfer pricing decisions of firms facing conflicting transfer pricing incentives. Joint minimization of duties and income taxes is arguably more difficult for firms facing conflicting transfer pricing incentives that also face integrated customs and income tax enforcement. Therefore, results presented in Table 4 support H\textsubscript{2A} and suggest that in the presence of government coordination, conflict firms increase their coupling of transfer prices for income taxes and customs duties resulting in transfer prices that appear consistent with duty minimization.

5.3.3 H\textsubscript{2B} – Result

Table 5 reports summary statistics from estimating Equation (3) using our proxies for corporate coordination. Column (1) reports results using \textit{Centralized} as our measure of corporate coordination. We expect and find a positive coefficient on the three-way interaction term ($\beta_7=0.548; \ p<.0001$). The positive coefficient on $\beta_7$ indicates that the two-way interaction of 0.454 on $\beta_1+\beta_3$ moves higher; e.g., to 1.007 ($\beta_1+\beta_3+\beta_7=-0.716+1.174+0.548$), when the firm is relatively more coordinated. Columns (2) through (5) show a similar pattern using our other measures corporate coordination. Overall, results presented in Table 5 provide support for H\textsubscript{2B}. That is, coordination of income tax and duty function within the firm generally serves to raise awareness of a transfer pricing conflict. Our observation that firms respond to that awareness by

\textsuperscript{37} It is likely that when multiple taxes are audited simultaneously, customs and revenue authorities share information even if they are not formally integrated into one agency. However, to ensure that audits of simultaneous taxes are likely to include both income taxes and customs duties, we also estimate Equation (3) using \textit{One\_Audit} on the subsample for which \textit{One\_Authority} = 1 and find the same result.
reducing income-tax motivated transfer pricing behavior could result either from (1) a decrease in the likelihood that firms decouple their transfer prices, or (2) a decrease in transfer pricing policies that fixate solely on income tax minimization.

(Insert Table 5 about here)

In untabulated tests, we try to determine whether one of these channels through which firm coordination would reduce income-tax motivated income shifting in the presence of conflicting incentives is stronger than the other. Specifically, we estimate Equation (3), alternatively using each of our five proxies for corporate coordination, separately in the subsamples where One_Audit is equal to 1 versus 0 (we repeat this analysis for One_Authority). If a decrease in decoupling is the dominant channel then we will find stronger results on β7 in the sample facing relative greater governmental coordination, as this is the sample in which firms should expect the cost of decoupling to be the strongest. Alternatively, if a reduction of income-tax minimization myopia is the dominant channel, then we expect to find no difference in the results on β7 across the relatively coordinated versus uncoordinated government samples. Note that these channels are not mutually exclusive.

We find no evidence that one channel consistently dominates the other in interpreting our findings for H2B. Although the first channel appears to dominate using four of our five proxies for corporate coordination (with the exception of Private), this evidence is not consistent across both measures of governmental coordination. For example, Tradedum and Sizedum provide stronger results on β7 when partitioning the sample One_Authority but no difference when partitioning on One_Audit. Overall, we conclude that firm coordination has an incremental effect of firms’ transfer pricing policies in the presence of a conflict through both channels.
6. Conclusion

Income-tax-motivated transfer pricing has been studied in prior literature. While intrafirm transactions are an important channel through which multinational firms shift income, intrafirm trade in goods gives rise to customs duties. Yet, the interaction between duty incentives and income tax incentives in setting transfer prices on intrafirm trade has largely been ignored in the academic literature. Using affiliate-level survey data collected by the Bureau of Economic Analysis, we test whether conflicting transfer pricing incentives (i.e., when a single price will not jointly minimize customs duties and income taxes) alter traditional evidence of income-tax-motivated transfer pricing. We also examine whether governmental tax enforcement coordination and/or corporate tax planning coordination affect the transfer pricing behavior of firms that face conflicting incentives.

Using a sample of foreign affiliates from 1982 through 2005 that engage in intrafirm trade with their U.S. parent, we find that when duty minimization and income tax minimization cannot be achieved using a single transfer price, the negative relation between income tax rates and reported pre-tax income found in the prior literature does not hold. Specifically, importing affiliates located in high income tax countries and exporting affiliates located in low income tax countries exhibit a positive relation between income tax rates and reported pre-tax income. This suggests that the average firm in our sample facing a transfer pricing conflict – a foreign affiliate of a U.S. multinational facing a significant conflict between the customs duties and income tax transfer pricing incentives – tend to rely on one transfer price for its intra-firm trade tax reporting and sets transfer prices to minimize duty payments rather than income taxes.

We also examine whether the effect of the conflict on income-tax-motivated transfer pricing is stronger for firms that face integrated administration and enforcement of duty and income tax payments. In practice, if firms cannot report inconsistent transfer prices on intrafirm trade for
customs and income taxes, then duty minimization should become a greater consideration in transfer pricing decisions for conflict firms. Firms facing a significant transfer pricing conflict appear even less likely to engage in income-tax-motivated income shifting behavior in jurisdictions where the customs and income tax administrations are coordinated. This result supports the high cost of reporting decoupled transfer prices.

Finally, we examine whether the effect of the conflict on income-tax-motivated transfer pricing is stronger for firms that are more likely to coordinate their tax minimization efforts. Duty minimization should become a greater consideration in transfer pricing decisions made by conflict firms when firms are more likely to be aware of and consider conflicting duty payments in setting transfer prices for income tax purposes. Consistent with this expectation, we do not observe income-tax-motivated income shifting in firms facing a significant transfer pricing conflict when the U.S. operation has relatively greater information about and authority over foreign affiliates. These findings are novel because they link the organizational structure of the firm to its tax planning decisions. We also find that private firms, firms that engage in more extensive amounts of international trade, and smaller firms appear to focus more on duty minimization than on income tax minimization in the presence of conflicting incentives.

Overall, we find that when the expected duty payment associated with shifting one dollar of income is considerable, firms appear to forgo some income tax savings. Thus, our study suggests that duties play a considerable role in the transfer pricing behavior of multinational firms.
APPENDIX
TRANSFER PRICING INCENTIVES – COMBINING INCOME TAXES AND CUSTOMS DUTIES

Consider the first column in Figure 1 where \( t_f > t_{US} \). The firm has incentives to understate income in the high-income-tax foreign affiliate. Considering only income taxes, shifting $1 of income out of the foreign affiliate (and into the U.S. parent) lowers the firm’s tax burden by \( $1 \times (t_f - t_{US}) \). However, there are two ways to shift the income tax base on intrafirm trade. If a high-income-tax foreign affiliate is selling to its U.S. parent, understating income in the foreign affiliate will be accomplished by understating the price of the goods sold to the U.S. parent. This will reduce both income tax payments and customs duty payments, as import duties are minimized on the lower price. Alternatively, if a high-income-tax foreign affiliate is buying from its U.S. parent, understating income in the foreign affiliate will be accomplished by overstating the price of the goods purchased from the U.S. parent. In this case, lowering income tax results in a higher duty.

The second column in Figure 1 where \( t_f < t_{US} \) produces a similar result. Here, the firm has incentives to overstate income in the low-income-tax foreign affiliate. Considering only income taxes, shifting $1 of income into the foreign affiliate lowers the firm’s tax burden by \( -$1 \times (t_f - t_{US}) \). If a low-income-tax foreign affiliate is selling to its U.S. parent, overstating income in the foreign affiliate will be accomplished by overstating the price of the goods sold to the U.S. parent. This results in income tax savings but a higher duty payment. Alternatively, if a low-income-tax foreign affiliate is buying from its U.S. parent, overstating income in the foreign affiliate will be accomplished by understating the price of the goods purchased from the U.S. parent, resulting in both income tax and duty savings.

In summary, the transfer pricing incentive for foreign affiliate importers is represented by \( (t_f - t_{US}) - (Duty_f \times (1 - t_f)) \). When \( t_f > t_{US} \), the duty payment reduces the benefit to shifting income. The transfer pricing incentive for a foreign affiliate exporter is represented by \( (t_f - t_{US}) + (Duty_{US} \times (1 - t_{US})) \). When \( t_f < t_{US} \), the duty payment reduces the benefit to shifting income. It is in these two cases that we say that the transfer pricing incentives “conflict.” A key objective of our empirical analysis is to examine the extent to which conflicting tax minimization objectives introduced by duty payments alter the traditional income tax incentive to shift income via transfer prices on intrafirm trade.
REFERENCES


TABLE 1
Sample Selection

Panel A: Sample Selection

<table>
<thead>
<tr>
<th>Foreign Affiliate-Years</th>
<th>Foreign Affiliates</th>
<th>U.S. Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliates reporting required data from 1982-2005</td>
<td>226,365</td>
<td>59,900</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
<td></td>
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<tr>
<td>Foreign-controlled U.S. subsidiaries</td>
<td>5,815</td>
<td>2,054</td>
</tr>
<tr>
<td>Non-corporate entities</td>
<td>15,866</td>
<td>3,478</td>
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<tr>
<td>Banks and insurance entities</td>
<td>13,630</td>
<td>3,870</td>
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<tr>
<td>Holding company affiliates</td>
<td>12,193</td>
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<td>Unprofitable entities</td>
<td>41,394</td>
<td>8,549</td>
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<td>Affiliates not trading goods with U.S. parent</td>
<td>77,855</td>
<td>22,436</td>
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<td>Missing GDP</td>
<td>3,719</td>
<td>769</td>
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<td>Final sample</td>
<td>55,893</td>
<td>16,744</td>
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Panel B: Industry Composition of Sample

<table>
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<tr>
<th>Industry</th>
<th>Percent</th>
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<tr>
<td>Retail</td>
<td>32.4</td>
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<td>Durables</td>
<td>29.2</td>
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<td>Chemical</td>
<td>17.8</td>
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<td>Food</td>
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<td>Textile</td>
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<td>Computers</td>
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<td>Extraction</td>
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<td>Services</td>
<td>2.1</td>
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Panel B lists industry groups that represent at least 1 percent of the final sample of foreign affiliates.
### TABLE 2
Descriptive Statistics

#### Panel A: Full Sample

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<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
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<th>P75</th>
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<td>Importer</td>
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<td>$t_f$</td>
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<td>0.350</td>
<td>0.174</td>
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<td>$ITPI$</td>
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<td>-0.010</td>
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<td>8.404</td>
<td>8.392</td>
<td>1.727</td>
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<td>11.596</td>
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<td>8.789</td>
<td>1.768</td>
<td>7.810</td>
<td>9.792</td>
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<td>logGDP</td>
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<td>19.894</td>
<td>20.126</td>
<td>1.205</td>
<td>19.071</td>
<td>20.772</td>
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<td>0.032</td>
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<td>0.005</td>
<td>0.082</td>
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<td>PTI</td>
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<td>21,247</td>
<td>4,411</td>
<td>87,687</td>
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<td>13,114</td>
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<td>Assets</td>
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<td>158,131</td>
<td>37,403</td>
<td>592,971</td>
<td>14,421</td>
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<td>Compensation</td>
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<td>21,716</td>
<td>6,561</td>
<td>77,986</td>
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<td>751,436</td>
<td>550,122</td>
<td>730,989</td>
<td>191,643</td>
<td>1,049,903</td>
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We compute all variables using BEA data unless otherwise noted. Continuous variables in their unlogged form are presented in thousands, except GDP which is presented in millions. Importer equals 1 if the foreign affiliate imports from its U.S. parent, 0 otherwise. High-Income-Tax equals 1 if $t_f > t_{US}$, 0 otherwise, where $t_f$ equals the ratio of foreign income tax expense to pre-tax income, and $t_{US}$ equals the U.S. statutory rate. Conflict equals 1 when both Importer and High-Income-Tax are equal to 1, or both Importer and High-Income-Tax are equal to 0, 0 otherwise. Conflict25, Conflict50, and Conflict75 equal 1 if Conflict equals 1 and Duty (defined below) is greater than 25, 50,
and 75 percent, respectively, of the income tax transfer pricing incentive (e.g., the absolute value of ITPI). ITPI measures the income tax transfer pricing incentive and is equal to \( (t_f - t_{US}) \). Duty is the average country-year import duty rate, as reported by the World Bank, net of the income tax rate in the importing country: \( t_f \) or \( t_{US} \). One_Authority equals 1 if the revenue body and customs agency are formally integrated into a single governmental authority, 0 otherwise, as reported by OECD (2006, 2009). One_Audit equals 1 if the revenue body conducts tax audits such that multiple types of tax liabilities are audited simultaneously, 0 otherwise, as reported by the OECD (2006, 2009). Private equals 1 if the firm does not have publicly-traded equity, 0 otherwise. Centralized equals 1 if the functional currency of the foreign affiliate is the U.S. dollar, 0 otherwise. Expat equals 1 if the foreign affiliate employs at least one U.S. expatriate, 0 otherwise. PTI \((\log PTI)\) equals (the natural log of) foreign affiliate pre-tax income. Assets \((\log Assets)\) equals (the natural log of) foreign affiliate total assets. Compensation \((\log Comp)\) equals (the natural log of) foreign affiliate total employee compensation. GDP \((\log GDP)\) equals (the natural log of) gross domestic product in the foreign affiliate’s country, as reported by the Economist Intelligence Unit. \( \log FirmAssets \) is the natural log of firm total assets. Pct_Export and Pct_Import measure the significance of intrafirm trade for the firm as the ratio of total U.S. exports to total U.S. sales, and the ratio of total U.S. imports to total U.S. sales, respectively.
<table>
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<tr>
<th>Predicted Sign</th>
<th>(1) Baseline</th>
<th>(2) Conflict25</th>
<th>(3) Conflict50</th>
<th>(4) Conflict75</th>
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</thead>
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<td>(\beta_1 ITPI)</td>
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<td>-0.5424***</td>
<td>-0.6792***</td>
<td>-0.5954***</td>
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<tr>
<td></td>
<td>(0.0490)</td>
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<td>(0.0502)</td>
<td>(0.0497)</td>
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<td>(\beta_2 Conflict)</td>
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<td>0.0159</td>
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<td>(0.0144)</td>
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<tr>
<td>(\beta_3 Conflict \times ITPI)</td>
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<td>1.6450***</td>
<td>1.8043***</td>
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<td>(0.1628)</td>
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<td>(\beta_4 logAssets)</td>
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<td>0.8433***</td>
<td>0.8481***</td>
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<td>(0.0149)</td>
<td>(0.0148)</td>
<td>(0.0149)</td>
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<tr>
<td>(\beta_5 logComp)</td>
<td>+</td>
<td>0.0522***</td>
<td>0.0512***</td>
<td>0.0518***</td>
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<td>(0.0128)</td>
<td>(0.1274)</td>
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<td>(0.0128)</td>
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<td>(\beta_6 logGDP)</td>
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<td>-0.0618***</td>
<td>-0.0605***</td>
<td>-0.0602***</td>
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<tr>
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<td>(0.0090)</td>
<td>(0.0089)</td>
<td>(0.0089)</td>
<td>(0.0089)</td>
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<tr>
<td>(\beta_0 Intercept)</td>
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<td>(0.2991)</td>
<td>(0.2980)</td>
<td>(0.2986)</td>
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Year Fixed Effects: Yes
Industry Fixed Effects: Yes
R-square: 0.6040
Conflict N: 55893
Sample N: 55893

* *, **, *** denotes significance at the 10%, 5% and 1% two-tailed level, respectively. We estimate affiliate-level OLS regressions and report robust standard errors, clustered by firm, in parentheses. All variables are computed from BEA data unless otherwise noted. \(logPTI\) equals the natural log of foreign affiliate pre-tax income. \(ITPI\) measures the income tax transfer pricing incentive and is equal to \((t_f - t_{US})\), where \(t_f\) equals the ratio of foreign income tax expense to pre-tax income, and \(t_{US}\) equals the U.S. statutory rate. \(Conflict25, Conflict50, \) and \(Conflict75\) are indicator variables equal to 1 if \(Conflict\) is equal to 1 and \(Duty\) (net of the income tax benefit) is greater than 25, 50, and 75 percent, respectively, of the income tax transfer pricing incentive (e.g., the absolute value of \(ITPI\)). \(Conflict\) equals 1 when both \(Importer\) and \(High-Income-Tax\) are equal to 1, or both \(Importer\) and \(High-Income-Tax\) are equal to 0, 0 otherwise where \(Importer\) equals 1 if the foreign affiliate imports from its U.S. parent and \(High-Income-Tax\) equals 1 if \(t_f > t_{US}\). Duty is the average country-year import duty rate, as reported by the World Bank, net of the income tax rate in the importing country: \(t_f \times t_{US}\). \(logAssets\) equals the natural log of foreign affiliate total assets. \(logComp\) equals the natural log of foreign affiliate total employee compensation. \(logGDP\) equals the natural log of gross domestic product in the foreign affiliate’s country, as reported by the Economist Intelligence Unit.
## TABLE 4

*Ordinary Least Square Regressions of Foreign Affiliate Profitability on Transfer Pricing Incentives and Governmental Coordination*

<table>
<thead>
<tr>
<th>Predicted Sign</th>
<th>(1) One_Authority</th>
<th>(2) One_Audit</th>
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<tr>
<td>( \beta_1 ITPI )</td>
<td>-0.6328***</td>
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<tr>
<td>( \beta_2 Conflict25 )</td>
<td>0.0551*** 0.0103</td>
<td>0.0160 (0.0270)</td>
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<td>( \beta_3 Conflict25 \times ITPI )</td>
<td>+ 1.4391*** 0.9526***</td>
<td>(0.1976) (0.3081)</td>
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<td>( \beta_4 Gov't\text{-}Coordination )</td>
<td>-0.0533*** -0.0111</td>
<td>(0.1989) (0.0215)</td>
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<td>( \beta_5 ITPI \times Gov't\text{-}Coordination )</td>
<td>-0.2629*** -0.2224**</td>
<td>(0.0927) (0.0878)</td>
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<tr>
<td>( \beta_6 Conflict25 \times Gov't\text{-}Coordination )</td>
<td>0.0289 0.0860***</td>
<td>(0.0337) (0.0323)</td>
</tr>
<tr>
<td>( \beta_7 Conflict25 \times ITPI \times Gov't\text{-}Coordination )</td>
<td>+ 0.8099** 1.0397***</td>
<td>(0.3446) (0.3608)</td>
</tr>
<tr>
<td>( \beta_8 logAssets )</td>
<td>+ 0.8531*** 0.8538***</td>
<td>(0.0149) (0.0150)</td>
</tr>
<tr>
<td>( \beta_9 logComp )</td>
<td>+ 0.0480*** 0.0478***</td>
<td>(0.0128) (0.0127)</td>
</tr>
<tr>
<td>( \beta_{10} logGDP )</td>
<td>-0.0492*** -0.0509***</td>
<td>(0.0093) (0.0094)</td>
</tr>
<tr>
<td>( \beta_{11} Intercept )</td>
<td>0.0550 0.0805</td>
<td>(0.2688) (0.2691)</td>
</tr>
</tbody>
</table>

Year Fixed Effects | Yes | Yes |
Industry Fixed Effects | Yes | Yes |
R-square | 0.6128 | 0.6047 |
Sample N | 50514 | 50514 |

*, **, *** denotes significance at the 10%, 5% and 1% two-tailed level, respectively. We estimate affiliate-level OLS regressions and report robust standard errors, clustered by firm, in parentheses. We compute all variables using BEA data unless otherwise noted. Column (1) reports results using One_Authority as our measure of Gov't-Coordination. One_Authority equals 1 if the revenue body and customs agency are formally integrated into a single
governmental authority, 0 otherwise, as reported by the OECD. Column (2) reports results using *One_Audit* as our measure of *Gov’t-Coordination*. *One_Audit* equals 1 if the revenue body conducts tax audits such that multiple types of tax liabilities are audited simultaneously, 0 otherwise, as reported by the OECD. *logPTI* equals the natural log of affiliate pre-tax income. *ITPI* measures the transfer pricing incentive created by income taxes and is equal to (*t_f* - *t_{US})*, where *t_f* equals the ratio of foreign income tax expense to the sum of net income and foreign income tax expense for a particular affiliate in a particular year, and *t_{US}* equals the highest U.S. statutory rate. *Conflict25*, *Conflict50*, and *Conflict75* are indicator variables equal to 1 if *Conflict* is equal to 1 and *Duty* (net of the income tax benefit) is greater than 25, 50, and 75 percent, respectively, of the income tax transfer pricing incentive (e.g., the absolute value of *ITPI*). *Conflict* equals 1 when both *Importer* and *High-Income-Tax* are equal to 1, or both *Importer* and *High-Income-Tax* are equal to 0, 0 otherwise where *Importer* equals 1 if the foreign affiliate imports from its U.S. parent and *High-Income-Tax* equals 1 if *t_f* > *t_{US}*. *Duty* is the average country-year import duty rate, as reported by the World Bank, net of the income tax rate in the importing country: *t_f* or *t_{US}. logAssets* equals the natural log of affiliate total assets. *logComp* equals the natural log of affiliate total employee compensation. *logGDP* equals the natural log of gross domestic product in the affiliate’s country of location, as reported by the Economist Intelligence Unit.
TABLE 5
Ordinary Least Square Regressions of Foreign Affiliate Profitability on Transfer Pricing Incentives and Corporate Coordination

<table>
<thead>
<tr>
<th>Predicted</th>
<th>(1) Centralized</th>
<th>(2) Expat</th>
<th>(3) Private</th>
<th>(4) TradeDum</th>
<th>(5) SizeDum</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_1 ITPI )</td>
<td>-</td>
<td>-0.7155***</td>
<td>-0.3897***</td>
<td>-0.6832***</td>
<td>-0.5047***</td>
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<tr>
<td></td>
<td></td>
<td>(0.0495)</td>
<td>(0.1209)</td>
<td>(0.0567)</td>
<td>(0.0576)</td>
</tr>
<tr>
<td>( \beta_2 Conflict25 )</td>
<td>0.0759***</td>
<td>0.0588*</td>
<td>0.0573***</td>
<td>0.0885**</td>
<td>0.0267</td>
</tr>
<tr>
<td></td>
<td>(0.0158)</td>
<td>(0.0331)</td>
<td>(0.0158)</td>
<td>(0.0169)</td>
<td>(0.0220)</td>
</tr>
<tr>
<td>( \beta_3 Conflict25 \times ITPI )</td>
<td>+</td>
<td>1.1738***</td>
<td>0.8028***</td>
<td>1.2027***</td>
<td>1.0199***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.1760)</td>
<td>(0.3018)</td>
<td>(0.1687)</td>
<td>(0.1665)</td>
</tr>
<tr>
<td>( \beta_4 Corp\text{-Coordination} )</td>
<td>0.0590**</td>
<td>-0.1374***</td>
<td>-0.1649***</td>
<td>-0.0094</td>
<td>-0.1283***</td>
</tr>
<tr>
<td></td>
<td>(0.0241)</td>
<td>(0.0298)</td>
<td>(0.0401)</td>
<td>(0.0389)</td>
<td>(0.0326)</td>
</tr>
<tr>
<td>( \beta_5 ITPI \times Corp\text{-Coordination} )</td>
<td>0.1465</td>
<td>-0.3538***</td>
<td>0.0535</td>
<td>-0.4640***</td>
<td>-0.0304</td>
</tr>
<tr>
<td></td>
<td>(0.1049)</td>
<td>(0.1190)</td>
<td>(0.1087)</td>
<td>(0.0828)</td>
<td>(0.0959)</td>
</tr>
<tr>
<td>( \beta_6 Conflict25 \times Corp\text{-Coordination} )</td>
<td>-0.0769**</td>
<td>-0.0009</td>
<td>0.0048</td>
<td>-0.0933***</td>
<td>0.0587**</td>
</tr>
<tr>
<td></td>
<td>(0.0333)</td>
<td>(0.0337)</td>
<td>(0.0330)</td>
<td>(0.0270)</td>
<td>(0.0285)</td>
</tr>
<tr>
<td>( \beta_7 Conflict25 \times ITPI \times Corp\text{-Coordination} )</td>
<td>+</td>
<td>0.5483*</td>
<td>0.6599**</td>
<td>0.8605**</td>
<td>0.7933***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.2992)</td>
<td>(0.3260)</td>
<td>(0.3987)</td>
<td>(0.2800)</td>
</tr>
<tr>
<td>( \beta_8 logAssets )</td>
<td>+</td>
<td>0.8468***</td>
<td>0.8382***</td>
<td>0.8443***</td>
<td>0.8458***</td>
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<tr>
<td></td>
<td></td>
<td>(0.0148)</td>
<td>(0.0151)</td>
<td>(0.0145)</td>
<td>(0.1494)</td>
</tr>
<tr>
<td>( \beta_9 logComp )</td>
<td>+</td>
<td>0.0522***</td>
<td>0.0479***</td>
<td>0.0494***</td>
<td>0.0509***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0128)</td>
<td>(0.0128)</td>
<td>(0.0125)</td>
<td>(0.0128)</td>
</tr>
<tr>
<td>( \beta_{10} logGDP )</td>
<td>-</td>
<td>-0.0589***</td>
<td>-0.0588***</td>
<td>-0.0584***</td>
<td>-0.0607***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0088)</td>
<td>(0.0087)</td>
<td>(0.0088)</td>
<td>(0.0088)</td>
</tr>
<tr>
<td>( \beta_{11} Intercept )</td>
<td>0.1719</td>
<td>0.4645</td>
<td>0.4273</td>
<td>0.2186</td>
<td>0.2878</td>
</tr>
<tr>
<td></td>
<td>(0.2970)</td>
<td>(0.3105)</td>
<td>(0.3024)</td>
<td>(0.2937)</td>
<td>(0.2896)</td>
</tr>
</tbody>
</table>

Year Fixed Effects Yes Yes Yes Yes Yes
Industry Fixed Effects Yes Yes Yes Yes Yes
R-square 0.6058 0.6064 0.6067 0.6063 0.6065
Sample N 55893 55893 55893 55893 55893

Dependent Variable = logPTI
*, **, *** denotes significance at the 10%, 5% and 1% two-tailed level, respectively. We estimate affiliate-level OLS regressions and report robust standard errors, clustered by firm, in parentheses. We compute all variables using BEA data unless otherwise noted. Column (1) reports results using Centralized as our measure of Corp-Coordination. Centralized equals 1 if the functional currency of the foreign affiliate is the U.S. dollar, 0 otherwise. Column (2) reports results using Expat as our measure of Corp-Coordination. Expat equals 1 if the affiliate employs at least one U.S. expatriate, 0 otherwise. Column (3) reports results using Private as our measure of Corp-Coordination. Private equals 1 if the firm does not have publicly-traded equity, 0 otherwise. Column (4) reports results using TradeDum as our measure of Corp-Coordination. TradeDum equals 1 if Pct_Export or Pct_Import are above the median of the sample distribution, 0 otherwise. Pct_Export and Pct_Import measure the significance of international trade for the firm as the ratio of total U.S. exports to total U.S. sales, and the ratio of total U.S. imports to total U.S. sales, respectively. Column (5) reports results using SizeDum as our measure of Corp-Coordination. SizeDum equals 1 if logFirmAssets is below the median of the sample distribution, 0 otherwise, where logFirmAssets is the natural log of firm total assets. logPTI equals the natural log of foreign affiliate pre-tax income. ITPI measures the income tax transfer pricing incentive and is equal to (t_f - t_US), where t_f equals the ratio of foreign income tax expense to pre-tax income, and t_US equals the U.S. statutory rate. Conflict25, Conflict50, and Conflict75 are indicator variables equal to 1 if Conflict is equal to 1 and Duty (net of the income tax benefit) is greater than 25, 50, and 75 percent, respectively, of the income tax transfer pricing incentive (e.g., the absolute value of ITPI). Conflict equals 1 when both Importer and High-Income-Tax are equal to 1, or both Importer and High-Income-Tax are equal to 0, 0 otherwise where Importer equals 1 if the foreign affiliate imports from its U.S. parent and High-Income-Tax equals 1 if t_f > t_US. Duty is the average country-year import duty rate, as reported by the World Bank, net of the income tax rate in the importing country: t_f or t_US. logAssets equals the natural log of foreign affiliate total assets. logComp equals the natural log of foreign affiliate total employee compensation. logGDP equals the natural log of gross domestic product in the foreign affiliate’s country, as reported by the Economist Intelligence Unit.