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## International Accounting, Asymmetric Information, and Firm Investment

Jason G. Cummins, Trevor S. Harris, and Kevin A. Hassett

Policymakers generally assume that any tax breaks given to constituents will be taken. This seems a natural assumption, since, from the taxpayers' perspective, failure to claim a credit is akin to throwing away money. Unless we have some reason to believe that taxpayers are ignorant about the credit, we should expect them to claim it. It turns out that there is an important exception to this general rule. In this paper, we present evidence that many foreign firms act as if there is some cost to claiming tax credits or deductions. We argue that this may have an important impact on our understanding of the effects of corporate tax policy in an international setting.

It is natural to assume that minimizing tax payments is always optimal for the firm. For U.S. firms, it has generally been the case that they have no reason to avoid taking tax deductions or credits. There was, however, at least one episode when this was not true. Indeed, some firms purposely inflated their tax payments. A quick summary of this episode will make clear the relevant forces.

U.S. firms can account for inventory for tax purposes in many ways, with the two most prominent methods being the last-in-first-out (LIFO) and first-in-first-out (FIFO) systems. Firms are not required to actually manage their inventories in the way that they account for them for tax purposes, so they should choose whichever method leads to the lowest tax calculation. If there is inflation, a firm should calculate its profits for tax purposes using LIFO, since the most recently purchased good will be the most expensive, and the difference between sale price and cost will be the smallest. In the 1970s, how-

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ever, there was one catch. If a firm used LIFO to calculate its taxable income, then it was required to use LIFO when calculating its accounting profits.<sup>1</sup> Accounting profits are reported to the Securities and Exchange Commission (SEC), and are used by stock-market participants (who never see the actual tax returns of firms) to value companies. Generally speaking, in the United States the methods used to calculate accounting profits are completely separate from those used to calculate taxes. There is a good reason for this: the rules that lead to the most informative signal to the stock market of the prospects of the firm may not be the same rules that lead to the most reliable enforcement of the tax code. For LIFO, this separation was violated, leading to a peculiar result. Firms sometimes chose to use FIFO instead of LIFO when valuing inventories. The most reasonable explanation for this choice is that using LIFO lowered taxes by lowering reported profits, and by shifting to LIFO firms might inadvertently signal lower profitability to the stock market. Presumably wary of large stock declines, firms used FIFO even though this increased total taxes paid to the U.S. Treasury (see Shoven and Bulow 1975).

The LIFO example provides a useful introduction to the discussion of multinational taxation because, for many countries, conformity between the tax and accounting books is the rule rather than the exception. In these countries, firms do not have to prepare separate tax and accounting reports. Just as conformity led some U.S. firms to choose not to use LIFO, it may be that firms based in “tax-conformity” or “one-book” countries will choose not to take advantage of many tax allowances and investment incentives. This could put them at a disadvantage relative to firms from “two-book” countries like the United States, where accounting and tax information are separate. Ignoring tax conformity when estimating the effects of taxes on multinational investment may provide very misleading inferences.

Obtaining knowledge of these effects is becoming increasingly important. The array of tax rates and rules facing a typical multinational firm is daunting. However, these complex rules present multinationals from most countries with strong locational incentives. For example, an investment tax credit (ITC) in the United States not only encourages U.S. firms to increase their investment; it also may attract investors from foreign countries. If the United States were considering the reinstatement of the ITC, policymakers would need to know how much additional investment it would induce. A substantial amount of research has evaluated the responses of firm investment to tax credits, so the analyst might be tempted to use some estimates from this literature to try to predict the effects of a credit. Even if the domestic response estimates were very precise, the analyst would probably be incorrect. This is because foreign corporations account for a sizable portion of investment in the United States,

1. Presently, there are footnotes in annual reports that contain the information shareholders would need to evaluate the impact of inventory valuation methods on reported profits.

and, for a number of reasons, we should expect them to react differently to U.S. tax policy than do domestic firms.

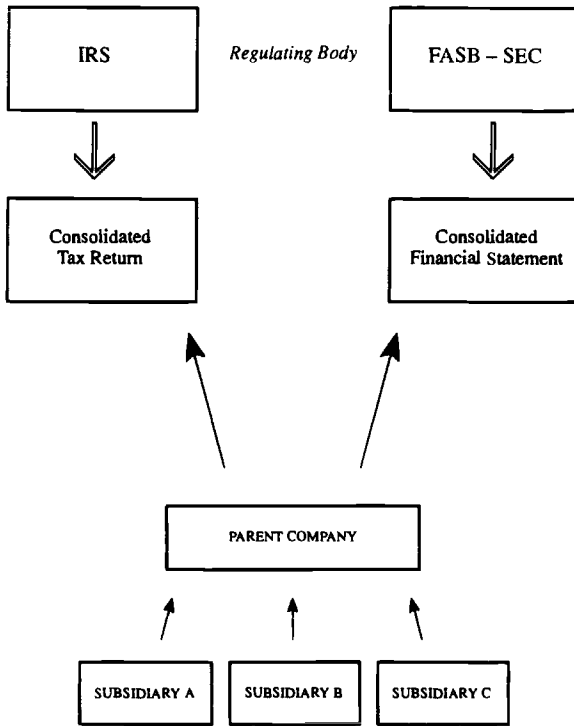
Foremost among these reasons is that income earned in the United States by foreign investors is subject to one of two home-country tax systems. Under a territorial system, the home country exempts income earned in the United States from home-country tax. Under a worldwide system, the home country taxes multinationals on their worldwide income. For an example of why this distinction is important, consider the case of a foreign multinational taxed on a worldwide basis, with its only foreign operations in the United States. Generally, U.S. taxes paid are credited against its home tax liability. If the home-country tax burden is higher than in the United States (as is usually the case), then any taxes paid to the United States are irrelevant, since they do not alter the firm's total (sum of U.S. and home-country) tax liability. If the U.S. tax rate is raised (but the total burden is still less than that in the home country), the U.S. firm's liabilities are raised, while the foreign multinational's ultimate tax payment is unchanged. Thus, a simple increase in the corporate tax rate benefits these foreign firms relative to U.S. firms.

Whether these forces impact capital flows is an important policy question. To date, researchers have related foreign direct investment to tax rates in many different countries and discovered that investment seems to respond to changes in taxes, although substantial uncertainty remains as to the size of these effects. This research has followed a long tradition by building upon models wherein firms equate the marginal revenue of investment to its marginal cost. The tax environment enters the decision to the extent that it alters either side of that equation. An ITC, for example, lowers the cost of each unit of capital.

In our present research, we argue that this last step, while usually appropriate when analyzing U.S. firms, may be inappropriate when studying multinational firms. As we argued above, many foreign multinationals exist in an environment where it is not always optimal for the decision makers to choose to minimize their taxes. Normal marginal cost–marginal revenue trade-offs do not apply for these firms because they operate in a different regulatory environment. Any empirical work that fails to account for this difference will be misleading.

The accounting environments in which firms operate generally fall into two classes. While the individual accounting practices differ in certain respects, the two systems that represent the ends of the conceptual spectrum are the German system (which is one-book) and the American system (which is two-book). To capture the core differences, we briefly outline these two benchmark regimes.

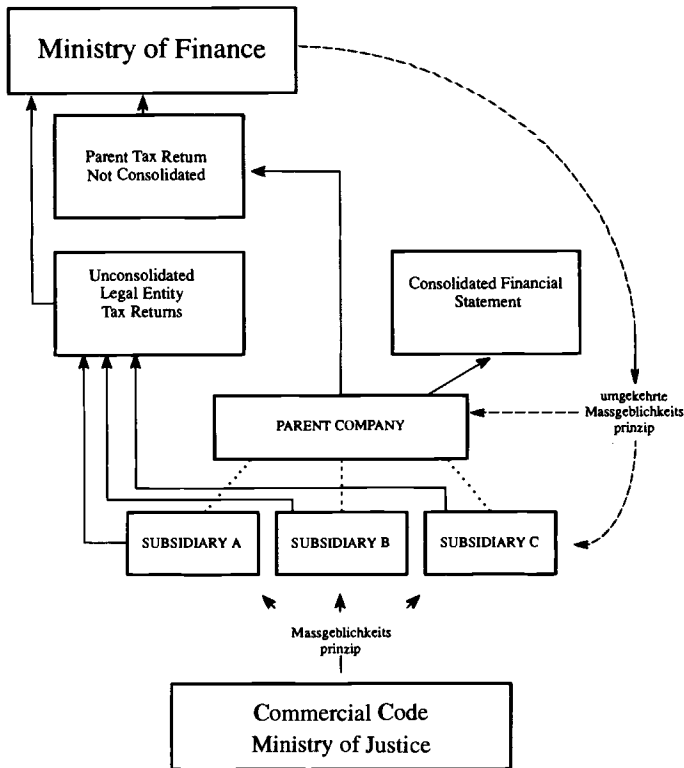
Figure 10.1 summarizes the basic organization of the U.S. system. In the United States, a firm aggregates information received from its subsidiaries into a consolidated tax return. The rules for constructing the return are designed by the tax authority, and reflect various policy objectives. At the same time, the parent firm provides a consolidated financial report for its shareholders that is



**Fig. 10.1 Corporate taxation regulatory organization: United States**

filed with the SEC. The rules that govern the construction of this report are designed to provide useful valuation information to stakeholders. Of course, accurate information about taxes is important for evaluating the profitability of the firm. For this purpose, the consolidated financial statements provide detailed footnotes about net tax expenses and liabilities.

Figure 10.2 summarizes the basic organization of the German system. All reporting is based on the Commercial Code. Each subsidiary files a separate, unconsolidated tax return with the Ministry of Finance, as does the parent. This is the first key difference from the two-book system. In Germany, tax law applies at the level of the “legal entity,” not to the entire consolidated company. For example, losses by one branch of a company can usually not be used to offset profits elsewhere in the group (subject to certain profit-sharing conditions). The Ministry of Finance can also alter accounting rules via the tax law. Tax rules can feed back into the reporting practice via the “reverse authoritative principle,” which requires firms to use tax rules when constructing their financial reports if no relevant rules exist in the Commercial Code. The parent also prepares a consolidated statement to present to its shareholders. This group report is based on reports from the individual legal entities. Historically, the



**Fig. 10.2 Corporate taxation regulatory organization: Germany**

Note: *Umgekehrte Massgeblichkeits prinzip* means reverse authoritative principle; *Massgeblichkeits prinzip* means authoritative principle.

rules governing the construction of this statement have been, except for the consolidation itself, generally the same as those applying to the construction of the tax return. Hence, German companies exist in an environment similar to that faced by U.S. firms in the LIFO case. Maneuvering recorded in the tax return to lower tax liabilities shows up in the individual entity financial statements, and hence usually in the consolidated statements as well. Since this constraint caused U.S. firms to leave tax benefits unused, it is an interesting empirical question whether German companies tend to do the same.

The German system epitomizes one-book countries, but the classification of countries into one-book and two-book is something of an art. As we have explained, even the United States has features of its tax code that make it look like a one-book country. While the definitions are not dichotomous, we can map out a rough continuum of countries that fall between the United States and Germany. Countries that are largely two-book are Australia, Canada, Ireland, the Netherlands, New Zealand, the United Kingdom, and the United

States. Countries that are largely one-book include: Belgium, Denmark, France, Germany, Italy, Japan, Norway, Spain, Switzerland, and Sweden. While the majority of countries are one-book, as more countries seek to access international capital markets more countries are moving toward the two-book system.

To study whether there are behavioral differences between firms based in one- and two-book countries, we did detailed research on each of the above countries' systems, using the Global Vantage database, which contains, among other things, information on the investment decisions of firms in the seventeen countries we consider, over a period of twelve years (Cummins, Harris, and Hassett 1994). In the U.S. case, it was easy to identify the effects of information conformity between the two sets of books. One need only count the number of firms not using LIFO that would benefit from the switch (see Shoven and Bulow 1975). In the international setting, the problem is more difficult. Given the tangled web of tax codes, identification of the optimal tax strategy with respect to specific deductions is virtually impossible without having access to the firm's tax returns. There is an alternative, however. Many of the countries in our sample periodically change their corporate tax systems. As is the case in the United States, the value of depreciation deductions is frequently altered, and ITCs are switched on and off. These changes allow us to construct an experiment that identifies whether firms in one-book countries sometimes fail to claim available tax credits.

In our paper (1994), we develop a model that shows that one important implication of enforcing conformity between the tax and accounting books is that firms will behave as if they face an additional cost every time the firm claims a tax deduction. That is, to the extent that taking a tax benefit lowers reported income, tax benefits can hamper a firm's ability to signal profitability to the market, and may even signal a reduction in profits. Thus, when judging whether to invest and claim a tax deduction or credit, a firm must consider the extra "signaling" cost incurred if there is a risk that a "bad" signal will be sent to the market. We use the variation in investment policy across countries to ascertain whether firms in one-book countries behave as if they face an additional cost when responding to domestic investment tax incentives relative to two-book firms. For example, when an ITC is introduced in the United States, domestic firms increase their investment a certain amount. If Germany were to introduce an ITC identical to the one introduced in the United States, our theoretical analysis suggests that German firms would respond less to the increase than did the U.S. firms, because the German firms face the extra "signaling" cost. This study of the domestic response is an important precursor to an analysis of the specific effects of accounting regime on foreign capital flows. If one-book firms do not respond to tax credits in their own country, it is likely that credits from other countries will lead to little stimulus as well.

In our empirical analysis, we find that the one-book, two-book distinction is important when evaluating firms' responses to changes in domestic tax policy.

Roughly speaking, we find that firms in one-book countries respond about half as much to changes in tax policy as do firms in two-book countries. This means that, for example, an ITC of about 5 percent in the United States will induce about the same amount of extra investment as a 10 percent ITC in a one-book country. All told, this means that in addition to controlling for the worldwide-territorial distinction when evaluating the winners and losers with respect to current tax policy, it is important to control for the home accounting regime as well. Our estimates suggest that the extra “signaling” costs borne by firms in one-book countries are substantial, and tax changes that appear to advantage them may well be—as would be the case if the benefits to LIFO were improved slightly in the United States—inconsequential. In future research, we will expand upon this hypothesis and explore whether historical capital flows between countries can be better understood by applying these new insights.

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