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Introduction

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The ability of modern multinational firms to adjust the scale, character, and location of their worldwide operations creates serious challenges for governments that seek to collect tax revenue from the profits generated by these operations. One of the most important issues that policy makers confront in setting tax policies is to evaluate the extent to which taxation influences the activities of multinational firms. Taxation clearly has the potential to affect the volume of foreign direct investment (FDI), since higher tax rates depress after-tax returns, thereby reducing incentives to commit investment funds. Of course, other considerations are seldom equal: Countries differ in their commercial and regulatory policies, the characteristics of their labor markets, the nature of competition in product markets, the cost and local availability of intermediate supplies, proximity to final markets, and a host of other variables that influence the desirability of an investment location. Until somewhat recently, the obvious relevance of these nontax factors served to convince many observers of the likely unimportance of tax policy in determining the location and character of foreign direct investment.

The hypothesis that tax policies have negligible influence on the activities of multinational firms has been subjected to careful quantitative scrutiny over the last decade, with few (if any) of its implications emerging intact. Recent evidence indicates that taxation significantly influences the location of FDI, corporate borrowing, transfer pricing, dividend and royalty payments, and R&D performance. Much of this evidence has appeared in volumes published by the University of Chicago Press for the

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National Bureau of Economic Research.[1] While there is a growing consensus that tax policies affect important observable aspects of FDI and related activity, there remains a great need for answers to numerous more subtle questions, such as whether and how the effects of taxation have changed over time, the impact of interactions between home and host country tax policies, the relationship between tax and nontax factors that influence FDI, the implications of sophisticated tax avoidance techniques, and the role of tax policy in affecting international productivity spillovers due to multinational firms.

The nine chapters in this volume address these issues with careful quantitative analysis of empirical evidence concerning foreign direct investment and the behavior of multinational firms. The chapters of the volume analyze issues that fall into three broad categories. The first is the way in which taxation affects FDI. The second is the effect of tax policies in encouraging international tax avoidance. And the third is the relationship between tax incentives and international spillovers of technology.

The Effect of Taxation on Foreign Direct Investment

While there exists an emerging consensus that tax policies significantly influence the volume of FDI, there is very little agreement over the precise magnitudes of tax effects and the way in which these magnitudes may have evolved over time. This is an issue of first-order importance, since the effects of tax policies on national welfare depend critically on the extent to which tax rate changes have the ability to influence FDI flows.

Chapter 1, by Rosanne Altshuler, Harry Grubert, and Scott Newlon, analyzes firm-level tax information on the location of foreign investment by American manufacturing firms in 1984 and 1992. The study finds that the location of property, plant, and equipment is highly sensitive to tax rates: Controlling for other considerations, 10 percent higher tax rates are associated with 15 percent less investment in 1984 and 30 percent less investment in 1992. These results are important for at least two reasons. The first is that they document a degree of sensitivity of FDI to local tax rates that is at the very high end of the existing quantitative literature. The second is that they indicate that the sensitivity of FDI to taxation has risen over time. This greater sensitivity is consistent with the incentives created by the U.S. statutory tax rate reductions introduced by the Tax Reform Act of 1986, as well as with the globalization of American business and the consequent greater ability to relocate productive operations in response to tax incentives.

1. See Razin and Slemrod (1990), Giovannini, Hubbard, and Slemrod (1993), and Feldstein, Hines, and Hubbard (1995). These and other studies are critically reviewed in Hines (1997, 1999).

Foreign direct investment involves parties in at least two countries, so the tax policies of both home and host governments have the ability to influence the pattern of FDI. These tax policies are often coordinated, as when home governments provide “tax sparing,” which is the practice of adjusting home-country taxation of foreign investment income to permit investors to receive the full benefits of any host-country tax reductions. For example, Japanese firms investing in countries with whom Japan has tax sparing agreements are entitled to claim foreign tax credits for income taxes they would have paid to foreign governments in the absence of tax holidays and other special abatements. Most high-income, capital-exporting countries grant tax sparing for FDI in developing countries, while the United States does not.

In chapter 2 I compare Japanese and American investment patterns and find that the ratio of Japanese FDI to American FDI in countries with whom Japan has tax sparing agreements is roughly double what it is elsewhere. In addition, Japanese firms are subject to 23 percent lower tax rates than are their American counterparts in countries with whom Japan has tax sparing agreements. Similar patterns appear when tax sparing agreements with the United Kingdom are used as instruments for Japanese tax sparing agreements. This evidence suggests that tax policy in general, and tax sparing in particular, influences the level and location of FDI. Furthermore, the home-country provision of tax sparing appears to influence the willingness of host governments to offer tax concessions.

Host governments impose on foreign investors various obligations, of which taxes represent a subset (albeit a very important one). Other potentially important obligations and restrictions include capital controls and any obligations to make payments to corrupt government officials.

Chapter 3, by Shang-Jin Wei, analyzes the distribution of foreign direct investment by fourteen major capital-exporting countries in forty-five host countries as of 1991. The patterns are instructive: Countries with higher tax rates, stiffer capital controls, and greater propensity for ordinary business transactions to entail corrupt payments are those that receive the least FDI, controlling for other factors. The estimates imply that the effect of corruption on FDI is so strong that the difference between the environment of Singapore (which has very little official corruption) and that of Mexico has an effect on FDI equivalent to a 29 percent tax rate difference. There is no evidence of any important interactions between the effects of corruption levels and those of tax rates, suggesting that investors are no more able to escape high tax burdens in more corrupt countries than they are in less corrupt countries.

U.S. states tax business activity at different rates, and the responsiveness of foreign direct investment to these tax rate differences offers useful evidence in evaluating both the likely impact of cross-country tax rate differences and the effect of state tax rates on purely domestic investment. The chapter by Deborah Swenson analyzes FDI in the United States between 1984 and 1994, distinguishing investments by type (such as new plants, plant expansions, mergers and acquisitions, joint ventures, and increases in investor equity). The results indicate that FDI types differ greatly in their responsiveness to state tax rates. High state tax rates discourage the location of new plants or expansions of existing plants, while encouraging FDI that takes the form of acquisitions of existing firms. These results are generally consistent with the growing literature on the substantial effects of subnational taxation on the location of FDI, while calling attention to the heterogeneous forms that FDI takes and the likelihood that tax effects vary by type of FDI transaction.

International Tax Avoidance

Tax policies affect FDI through the cumulative influence of numerous factors. Firms have incentives to locate assets in low-tax locations because returns to local investments are thereby taxed at low rates. Furthermore, the many tax avoidance methods to which multinational firms have access may provide additional encouragement to locate FDI in low-tax locations in order to facilitate the movement of taxable profits out of high-tax locations. The next three chapters offer quantitative evidence of the importance of international tax avoidance and its potential role in encouraging FDI.

The U.S. Tax Reform Act of 1986 introduced many changes; notable among them was a phased reduction in the statutory corporate tax rate from 46 percent in 1986 to 34 percent by 1988. Based on the tax situations of American firms prior to 1986, it appeared that many American companies would have excess foreign tax credits starting in 1988. Firms with excess foreign tax credits have significantly greater incentives to avoid foreign taxes than do firms with deficit foreign tax credits, and can therefore be expected to reduce their foreign tax obligations through careful use of interest payments, royalty payments, and locally available tax credits and deductions, as well as through other methods. At the same time, host governments have greater incentives to reduce their tax rates in order to compete for investors that have become increasingly tax sensitive.

The chapter by Harry Grubert examines the responses of taxpayers and governments to changed circumstances after 1986 by analyzing individual tax return information for American multinational firms in 1984 and 1992. The results suggest that the average tax rates paid by American firms abroad fell sharply in the years after 1986, with the most pronounced effect on foreign subsidiaries located in countries with the lowest tax rates prior to 1986. These results raise two important possibilities. The first is that American companies responded to the U.S. tax change by economizing on foreign tax payments. The second is that foreign governments changed their own tax practices in the wake of tax reforms in the mid-1980s. These possibilities are not exclusive, of course, and both reveal a process of tax setting and tax avoidance that is considerably subtler than common images of international tax practice.

Tax deferral represents another important opportunity for international tax avoidance. American corporations are required to pay taxes to the U.S. government on their foreign source incomes, but are permitted to defer U.S. tax liabilities on income earned by separately incorporated foreign subsidiaries as long as the income is actively reinvested abroad. The ability to defer U.S. tax obligations on foreign source income is an important component of tax avoidance strategies that include selective timing of dividend repatriations and the possibility that firms will defer repatriations over extended periods of time. Patterns of deferral-based tax avoidance as revealed in the individual tax returns of American multinational companies have been extensively investigated in earlier studies published in the NBER series.

The chapter by Julie Collins, John Hand, and Douglas Shackelford analyzes a new and important indicator of the importance of deferral: stock market reactions to international tax deferral that is reported in the tax footnotes of annual reports. U.S. accounting regulations require firms to report either the tax liabilities they expect to incur when repatriating their currently unrepatriated foreign profits, or to declare such profits to be permanently reinvested. If firms elect to declare their foreign profits permanently reinvested, they are obliged to report elsewhere in a footnote the tax obligation they would incur if these profits were to be repatriated at a later date. Collins, Hand, and Shackelford find that, for firms with deficit foreign tax credits, aggregate share values are depressed by the amounts of any tax liabilities that are reported to be due upon repatriation—even though firms indicate their expectation that profits will be permanently reinvested abroad. This pattern suggests that the market anticipates either the ultimate payment of these tax obligations, or the implicit payment of tax obligations in the form of lower returns to funds that are reinvested abroad to avoid home-country tax liabilities. To the degree that stock market valuations are reliable indicators of corporate opportunities, these results suggest that tax deferral is most valuable as a method of fine-tuning the timing of repatriations, rather than as a method of avoiding altogether any home-country tax liabilities on foreign source income.

The ability of multinational firms to adjust the prices charged in cross-border transactions between members of controlled groups is a widely cited method of reducing total tax liabilities. Most countries require that multinational firms use arm's-length transfer prices for international transactions, but the difficulty of establishing such prices in many realistic situations leaves ample scope for tax-motivated pricing of goods and services bought and sold in jurisdictions with different tax rates. The quantitative literature on international transfer pricing reports evidence suggesting that firms adjust their transfer prices to shift profits from high-tax to low-tax countries, but this evidence is very indirect, typically consisting of reported profit rates that vary inversely with tax rates.

The chapter by Kimberly Clausing analyzes the relationship between tax rates and the reported intrafirm trade volumes of American multinational companies. The results are consistent with significant tax-motivated pricing of transactions between the foreign affiliates of American companies, their parent firms, and other foreign affiliates of the same companies. The evidence indicates that, controlling for other factors, foreign affiliates located in countries with 10 percent lower tax rates have 4.4 percent higher trade surpluses with their American parent companies. In addition, foreign affiliates located in low-tax countries sell unusually high fractions of their total output to other affiliates of the same company. These trade patterns are highly suggestive of tax-motivated transfer pricing, and are therefore consistent with the earlier profitability-based evidence. Clausing's study differs from other transfer pricing investigations in two important ways: first, by examining more direct evidence of transfer pricing methods, and second, by identifying an important impact of tax-motivated transfer pricing on reported trade statistics.

Tax Policy and International Productivity

The R&D activities of multinational firms contribute significantly to the generation of new technology and its transmission across borders. National tax policies affect the costs and returns to R&D performed by multinational firms, and have the potential to influence the location of innovative activity that these firms undertake.

The chapter by James R. Hines Jr. and Adam Jaffe considers the effect of U.S. tax rules on the distribution of inventive activity between the United States and foreign countries. The chapter analyzes the impact of changes introduced by the U.S. Tax Reform Act of 1986 on the international patenting pattern of a panel of American multinational firms affected by the tax changes. Due to the specifics of U.S. tax law, American firms differed in the extent to which the 1986 tax changes affected their after-tax costs of performing R&D in the United States. Furthermore, there is an important difference between the tax treatment of R&D performed in the United States for use domestically, and R&D performed in the United States for use abroad. The chapter indicates that firms for which the after-tax cost of performing R&D in the United States for use abroad rose most rapidly after 1986 exhibit the slowest subsequent growth of foreign patenting. This finding suggests that tax incentives for R&D influence subsequent patenting, and that foreign and domestic innovative activities are complements rather than substitutes.

The adoption of tax policies that encourage foreign direct investment are likely not only to change the size of a country's capital stock but also thereby to change the age composition of the capital stock. Newer capital generally incorporates advances in learning and technique that make it more productive than older capital, and the productivity differences between capital vintages typically appear in reported productivity figures. To the extent that there are large productivity differences between capital vintages, countries that successfully attract new FDI will exhibit rapid growth of measured economic productivity.

The chapter by Jason Cummins analyzes the sources of firm-level productivity growth in a sample of individual American multinational firms between 1981 and 1995. The results indicate that rapid capital accumulation is more important as a source of productivity growth than is the contribution of other productive factors such as labor and intermediate goods, and that, in particular, investment in foreign operations is associated with rapid growth of productivity. These estimates carry important implications not only for the consequences of foreign direct investment, but also for the implied responsiveness of FDI to tax rate differences.

Conclusion

Tax policies in the modern world have the potential to influence economic performance far beyond the borders of the countries that enact them. The ability and evident willingness of taxpayers to relocate activity, to shift taxable income between taxing jurisdictions, to adopt technologies developed elsewhere, and to respond to incentives created by the interaction of domestic and foreign tax rules, imply that tax policies must be evaluated at least in part on the basis of their impact on the activity of multinational corporations. The nine chapters in this volume are concerned with measuring the impact of international taxation on multinational activity, using new analytical methods and previously unexamined data to do so. The results of this research serve to reinforce findings by other studies of the importance of tax considerations in affecting the volume and nature of international economic activities. More importantly, the studies in this volume take the important next step of pursuing the investigation of variations in the impact of international taxation over time and between countries and taxpayers in different situations.

There is enormous interest in identifying the impact of tax policies in economies exposed to the rest of the world. In the current American environment, almost every U.S. tax provision influences foreign direct investment or incentives to engage in international tax avoidance. The research reported in this volume reflects the importance of international tax policies and the opportunities they provide to answer old questions in new ways. The ability to look across countries and firms with widely differing tax situations makes it possible to learn a great deal about the responsiveness of economic activity to its tax treatment. The lessons provided by such investigations carry valuable implications for a broad range of domestic and international policies, and deepen our understanding of the operation of modern economies.

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