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Research Spotlight

Taxation and Multinational Activity: New Evidence, New Interpretations

TARIFF reductions, falling transport costs, and reduced barriers to international capital flows have created extensive opportunities for multinational firms operating in increasingly integrated global markets. In the midst of rapid integration and globalization, firms still face tax systems that differ among countries, and these differences have the potential to affect major investment and financing decisions. Indeed, high-profile examples of countries such as Ireland that use tax policy to attract multinational firms highlight the role of taxation in attracting foreign direct investment, which in turn contributes to economic growth. Governments anxious to attract foreign direct investment often consider the use of tax incentives to lure multinational firms. Similarly, governments of foreign direct investment source countries, including the United States, often wonder whether their tax treatment of foreign income is appropriate. Scholarship on the effect of taxation on foreign direct investment, however, has been limited by an inability to observe how decisionmaking *within* firms reflects tax considerations.

A number of our recent studies have investigated the extent to which taxation influences the activities of U.S. multinational firms. U.S. multinational firms serve as particularly powerful subjects of study because they simultaneously operate in many distinct tax jurisdictions and their actions therefore reflect the impact of tax differences, controlling for any firm-specific effects. Our research covers a wide range of topics, including the impact of indirect taxes as well as of

corporate income taxes, the sensitivity of financing decisions to tax rates, the effects of taxes on repatriation policies, the demand for, and impact of, tax havens, and the use of indirect ownership as a means of avoiding taxes. This body of work is summarized in this research spotlight.

This research is based in large part on work conducted at the Bureau of Economic Analysis (BEA) through a special program that gave us access to the agency's rich store of confidential firm-level data on multinational companies for analytical purposes (see the box "BEA Program for Outside Researchers"). The firm-level data, which are collected in BEA's surveys of international direct investment, are used by BEA to produce aggregated tabular data on multinational-company operations for release to the general public.

In its benchmark and annual surveys of U.S. direct investment abroad, BEA collects the most comprehensive and reliable available data on the activities of U.S. multinational firms.¹ These data are particularly valuable for investigating the impact of international taxation on the activities of U.S.-owned businesses because they include a large amount of tax and operating information that has been collected on a consistent basis on foreign affiliates located around the world.

Several notable features of BEA's direct investment abroad surveys distinguish them from other data sources. First, the BEA data on the foreign operations of U.S. multinational firms are drawn from all foreign affiliates—foreign branches as well as separately incorporated foreign subsidiaries. Because the tax treatments of these two types of foreign affiliates differ, comparisons of the behavior of incorporated and unincorporated affiliates provide useful indicators of the

Mihir A. Desai is an Associate Professor at Harvard Business School, C. Fritz Foley is an Assistant Professor at Harvard Business School, and James R. Hines, Jr. is a Professor of Economics at the University of Michigan. Statistical work for the studies described here was performed at BEA under a special program for outside researchers. (See the box "BEA Program for Outside Researchers.") The views expressed in this article represent the views of the authors.

1. For a discussion of the most recent data collected, see Raymond J. Mataloni Jr., "U.S. Multinational Companies: Operations in 2003," *SURVEY OF CURRENT BUSINESS* 85 (July 2005): 9–29. For general information on the statistics that are available on U.S. multinational firms, see Raymond J. Mataloni Jr., "A Guide to BEA Statistics on U.S. Multinational Companies," *SURVEY* 65 (March 1995): 38–55.

impact of taxation. Second, in contrast to some of the data provided to tax authorities, the BEA filings are not contingent on repatriations (which is usually the taxable event from the U.S. perspective) and include operating information. Thus, the BEA filings profile all of a firm's activity abroad every year. Third, the BEA data provide information not only on income taxes, but also on indirect taxes (such as excise taxes and value added taxes) paid by the foreign affiliates of U.S. multinational firms. Finally, reporting in the BEA data follows generally accepted U.S. accounting principles, and the financial information collected is filed through U.S. entities familiar with such practices; therefore, it is not necessary to make the problematic assumptions that are normally required in order to analyze financial information collected in different countries. The rich variety of operating information for parents and their affiliates also allows for analysis that controls for a variety of confounding factors.

In addition to providing a rich source for financial and operating data for multinational firms, the BEA data also provide a unique window on tax rates around the world. Typically, measures of tax rates rely on statutory rates or rates calculated based on aggregate tax data. The BEA data allow for the measurement of tax burdens as experienced by multinational firms in their operations around the world. As such, they offer a

more accurate measure of effective tax burdens.²

The remainder of this research spotlight summarizes our research on the effects of taxation on multinational firms in the following areas:

- Foreign business activity by multinational firms,
- Financing foreign affiliates,
- Profit repatriation from foreign affiliates,
- Tax havens, and
- Ownership structures.

Income Taxation, Indirect Taxation, and Multinational Activity

Governments have the ability to impose an array of taxes on foreign entities, including personal and corporate income taxes, sales taxes, value-added taxes, property taxes, excise taxes, and numerous others. It is not uncommon for a country to impose all of these taxes simultaneously. Obviously, these taxes have important implications for investment and economic activity, including foreign direct investment.

2. In the papers discussed in this article, income tax rates are defined as ratios of income tax payments to pretax income and are calculated using data for affiliates that report positive after-tax income. Indirect tax rates are defined as ratios of tax payments other than income taxes and payroll taxes to affiliate value added. Payroll taxes are reported as an indistinguishable component of employee compensation. The data are based on U.S. financial accounting rules, which differ from tax accounting rules.

BEA Program for Outside Researchers

The statistical work underpinning the studies described in this article was conducted at the Bureau of Economic Analysis under a program that permits outside researchers to work on site as unpaid special sworn employees of the Bureau for the purpose of conducting analytical and statistical studies using the microdata that it collects under the International Investment and Trade in Services Survey Act. The program was established in the early 1990s, partly as a response to a recommendation by a National Academy of Sciences study panel that "nongovernment users should be given greater access to trade and other international economic data compiled by the federal government."¹ Similar programs have been established at the Census Bureau and the Bureau of Labor Statistics. These programs recognize that some research

requires data at a more detailed level than that provided in publicly disseminated tabulations, and they help to ensure that the data are fully utilized and that the expertise and analytical perspectives of leading economic researchers are brought to bear in their analysis.

At BEA, this work is conducted under strict guidelines and procedures that protect the confidentiality of company-specific data, as required by law. Because the program exists for the express purpose of advancing scientific knowledge and because of legal requirements that limit the use of the data to analytical and statistical purposes, appointment to special-sworn-employee status under this program is limited to researchers. Appointments are not extended to persons affiliated with organizations that collect taxes, enforce regulations, or make policy. BEA screens research outputs before publication to ensure that confidential information is not disclosed, but the views expressed represent those of the researchers.

1. Anne Y. Kester, ed., *Behind the Numbers: U.S. Trade in the World Economy*, National Research Council, Panel on Foreign Trade Statistics (Washington, DC: National Academy Press, 1992): 73.

Previous economic studies have investigated the influence of corporate income taxes on international direct investment. However, the existing literature has considerably less to say about the relationship between direct investment and other types of taxation or about the possibility that the documented relationships may reflect indirect taxes as well as income taxes. Indirect taxes, which are defined as taxes other than corporate income taxes, have grown rapidly over the last several decades and may have a comparable, or greater, impact on investment decisionmaking than do income taxes.

In our paper "Foreign Direct Investment in a World of Multiple Taxes," we compare the effect of corporate income taxes on investment by U.S. multinational firms with the effect of indirect taxes. Foreign indirect tax obligations of U.S. multinational firms are significant, exceeding 1.5 times their direct tax obligations (chart 1). In addition, many countries, including the United States, permit multinational firms to claim foreign tax credits for corporate income taxes paid to foreign governments, but they do not allow credits for indirect taxes. As a result, taxes for which firms are ineligible to claim credits may well have a greater impact on decisionmaking than (creditable) income taxes.

This study compares the sensitivity of foreign direct investment to indirect taxation with its sensitivity to corporate income taxation. This comparison serves

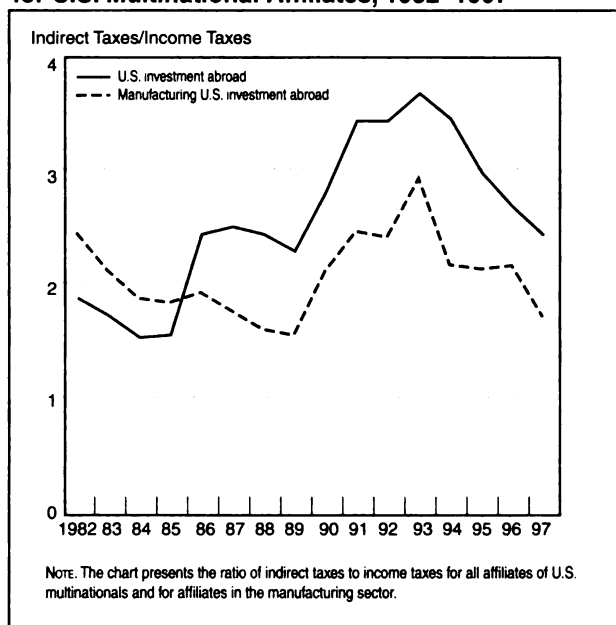
two functions; the first is to identify the impact of these quantitatively important indirect taxes, and the second is to refine our understanding of the channels through which high rates of corporate income taxation discourage foreign direct investment.

The evidence indicates that higher tax rates in host countries are indeed associated with lower direct investment by U.S. multinational firms and that this association is apparent for both indirect taxes and corporate income taxes. Indirect tax rates are negatively correlated with investment levels as measured by assets to about the same degree as are corporate income tax rates. Our estimates suggest that U.S.-owned affiliates in countries with 10-percent higher indirect tax rates have 7.1-percent fewer assets, and those in countries with 10-percent higher corporate income tax rates have 6.6-percent fewer assets. These effects on investment levels are mirrored in effects on output: 10-percent higher indirect tax rates are associated with 2.9-percent less output, and 10-percent higher income tax rates are associated with 1.9-percent less output.

There are reasons to believe that indirect taxes and corporate income taxes influence overall levels of multinational affiliate activity through distinct channels. Indirect tax obligations are not functions of reported income and therefore are little, if at all, affected by the financing of foreign affiliates and by the prices used for intrafirm transfers. For any given level of output, high corporate income taxes have a depressing effect on the use of capital because the taxation of the return to capital encourages firms to substitute away from capital inputs and towards tax deductible inputs such as labor. As a consequence, corporate income taxes encourage firms to reduce their capital-labor ratios, while indirect taxes do so to a much lesser degree. The evidence is consistent with these predictions, in that high corporate income tax rates depress affiliate capital-labor ratios and profit rates, while high indirect tax rates have no discernible effects on these variables.

Thus, high corporate income tax rates are associated with reduced levels of foreign direct investment because they increase the costs of using capital, they encourage taxpayers to substitute labor for capital, and they affect the returns to reallocating taxable income. High indirect tax rates reduce foreign direct investment through just one of these channels, that of greater costs, but the magnitude of their impact is comparable with that of income taxes, partly reflecting the fact that tax credits are not available for indirect tax payments.

Chart 1. The Ratio of Indirect Taxes to Income Taxes for U.S. Multinational Affiliates, 1982–1997



Taxation and the Financing of Foreign Direct Investment

Tax systems generally permit corporations to deduct interest expenses in calculating taxable income, but they do not permit corresponding deductions for dividend payments to shareholders. Such systems encourage the use of debt at the expense of equity, an incentive that is stronger at higher tax rates. While it is widely appreciated that tax systems create such incentives, estimating the sensitivity of capital structure to corporate income tax rates has proven to be difficult. Countries typically subject similar corporations to similar tax rates, thus limiting tax-rate differences and making it difficult to identify the effects of taxation using data drawn from firms in the same country. Recent efforts using cross-country samples exploit the rich variations that international comparisons offer, but these efforts frequently face problems associated with nonstandardized measurement across countries and small sample sizes. Consequently, it is hardly surprising that several studies report no effects or unexpected relationships between tax incentives and the use of debt.

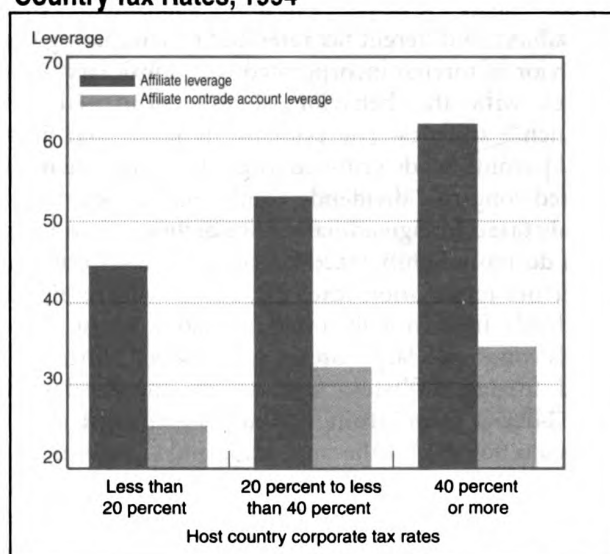
In our paper "A Multinational Perspective on Capital Structure Choice and Internal Capital Markets," we examine the impact of local corporate income taxes on the extent to which multinationals finance their foreign operations with debt, including the use of borrowing from related parties abroad. U.S. multinational firms face different tax rates and therefore different incentives to use debt in the countries in which they operate. The BEA affiliate-level data makes it possible to distinguish the behavior of foreign affiliates of the same parent companies operating in markets with differing corporate income tax rates, and that makes it possible to infer the effects of tax rates on external borrowing and on borrowing from parent companies. The analysis thereby controls for the determinants of capital structure that are common to all affiliates of the same parent company. It also illuminates the extent to which firms use internal capital markets to reduce worldwide tax obligations and to substitute for costly external financing.

The evidence indicates that higher corporate tax rates are robustly associated with increased use of debt. Chart 2 displays the relationship between country tax rates and two measures of U.S. affiliate leverage in 1994. The first measure is the ratio of affiliate current liabilities and long-term debt to total affiliate assets. The median of this ratio for each group of tax rates is depicted by the darker shaded bars. In countries with

tax rates of less than 20 percent, the median ratio is about 45 percent. The median ratio exceeds 60 percent for affiliates in countries with tax rates that are greater than, or equal, to 40 percent. The second measure of leverage that we analyze removes the potential impact of trade credit because trade credit is often noninterest bearing; it is the ratio of affiliate current liabilities and long-term debt, less trade accounts and trade notes payable, to total affiliate assets. The median of this ratio for distinct groups of host country tax rates is depicted by the lighter shaded bars; it also increases substantially with tax rates.

Further analysis reveals that borrowing from parent firms responds more sharply to tax-rate differences than borrowing from external sources. According to our estimates, 1-percent higher tax rates are associated with 0.19-percent higher external borrowing but 0.35-percent higher borrowing from parent companies. Thus, it appears that multinationals opportunistically use their internal capital markets to structure financing in response to tax-rate differences around the world. In addition to measuring the impact of tax-rate differences, the study also considers the effects of external financing costs on proclivities to finance investments with external and internal funds. Specifically, the paper demonstrates that multinational firms face higher borrowing costs in countries with less well developed capital markets, and affiliates in those countries are relatively heavily financed by loans from their parent companies.

Chart 2. Affiliate Capital Structure and Host Country Tax Rates, 1994



Taxation and Repatriation Policies

The U.S. system of taxing foreign income has attracted a great deal of scholarly and legislative attention in recent years. For example, the *American Jobs Creation Act of 2004* featured temporarily reduced taxes on repatriations from abroad in order to encourage firms to repatriate foreign profits that could then be used to finance domestic investment. This rationale relies on the idea that dividend repatriations from foreign affiliates of U.S. multinational firms are significantly affected by repatriation taxes, a proposition tested in our paper “Repatriation Taxes and Dividend Distortions.”

The United States taxes the foreign incomes of U.S. companies, grants credits for foreign income taxes paid, and defers taxes due on the unrepatriated earnings of affiliates that are separately incorporated abroad. This system thus effectively imposes repatriation taxes that inversely vary with foreign tax rates and that differ for affiliates organized as separate corporations and branches because the profits of foreign branches are taxed as they are earned and therefore do not trigger additional tax liabilities upon repatriation. Some observers suggest that the taxation of repatriated profits imposes an undue burden on U.S. companies and that a territorial tax system, in which income earned abroad by U.S. multinational companies would not be subject to U.S. taxation, would improve efficiency and would enhance the competitive positions of U.S. companies in the world marketplace. Others believe that the failure to tax foreign income would create too strong an incentive for U.S. companies to invest in foreign countries rather than in the United States.

Our study measures the effects of repatriation taxes by comparing the behavior of foreign subsidiaries that are subject to different tax rates and by comparing the behavior of foreign incorporated (or “subsidiary”) affiliates with the behavior of unincorporated (or “branch”) affiliates. The evidence indicates that dividend payouts are determined by gradual adjustment to desired long-run dividends conditional on earnings. Highly taxed foreign affiliates have higher payout rates than do more lightly taxed subsidiaries, reflecting the lower net repatriation taxes associated with receiving dividends from heavily taxed affiliates, whose dividends come with large foreign tax credits. Unincorporated foreign affiliates, from whom the receipt of distributions from earnings do not trigger repatriation taxes, do not exhibit the same large and significant association between tax rates and dividend payout ratios.

These effects would disappear if the United States were to exempt foreign income from taxation. The re-

sults imply that holding foreign investment levels constant, the existence of repatriation taxes reduces aggregate dividend payouts by 12.8 percent and in the process generates annual efficiency losses equal to 2.5 percent of dividends. Because repatriation taxes also reduce U.S. direct investment abroad, the total economic effects are larger still.

The Demand for and Uses of Tax Havens

Tax havens are low-tax jurisdictions that provide opportunities for tax avoidance. Popular tax havens typically include Ireland and Luxembourg in Europe, Hong Kong and Singapore in Asia, and various Caribbean island nations in the Americas. Low-tax jurisdictions also exist within countries. Examples include special economic zones in China, low-tax states and enterprise zones in the United States, and historically tax-favored regions such as eastern Germany, southern Italy, and eastern Canada.

U.S. multinational firms make extensive use of foreign tax havens. As of 1999, nearly 60 percent of U.S. firms with significant foreign operations had an affiliate presence in tax-haven countries. In our study “The Demand for Tax Haven Operations,” we use the BEA affiliate-level data to identify the characteristics of firms that use tax havens and the purposes that tax-haven operations serve. The results of the paper’s empirical tests indicate that tax-haven operations facilitate tax avoidance both by permitting firms to allocate taxable income away from high-tax jurisdictions and by reducing the burden of home country taxation of foreign income.

The data suggest that large multinational firms with extensive foreign operations are the most likely to operate in tax havens and that this pattern reflects global tax-avoidance strategies. U.S. multinational firms are more likely to establish new tax-haven operations if their nontax-haven investments are growing rapidly, which generally confirms the notion that more foreign investment increases the potential return to using tax havens. The analysis shows that 1-percent greater sales and investment growth in nearby nontax-haven countries is associated with a 1.5-to-2-percent greater likelihood of establishing a tax-haven operation.

Larger tax-haven countries support a broad range of business activities and thereby afford companies the greatest opportunities to locate taxable profits. The evidence is that multinational parents in industries in which firms typically face high foreign tax rates, in industries that are technology intensive, and in industries characterized by extensive intrafirm trade are the

most likely to operate in large, rather than small, tax havens. The data also show that ownership of an affiliate in a large tax-haven country is associated with reduced tax payments elsewhere in the same region. These results are consistent with the notion that multinational firms have become adept at using financial transactions, intrafirm trade, and transfers of intangible property to reallocate taxable income to low-tax jurisdictions.

U.S. multinational parents in industries in which firms typically face low foreign tax rates also have particularly strong reasons to operate in tax havens. The U.S. policy of taxing foreign profits from foreign subsidiaries only when repatriated, together with the system of granting credits for foreign tax payments, implies that the profits earned in low-tax foreign countries are more likely to generate U.S. tax liabilities when repatriated than are profits earned in high-tax foreign countries. U.S. multinationals can defer repatriation taxes by investing foreign profits in other foreign operations, a process that is facilitated by indirectly owning foreign operations through holding companies located in tax havens. These arrangements must be carefully structured in order to avoid immediate U.S. taxation of certain passive types of income, but they can nonetheless offer benefits to investors with significant potential exposure to U.S. taxation of lightly taxed foreign income. Firms appear to make extensive use of affiliates located in small tax-haven countries for this purpose.

Our related study, "Do Tax Havens Divert Economic Activity?" notes that this evidence suggests that tax havens may serve to increase economic activity in nearby high-tax countries. Tax havens serve this function by indirectly reducing tax burdens on income earned in high-tax countries and by attracting investment that may enhance the profitability of operations in those countries. Proximity allows firms to split up production processes and increases the extent to which firms can avoid taxes through transfer pricing. Evidence that firms with extensive investments in nearby countries find it profitable to establish tax-haven operations likewise implies that the availability of tax haven opportunities increases the attractiveness of investments in high-tax locations. While it is common to worry about the role of nearby tax havens in diverting economic activity, these results indicate that the opposite may well be the case, as the ability to reduce tax obligations through the judicious use of tax-haven operations may stimulate greater investment in their high-tax neighbors.

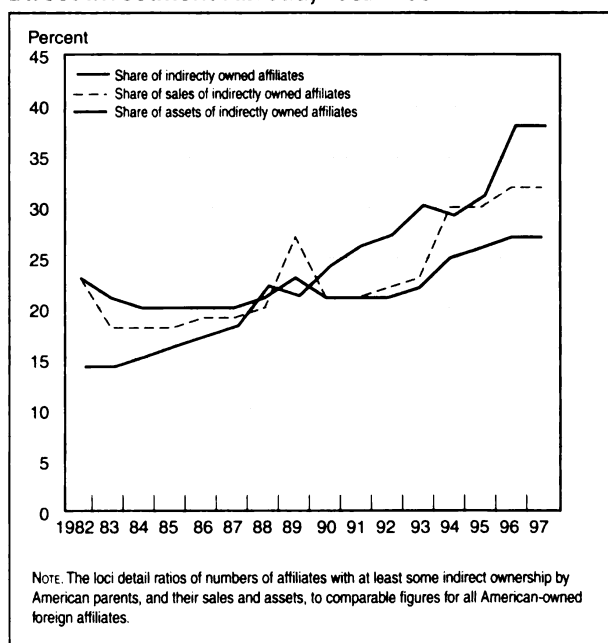
Taxation and Ownership Structure

U.S. multinational firms often structure the ownership of their foreign operations in tiers, so that the parent company might own a holding company in the Netherlands, for example, which in turn owns each of the firm's many other foreign subsidiaries. Such chains of ownership are becoming increasingly popular, with indirectly owned foreign affiliates now accounting for more than 30 percent of the aggregate foreign assets and sales of U.S. multinational firms (chart 3). The use of indirect ownership is described in our study "Chains of Ownership, Regional Tax Competition, and Foreign Direct Investment."

The ability to use indirect ownership, in which affiliates are owned indirectly through other affiliates rather than directly by a parent, can make investors from home countries that tax worldwide incomes and that grant foreign tax credits considerably more sensitive to foreign tax-rate differences than they would be otherwise. Indirect ownership has this effect by reducing the burden of home country taxes. In doing so, indirect ownership mitigates the feature of foreign tax credit systems that provides investors with limited incentives to avoid foreign taxes, because they are entitled to claim credits against home country taxes.

Indirect ownership can arise as a consequence of

Chart 3. The Role of Chains of Ownership in U.S. Direct Investment Abroad, 1982-1997



two strategies commonly suggested by lawyers that specialize in international tax planning. In the first, foreign earnings that would otherwise be repatriated are used to purchase equity in other existing foreign affiliates. This triangular strategy (so called because ownership of the indirectly held affiliate is split between the parent and one of its affiliates, producing a triangular ownership chart) adds to, or replaces, the original equity from the parent in the indirectly held affiliate with earnings from the operations of another foreign affiliate. In the second indirect ownership strategy, a multinational firm uses retained earnings from foreign operations to capitalize its initial investments in new foreign affiliates. The parent firm then has no direct ownership stake in the new foreign affiliate; instead, it owns it indirectly through one or more tiers of other foreign affiliates. The function of this strategy is similar to that of the triangular strategy; it also reduces the cost of taxes due upon repatriation by deferring repatriation.

Comparing the behavior of indirectly owned affiliates with directly owned affiliates allows one to measure the extent to which tax effects change when U.S. parent companies avoid the U.S. tax consequences of immediate repatriation. This comparison also offers an indication of the extent to which tax incentives might differ for multinationals that are based in countries that do not tax the foreign incomes of domestically incorporated firms. In particular, the foreign tax credit system used by the United States is likely to make American investors less sensitive to tax-rate differences than investors from many other countries.

Our findings indicate that indirectly owned foreign affiliates exhibit stronger tax effects than directly

owned affiliates. For indirectly owned affiliates, 10-percent higher tax rates in the host country are associated with a 12.0-percent reduction in affiliate assets and a 1.4-percent lower after-tax returns on assets. The comparable effects for directly owned affiliates are a 2.6-percent reduction in assets and a 0.7-percent lower return on assets. Because many countries other than the United States utilize territorial tax systems that do not impose taxes on earnings upon repatriation, granting credits for taxes earned abroad, multinational firms based in many parts of the world face tax environments similar to those faced by indirectly owned affiliates of U.S. companies. As a consequence, our findings suggest that previous evidence for the United States on the impact of taxation may, if anything, underestimate the effect of taxation on the behavior of multinational firms around the world. Similarly, the results illustrate the likely reaction of U.S. multinational firms to the adoption of a territorial tax system in place of the current worldwide tax system with foreign tax credits.

Conclusion

The behavior of U.S. multinational firms as revealed by the evidence collected by the BEA surveys consistently demonstrates that taxes play a critical role in shaping the volume and location of foreign investment, the financing of foreign investment, and the organizational structures of multinationals firms. As the scope of international business operations increases and as governments grapple with proposals for tax reforms, BEA's work in collecting and compiling data on multinational firms, along with its efforts to facilitate scholarly research using these data, only grows in importance.

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