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# Tax Policy and the International Location of Investment

Michael J. Boskin

## 7.1 Introduction

Foreign direct investment (FDI) in the United States and U.S. direct investment abroad (DIA) are both important economic phenomena and a source of political controversy. In 1980, FDI reached \$17 billion, about 22% as large as net domestic fixed investment. Correspondingly, DIA reached \$19 billion, about 25% as large as net domestic investment in plant and equipment. Since 1980, there has continued to be substantial FDI, but DIA has fallen precipitously. Further, the sources of finance for FDI and the uses of earnings on DIA have changed dramatically in the past few years.

Tax policy has therefore become concerned with these flows, in both directions. For example, the Accelerated Cost Recovery System (ACRS), adopted in 1981 and amended in 1982, was limited expressly to investment in the United States. The primary motivation behind ACRS was to increase U.S. domestic capital formation, but a secondary concern, evidenced in the hearings preceding its adoption, was to stem the flow of U.S. investment abroad.

Further, FDI is often seen as an important justification for continuing the U.S. corporate income tax, even among those who favor corporate and personal tax integration. Another policy relevant to revenue (and perhaps location of investment) was the per-country limitation to the foreign tax credit in the administration's tax reform proposal.

There are undoubtedly a wide variety of reasons for multinational firms to invest outside of their home country: access to markets, political considerations, labor costs, proximity to suppliers, and expected

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economic conditions, to name a few. Often, the reasons may be specific to an industry, firm, or even a product. In addition to these other forces shaping the international location, tax laws also potentially affect the attractiveness of U.S. direct investment abroad and of foreign direct investment in the United States, as well as the repatriation of earnings and/or capital. The major changes in incentives for U.S. domestic investment enacted in 1981 and 1982 (ERTA and TEFRA, respectively), combined with the trends in FDI and DIA and the current tax reform proposals that might substantially affect tax rates on DIA and FDI, lead me to reexamine the extent to which tax policy influences the international location of investment.

In section 7.2, I begin with a brief review of the literature. Section 7.3 discusses definitions and trends in the data. My results are presented in section 7.4. Section 7.5 then applies these results to the 1981–82 tax changes and discusses the welfare effects of tax policy.

## **7.2 A Brief Review of the Literature**

Domestic tax policy affects the international location of investment primarily through two channels: the home country's tax policy toward investment located there and its tax policy toward foreign source income.

Domestic tax policy on investments made in the home country affect both FDI at home and DIA by home country firms, because tax policy alters the relative rates of return available at home and abroad. Entrepreneurs investing capital will naturally be attracted to locations where the (risk-adjusted) rate of return is highest. Of course, this channel hinges on the substitutability of foreign and domestic investment for a firm. However, the common conception of foreign and domestic investment as alternative methods of producing the same good and/or serving the same (geographic) market suggests that there is some substitution between locations of investment. Thus, there are good theoretical reasons for domestic tax policy to affect both FDI and DIA through its impact on relative rates of return.

The importance of taxes on foreign source income has long been a subject of debate. There are two major approaches to taxation of foreign source income. In the "territorial" approach, the company pays no home country taxes on foreign income. In the "residence" approach, the company does pay home country taxes, but often a credit or deduction is allowed for taxes paid in the host country. The United States uses the residence approach and allows a credit for taxes paid to other countries.

David Hartman (1981, 1984, 1985) has pointed out that, contrary to popular wisdom, the taxation of foreign source income may not affect the international location of investment very much. Hartman properly

draws attention to the distinction between investment financed out of retained earnings abroad and investment financed by transfers from home. If the subsidiary is investing out of retained earnings, then the home country tax on foreign source income does not affect the marginal investment decision, because the repatriation of earnings, not the earnings themselves, are the tax base. The home country tax on foreign source income is unavoidable, and its present value does not depend on the length of deferral. Thus, the marginal investment decision for investment out of retained earnings should depend only on net returns available in the home country or the host country.

For firms that finance foreign investment by transfers from home, the home country tax on foreign source income does matter because no foreign earnings have accrued. Thus, the tax on foreign source income is avoidable. One implication of this theory is that a foreign affiliate should never simultaneously repatriate earnings and draw funds from home, since this creates a completely avoidable tax liability. Hartman defines firms that finance foreign investment by retention of earnings as "mature" firms and those that finance investment by transfers from home as "immature." He argues that a large part of U.S. DIA is undertaken by mature firms, since approximately 70% of DIA in 1975–79 was financed by retained earnings. In recent years DIA financed by retained earnings has risen even further. Thus, the U.S. tax on foreign source income may not affect DIA to any great extent. However, if major revisions in tax policy occur frequently (as has been the case), then a firm will have an incentive to wait for lower rates, so the theory may not hold exactly.

## 7.3 Data

### 7.3.1 Introduction

Foreign direct investment refers to the infusion of funds into a U.S. subsidiary by the foreign parent or to the retention of earnings by that subsidiary.<sup>1</sup> U.S. direct investment abroad is defined equivalently for the foreign subsidiaries of U.S. parent companies.

Two aspects of this definition merit comment. First, FDI and DIA are not necessarily the dominant aspects of international capital flows. As of the end of 1983, FDI in the United States equaled approximately

1. The Bureau of Economic Analysis defines a U.S. affiliate as "a U.S. business enterprise in which a foreign person owns or controls, directly or indirectly, at least 10 percent of the voting securities of an incorporated U.S. business enterprise or an equivalent interest in an unincorporated business enterprise." See U.S. Department of Commerce 1980, 2.

18% of all foreign assets in the United States, while U.S. DIA represented 25% of U.S. assets abroad (Scholl 1985).

Second, FDI and DIA are not exact counterparts to domestic net investment figures. For example, inflows of funds (or retention of earnings) are not necessarily used to purchase real capital assets, so FDI may overstate real foreign net investment. On the other hand, U.S. borrowing by the U.S. subsidiary is not part of the calculation of FDI. Nevertheless, Hartman (1981, 1984) suggests that it is reasonable to use direct investment numbers as net investment.

### 7.3.2 Trends

Table 7.1 presents summary data on trends in FDI and DIA.<sup>2</sup> Foreign direct investment has grown 2,000% in real terms from 1950 to 1984. Large swings characterize the last third of this period, with tremendous growth from 1977 to 1981, a collapse of 50% in 1982 and 1983, and a doubling in 1984. The FDI figures are also large in relative terms. In every year since 1980, FDI has been more than 20% of U.S. nonresidential net investment in plant and equipment. This is especially noteworthy for 1984, because net investment in the United States rose by over 100% of its 1983 level. The composition of the sources of FDI has also changed over time. Since 1977, the percentage of FDI financed by retained earnings has fallen substantially. This has occurred contemporaneously with the large rise in FDI documented in column 1,

**Table 7.1 Foreign Direct Investment and Direct Investment Abroad: Selected Years, 1950–84 (Current \$ Millions)**

Year	FDI	DIA
1950	270	1,096
1960	315	2,941
1970	1,464	7,589
1979	11,876	25,222
1980	16,918	19,222
1981	25,195	9,624
1982	13,792	-4,424 <sup>a</sup>
1983	11,946	5,394
1984	22,514	4,503

Sources: U.S. Department of Commerce (1983, 1984); and various issues of the *Survey of Current Business*.

Note: For calculation of real FDI and DIA, cited in the text, note that the GNP deflator in 1950 = 53.5; in 1984 = 223.4.

<sup>a</sup>In 1982, DIA financed by retained earnings was positive, but U.S. affiliates abroad transferred home more funds, so net DIA was negative.

2. All data on FDI and DIA have been obtained from U.S. Department of Commerce (1983, 1984) or selected issues of the *Survey of Current Business*.

thus suggesting that investment financed by intercompany debt and equity flows has dominated FDI for recent years.

U.S. direct investment abroad grew steadily through 1979 but has since collapsed, representing a large and continuing repatriation of funds to the United States. Real DIA in 1984 was only 2% higher than it was in 1950. These observations are reinforced by examination of DIA as a percentage of U.S. nonresidential net investment. The DIA was consistently 20% or more of net investment in the 1960s and 1970s but has collapsed to 11% or less since 1981.

As of the end of 1984, the positions (net capital stocks) in FDI and DIA were \$159 billion and \$235 billion, respectively. Approximately one-third of the FDI position is in manufacturing and one-sixth is in petroleum. These two industries also account for 40% and 25% of the DIA position, respectively. Not surprisingly, European countries represent the largest share of both positions. Although Japan accounts for only 9.3% of the FDI position, this figure has risen from 2.1% in 1975 and 6.4% in 1979, it should be noted. Moreover, as mentioned earlier, capital inflows may occur predominantly in forms other than FDI.

Thus, even a cursory examination of the data suggests that both FDI and DIA can be substantial. The wide swings further suggest that international investment flows may be very sensitive to current or anticipated conditions.

#### 7.4 Results

My study of FDI and DIA uses alternative sample periods, functional forms, and sets of explanatory variables. In each case, because of the theoretical considerations discussed, I separately analyze investments financed by retained earnings and investments financed by intercompany transfers of debt and equity. Sample periods are 1965–79, 1965–84, and 1956–84. To ensure comparability with other studies, I focus on estimates of FDI and DIA as a proportion of GNP. The main explanatory variables are rates of return and tax rates here and abroad.<sup>3</sup> Other variables are also used, such as adjusted output and measures that control for the energy price rises in the 1970s, but they turn out not to affect the results very much.

In general, the results indicate that tax policy can have an important effect on the international location of investment. Here are presented some examples for 1965–79. A fuller analysis and accompanying discussion are presented in Boskin and Gale (1987).

The results indicate that FDI financed by retained earnings is quite responsive to the return on FDI. A 10% rise in the return (e.g., from

3. All tax-rate and rate-of-return data have been obtained from Feldstein and Jun (1987). Further details on data issues are presented in Boskin and Gale (1987).

10% to 11%) increases annual FDI by about 14%, corresponding to an elasticity of 1.4.<sup>4</sup> The elasticity with respect to foreigners' average return in the United States is about 0.9.<sup>5</sup> FDI financed by transfers is less sensitive to the return on FDI but slightly more sensitive to variations in foreigners' average return in the United States.<sup>6</sup>

DIA is very sensitive to the net rate of return on DIA.<sup>7</sup> It is also moderately sensitive to variations in the net return available in the United States.<sup>8</sup> These results hold up under the alternative specifications. They indicate that a 10% rise in the return on DIA (e.g., from 10% to 11%) increases annual DIA by 12%; a 10% rise in the return available in the United States decreases DIA by about 2%.

### 7.5 Summary and Implications

I have presented new evidence that U.S. domestic tax policy affects the international location of investment. While the results are somewhat sensitive to the sample period, functional form, and other considerations, the qualitative conclusions tend to hold up well. Two empirical issues are particularly interesting: the likely impact of the 1981–82 corporate tax changes on FDI and DIA and the corresponding potential effects of any corporate tax reform. However, the welfare aspects of the international location of investment are also important.

My estimates of the impact on DIA of changes in the after-tax rate of return in the United States suggest that for every dollar of increased U.S. domestic investment, there is a reduction of approximately four cents of DIA. This estimate comes from a comparison of analogous coefficients on domestic investment equations estimated by Feldstein and Jun (1986). It refers only to investment out of retained earnings. Transfers from domestic parent companies to foreign subsidiaries, or the establishment of such subsidiaries, are also likely to respond to domestic tax policy, but the data are insufficient to reach any specific conclusions on that matter.

I estimate that a tax policy that raises the after-tax rate of return enough to lead to a dollar of increased domestic investment in the United States brings with it between eight and twenty-seven cents of FDI. These results are consistent with Hartman's (1981, 1984).

4. This elasticity is estimated to be 1.0 in equations using alternative sample periods. The return on FDI is calculated as FDI income divided by the FDI position.

5. In other sample periods, this elasticity varies substantially, but averages about 1.2. Foreigners' average return in the United States is the overall rate of return in the United States multiplied by one minus the tax rate paid at the corporate level.

6. Alternative functional forms and explanatory variables lead to the same qualitative conclusions.

7. The return on DIA is calculated as DIA income divided by the DIA position.

8. The net return in the United States is the overall rate of return multiplied by one minus the total effective tax rate.

Several studies have analyzed the effect of the 1981–82 investment incentives on effective marginal tax rates (e.g., see Auerbach 1983; Feldstein and Jun 1987; Gravelle 1983; or Hulten and Robertson 1983). These studies generally find that the effective corporate tax rate was reduced by about 20%–35%. With a constant before-tax rate of return and a pre-ERTA effective tax rate of about 33%, the tax changes increased foreigners' average net return in the United States by 10%–17%. Other things equal, this change in net return would bring about approximately a 2%–4% decline in DIA and an 11%–20% rise in FDI. This would imply capital inflows of about \$0.5–\$1.0 billion from smaller DIA and \$2–\$4 billion in increased FDI. Of course, these figures refer only to FDI and DIA out of retained earnings. Likewise, a tax reform such as HR 3838, which raises (except perhaps at very high inflation rates) the effective tax rate on U.S. corporate investment, would result in an increase in direct investment abroad by U.S. firms and a decrease in FDI in the United States. However, because these results contain no long-term dynamic theory of the optimal international location of investment, they should not be taken as a final guide to the impacts of these tax changes on investment patterns.

Finally, I should address the welfare economics of the international location of investment, described in Caves (1982); Goulder, Shoven, and Whalley (1983); and Hartman (1984). Domestic economic welfare rises with FDI because the United States receives a claim on the rate of return to foreign capital through the taxation of FDI income. Conversely, domestic economic welfare falls when U.S. firms substitute DIA for investment at home, because the nation then receives only the net-of-foreign-tax return (and only when it is repatriated) rather than the gross return. These welfare effects are augmented by the beneficial effects on labor productivity of greater foreign or domestic investment in the United States. Thus, a reduction in taxation of new corporate investment improves welfare through three channels: the standard mechanism, through which lowering the effective marginal tax rate generates new domestic investment opportunities for U.S. firms; a reallocation of the location of investment by U.S. firms toward home and away from abroad; and an increase in FDI. In this paper, we have presented some new evidence that these last two effects are quantitatively important and therefore that it is necessary to consider them in any evaluation of domestic investment incentives.

The welfare effects of tax policy clearly depend on the responsiveness of FDI and DIA to net-of-tax returns. The welfare gains to a tax reduction on new corporate investment in the U.S. are positively linked to the responsiveness of DIA and FDI with respect to net-of-tax returns in the United States.

My results suggest that accelerated depreciation or tax credits for *new* investment, which decrease the effective marginal tax rate paid at

the corporate level by 10%, would raise FDI by 9% through their effect on the net-of-tax return available to FDI. Corporate tax revenues from the taxation of FDI could be expected to rise correspondingly. Similar, though smaller, revenue effects would occur for DIA. These results refer only to investment financed by retained earnings. However, tax revenue is greater per dollar of potential DIA diverted to domestic investment than per dollar of FDI, because foreign owners of U.S. capital pay taxes only at the corporate level, while domestic owners are also responsible for state, local, and personal taxes.

My results suggest that the tax effects on the international location of investments are important. Tax policies such as ACRS and ITC, which raise the after-tax rate of return on new investment without losing revenue from previous investment, not only stimulate domestic fixed investment but also attract additional investment from abroad. The additional investment supplements the impact of domestic investment on productivity and raises corporate tax revenue. However, my results should be taken as preliminary estimates, not as definitive statements about the long-run impacts of tax policy.

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