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Taxation and the Competitiveness of U.S. Firms in World Markets

June 1994

By Joosung Jun, Ph.D.
Yale University
National Bureau of Economic Research
Arthur Andersen Visiting Professor

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Introduction

A sharp rise in cross-border investments in recent years has raised new questions about the competitiveness of U.S. firms in world markets and the role of tax rules in determining the cost of capital for these firms. Tax rules affect the ability of U.S. foreign subsidiaries to compete in foreign markets with the local companies and with the local subsidiaries of companies based in other countries. The primary channel through which taxes exert this influence is by changing the cost of capital.

Past comparative studies of the cost of capital have been mostly concerned with a comparison of the cost of capital for domestic investment between countries. The cost of capital for domestic investment differs from country to country basically for two reasons. First, the domestic cost of funds may differ across countries. Second, capital income is taxed differently, both at the personal and corporate levels, in each country. Although previous studies did not always reach identical conclusions due to methodological differences, a typical finding of these studies is that during the past decade, the cost of capital gap has been largely attributable to differences in the domestic cost of funds, leaving little room for the role of tax systems.

In the case of multinational investment, however, an international comparison of the cost of capital is complicated by the possibility of overlapping tax jurisdictions and the possibility of raising investment funds in different countries and transferring those funds between the parent and the subsidiary. Thus, comparing the cost of capital for domestic investment between countries may lead to very misleading implications for the competitiveness of multinationals.

The objective of this paper is to estimate the degree to which international tax rules affect the cost of capital with particular attention to U.S. firms competing with firms from other countries in major markets. The paper attempts to modify the conventional cost of capital measure in a way that incorporates the impact of international tax rules. The analysis involves comparing U.S. firms and their local competitors in major foreign markets, U.S. firms and other foreign multinationals in a given foreign market, and local U.S. firms and foreign firms in the U.S.

1. Basic Tax Rules Related to International Investment

Income from international investment is subject to several layers of taxation. Host governments typically impose corporate taxes on income earned within their jurisdictions regardless of the nationality of the owner of the capital. Many countries subject foreign source income to home-country personal income taxation. In certain cases, corporate income taxes are imposed by the home government. Countries also impose withholding taxes on income repatriated abroad.

Due to such overlapping tax jurisdictions, foreign source income may be subject to both home-country and host-country taxation. Such double taxation of international income should be a deterrent to international investment due to the implied high effective tax rates. In order to avoid double taxation of international investment income and encourage free flows of capital, countries typically provide some kind of tax relief to foreign source income. The exact nature and extent of double-taxation relief differs across countries and types of income.

All countries assert the right to tax the income of their residents regardless of where the income is earned. The simplest way to provide double taxation relief is to exempt foreign source income from home country taxation. In this case, the only taxes levied on foreign source income are the income and withholding taxes imposed by the host government. Only a few countries (e.g. the Netherlands) adopt this 'territorial' system under which there is no residence-based taxation of foreign-source business income. As a result of bilateral tax treaties, however, this exemption method is more prevalent in practice than implied by the tax statutes of each country. Pairs of countries often agree to exempt from domestic taxation their residents' income earned in the other country.

Many countries exercise their right to tax using the more conventional 'residence' system under which foreign source income is subject to home country taxation, but a credit or deduction is allowed for taxes paid to the host government. In practice, countries using the residence system impose restrictions on the amount of foreign tax credit they will allow. The foreign tax credit is typically limited to the home country tax liability on the foreign source income. This limitation protects the home country's domestic tax base by preventing credits earned on income taxes paid in high tax foreign jurisdictions from offsetting tax liability on domestically-earned income. Investors whose potentially creditable foreign taxes exceed the actual credit limit are said to be in an 'excess credit' position. Thus, foreign tax credit limitations are likely to be binding when the firm invests in a high tax country. If the foreign taxes paid are less than the limitation on credits, the company is said to be in a 'deficit credit' or 'full credit' position, meaning that the business will be able to make full use of its foreign tax credits.

When a multinational invests in several foreign countries, it is normally allowed to pool the income repatriated from all of these countries, and credit against the domestic taxes due on this income all corporate and withholding taxes paid abroad on this income. In doing so, it can use excess credits from operations in a high tax country to reduce any domestic taxes due on operations in a low tax country. If, in total, its credits are sufficient to offset its domestic tax liabilities on its world-wide foreign operations, then no domestic corporate tax is owed. In this case, its final net income is the same as under the territorial system.

In addition to providing foreign tax credits, residence system countries typically allow their firms to defer the home country tax on certain types of foreign source income until the income is repatriated. In general, active business income earned by a foreign subsidiary belongs to this category. Income from passive investment (dividends and interest, for example) is typically taxed on an accrual basis. Tax deferral can be an important source of tax benefits since it may lower the effective tax rate on foreign investment under certain circumstances.

The U.S. uses a variation of the credit system in which a number of baskets are defined into which income and expenses from foreign operations are grouped. For example, income from financial operations is recorded in the financial income basket. The foreign tax credits associated with the income in each basket are pooled to determine whether a residual U.S. tax liability exists on the total income in that particular basket. However, excess credits in one basket may not be

used to offset residual U.S. tax liability in another basket.

The asymmetric treatment of a given economic activity across different jurisdictions may significantly influence the way multinationals allocate capital between domestic and foreign operations. Local investment incentives and financing sources in the host country will further complicate the investment and financing decisions of business.

The common notion of tax-induced location choice is based on the comparison of the after-tax rates of return in different places. Thus, the argument goes, given the pretax rates of return, the statutory tax rates and investment incentives in each country will determine its attractiveness as an investment location for international investors.

The main flaw with such conventional wisdom is its failure to recognize the additional layers of taxation which may be imposed upon international investment. When choosing between the home country and a foreign country as a location for investment, a multinational may compare the effective tax rate on domestic investment in the home country, not with that on domestic investment in the host country, but with the total effective tax burden on international investment which is determined by the host country taxes and home country tax treatment of foreign source income. Even under the exemption system, in which the home country does not tax foreign source income, the effective tax rate on international investment can differ from that for host-country competitors due to the withholding tax on repatriated income.

2. The Cost of Capital for Foreign Investment

This section sets out a framework within which the cost of capital for foreign investment is estimated. The focus is on the way in which corporate tax rules related to international investment influence the cost of capital.

All shareholders are assumed to live and be taxed in the home country. The foreign subsidiary is wholly-owned by the domestic parent which maximizes shareholder wealth. While the subsidiary can finance its investment through a variety of sources, this paper focuses on the case where the parent uses its retained earnings as the basic source of funds for both domestic and foreign investment in order to highlight the differential tax effects on domestic and foreign investment given the same cost of funds. This paper also ignores personal taxes and focuses on the role of corporate taxes in determining the cost of capital.

The cost of capital is the pretax rate of return that a corporation must earn in order to pay the rate of return required by the providers of capital. The cost of capital depends on the discount rate as well as several other considerations such as the tax treatment of capital income and the depreciation of the investment asset.

The discount rate for domestic investment is determined by the rate of return required by the shareholders, which is the risk-adjusted net rate of return on alternative investment opportunities, and shareholder taxes which are ignored in this paper. An intuitive way to understand the appropriate discount rate for financing of foreign investment is to regard domestic and foreign investment as alternative investment opportunities for the parent. The discount rate for foreign investment should then reflect the rate of return on domestic investment and the additional taxes caused by transferring funds abroad. Let u be the rate of tax the parent bears upon receiv-

Table 1
The Cost of Capital for Foreign Investment

(1) Cost of capital for domestic investment	$\frac{(\rho+\delta)(1-Z)}{(1-\tau)}$
(2) Cost of capital for foreign investment	$\frac{(\rho^*+\delta^*)(1-Z^*)}{(1-\tau^*)}$
(3) Discount rate for foreign investment (ρ^*)	$\frac{\rho}{(1-u)}$
(4) Effective tax rate on foreign source dividends (u)	w^* (exemption) $\max\left[\frac{\tau-\tau^*}{1-\tau^*}, w^*\right]$ (*credit*)
(5) The impact of international tax rules on the discount rate (1/(1-u)): an example	1.05 (exemption) 1.20 (credit)

Notes:
1. Personal taxes are ignored.
2. ρ: the rate of return required by shareholders
3. σ, σ^*: the rate of economic depreciation in the home and host countries
4. τ, τ^*: the corporate tax rates in the home and host countries
5. Z, Z*: tax savings from depreciation allowances or investment credits in the home and host countries.
6. w*: the withholding tax rate on dividends
7. Parameter values for the example: $\tau=0.5$, $\tau^*=0.4$, and $w^*=0.05$
8. See Jun (1994) for a detailed discussion of the formulas

Table 2
The Cost of Capital for U.S. and Local Firms in Foreign Markets

Host country	Local Firms (Column 1)	U.S. Firms (Column 2)
U.S.	7.6	7.6
Japan	9.0	10.6
Canada	8.1	9.5
France	7.3	9.7
Germany	8.3	9.5
Netherlands	7.1	7.8
U.K.	7.7	8.6
Italy	9.1	9.9
Sweden	7.2	8.8
Switzerland	6.6	8.2
Australia	9.0	11.5
Average (foreign investment)	8.0	9.3

Table 3
The Cost of Capital for Firms Operating in Japan

Home country	Equity transfers: no imputation credits for foreign source dividends (Column 1)	Equity transfers: with imputation credits for foreign source dividends (Column 2)
Japanese domestic	9.0	9.0
U.S.	10.6	10.6
Canada	11.1	7.3
France	11.7	6.8
Germany	12.8	2.4
Netherlands	10.6	10.6
U.K.	11.3	6.4
Italy	11.8	4.6
Sweden	10.6	10.6
Switzerland	10.6	10.6
Australia	13.9	4.7
Average (foreign investment)	11.5	7.5

ing dividends from the subsidiary. The parent then requires that foreign investment earn a yield of at least 1/(1-u) dollars per dollar of transfer which could otherwise be used to enhance domestic investment. Therefore, the discount rate for foreign investment is larger than the rate of return on domestic investment by the factor 1/(1-u).

The effective tax rate on foreign source dividends (u) consists of both host country and home country components. When the subsidiary pays dividends to its parent, the host government typically imposes withholding taxes. In the home country, the parent may also owe taxes on repatriated subsidiary profits, which will take on different values depending on the home government's policy toward foreign source income. Under a territorial system or a treaty which exempts foreign source income from home country taxation, there is no home country tax on foreign source dividends. Under a tax credit system, foreign source dividends may face home country corporate surtaxes (deficit-credit position).

Table 1 describes the expressions for the cost of capital for domestic and foreign investment as well as the underlying parameters. The discount rates and the cost of depreciation of the asset are augmented by various tax parameters. The corporate tax rate increases the pretax rate of return the investment must deliver for the shareholders. On the other hand, investment incentives like credits or accelerated depreciation allowances will reduce the cost of capital. Note that the discount rate on foreign investment is 1/(1-u) times that for domestic investment.

Line (5) depicts an example in which the effect of international tax rules on the expression (1/(1-u)) is calculated using realistic parameter values. Under the exemption system in the home country, the discount rate for foreign investment will be 5 percent larger than that for domestic investment using the same source of funds. Under the credit system, however, there is residual home country tax at the rate of 17 cents per dollar of dividends paid by the subsidiary. This residual tax translates into a 20 percent higher total tax liability than would result under the territorial system.

In the remainder of the paper, various cost of capital measures for U.S. firms and their major competitors in foreign markets are presented. The methodology used to calculate the cost of capital is fully described in [Jun (1994).]* A common real interest rate of 5 percent and a common inflation rate of 4.5 percent were assumed for the purpose of focusing on how each countries' tax systems affect the cost of capital and for maintaining comparability between countries.

In summary, the cost of capital measures reported in the following sections are the pretax rates of return necessary to earn a given after-corporate-tax rate of return (real interest rate) of 5 percent. All the variations in the cost of capital for foreign investment across countries are purely due to differences in their corporate tax systems. The values for tax parameters are drawn from the OECD, which relate to the systems in force as of January 1, 1991.

3. U.S. vs. Local Firms in Foreign Markets

Consider first the cost of capital for U.S. firms and their local competitors in major foreign markets as depicted in Table 2. The first column reports the cost of capital for domestic investment. The effects of corporate tax rules on the cost of capital differentials for domestic investment between countries do not

Table 4
The Cost of Capital for Firms Operating in the U.S.

Home country	Equity transfers: no imputation credits for foreign source dividends (Column 1)	Equity transfers: with imputation credits for foreign source dividends (Column 2)
U.S. domestic	7.6	7.6
Japan	10.7	10.7
Canada	9.5	6.1
France	8.8	5.1
Germany	10.9	1.8
Netherlands	8.3	8.3
U.K.	8.5	4.8
Italy	11.8	4.4
Sweden	8.3	8.3
Switzerland	8.3	8.3
Australia	11.9	3.9
Average (foreign investment)	9.7	6.2

appear to be large, which is in line with most previous comparative studies. Across countries, the required pretax rates of return on domestic investment are higher in Japan, Germany, Italy, and Australia than in other countries, reflecting their relatively high corporate tax rates.

Now consider the case of U.S. firms investing in foreign markets (column (2)). In the sample host countries, U.S. firms face about a 20 percent higher cost of capital on average than in the case of U.S. domestic investment (9.3% vs. 7.6%). A 20 percent higher cost of capital for foreign investment would put U.S. multinationals in a disadvantageous position in most foreign markets. Comparing columns (1) and (2) indicates that U.S. firms face a higher cost of capital than their local counterparts in every sample country.

When only corporate taxes are considered, for example, U.S. domestic firms face a slightly lower cost of capital (7.6%) than Japanese domestic firms (9.0%) because of higher corporate tax rates in Japan. In contrast, U.S multinational firms face a higher cost of capital than local firms in Japan (10.6% vs. 9.0%) due to the tax costs associated with international investment. It has been noted in the literature that Japanese firms have enjoyed a cost of capital advantage over U.S. firms due mainly to the difference in the cost of funds between the two countries during the past decade. Since the results reported in this study are based on the assumption that there are no cost of funds differentials between countries, the negative impact of U.S. international tax rules on the cost of capital can be interpreted as an additional source of disadvantage for U.S. firms operating in Japan when these firms receive additional capital from their domestic parents.

4. U.S. vs. Other Multinationals in Foreign Markets

In a foreign market, U.S. firms compete not only with local firms but also with multinationals from other countries. Table 3 shows the cost of capital measures for firms from different countries operating in Japan. The country column in this table represents home countries.

In column (1), the cost of capital for U.S. firms belongs to the lower end of the spectrum (10.6%). Note that those firms whose cost of capital is higher than U.S. firms are from countries with a dividend credit scheme (Canada, France, Germany, the Netherlands, the U.K., Italy, and Australia). In these countries, the cost of two sources of parent equity funds — new equity and retained earnings — may be different. Since personal taxes (therefore, a personal tax advantage for capital gains relative to dividends) are ignored in this paper, the dividend imputation scheme will make the cost of parent new equity lower than that for parent retained earnings for financing domestic investment.

If shareholders in these countries are allowed to take such dividend imputation credits for foreign source dividends, multinationals from these countries can lower the cost of capital for foreign investment by using parent new equity instead of parent retained earnings as the source of capital investment. In this case, as shown in column (2), firms from countries with a dividend imputation scheme have a clear advantage over U.S. firms. For example, the average cost of capital for firms from imputation countries is 5.4 percent, which is about half of the cost of capital for U.S. firms. This result suggests the potential importance of integrating personal and corporate

taxation in enhancing U.S. competitiveness.

Some countries try to restrict investors' ability to use the dividend-imputation scheme on dividends from domestic corporations financed by earnings from abroad. Typically, countries require that dividends eligible for the dividend-imputation scheme be less than the firm's after-tax profits from domestic operations. Unless a firm desires an abnormally high dividend payout rate, however, this restriction is unlikely to be binding.

There are several additional factors which may add to the competitive burden of U.S. firms operating abroad. Among major international investor countries, the U.S. has the tightest rules regarding the extent to which home country taxes on foreign source income are exempted or deferred and regarding the limitation of foreign tax credits. The following are some examples:

- The Tax Reform Act of 1986 has made pooling of worldwide income more difficult for U.S. firms by confining the eligibility to earnings from majority-owned subsidiaries. On the other hand, other countries tried to adopt the exemption method by statutes (e.g. the Netherlands) or by treaties (e.g. Germany and Canada).
- Unlike its major competitors, the U.S. considers loans a subsidiary makes to its parent to be the equivalent of a dividend. A U.S. tax may be applied to those loans. Multinational from other countries have an easier access to low cost capital available in their foreign operations.
- The U.S. is the only major developed country that does not grant tax sparing credits to developing countries. (Tax sparing is an arrangement in which the host country reduces its tax imposed on investments made by a foreign business and the home country agrees to reduce its tax on the income generated by the investment.) By not benefiting from tax holidays available in a host country, U.S. multinationals may face a much higher effective tax rate on foreign investment in that country than firms from other countries with treaties which recognize tax sparing credits.

5. U.S. Local vs. Foreign Firms in the U.S.

While the main focus of this paper is on U.S. firms investing abroad, the preceding discussion of the dividend-imputation scheme has implications for the competitiveness of foreign firms operating in the U.S. as well. Because of the tax costs associated with international investment, foreign firms investing in the U.S. may have a comparative disadvantage relative to local U.S. firms. This may be a mirror image of the situation of U.S. multinationals competing with local firms in foreign markets as discussed in section 3.

Column (1) of Table 4 indicates that when parent retained earnings are used as the source of funds in all cases, U.S. local firms have a cost of capital advantage over foreign investors in the U.S. (7.6% vs. a foreign average of 9.7% in column (1)). Even firms from a country whose cost of capital for domestic investment is lower than that for U.S. domestic investment (see column (1) of Table 2: France, the Netherlands, Sweden, and Switzerland) face a higher cost of capital than that for local U.S. firms. Note that Japanese and German firms face a relatively high cost of capital (10.7% and 10.9%).

Once dividend credit effects are recognized, however, U.S. domestic firms may no longer have a cost of capital advantage over firms from countries with a dividend credit scheme. Column (2) of Table 4 shows that U.S. local firms can face a serious tax disadvantage when

Table 5
Advantage of Local Financing

	Transfer of parent equity (Column 1)	Subsidiary retained earnings (Column 2)	Local debt financing (Column 3)	Tax cost of not using sub. ret. ear. (Column 4*)	Tax cost of not using local debt (Column 5**)
U.S. domestic	7.6	7.6	2.6	0.0	5.0
Japan	10.6	9.0	1.6	1.6	9.0
Canada	9.5	8.1	3.5	1.4	6.0
France	9.7	7.3	3.2	2.4	6.5
Germany	8.3	9.5	0.6	-1.2	7.7
Netherlands	7.8	7.1	2.8	0.7	5.0
U.K.	8.6	7.7	3.5	0.9	5.1
Italy	9.9	9.1	1.9	0.8	8.0
Sweden	8.8	7.2	3.6	1.6	5.2
Switzerland	8.2	6.6	3.1	1.6	5.1
Australia	11.5	9.0	3.6	2.5	7.9
Average (foreign investment)	9.3	8.1	2.7	1.2	6.6

* Column 1 minus Column 2.
** Column 1 minus Column 3.

competing with foreign firms whose domestic shareholders can possibly claim dividend credits for foreign source dividends.

6. Implications for Financing Policy

In the face of a high cost of capital for foreign investment financed through equity transfers by the parent, the subsidiary may seek alternative sources of funds. First, parent transfers can be made with debt instead of equity. Since interest payments face lower withholding taxes than dividends in many cases, debt transfers are often a cheaper way of financing the subsidiary.

Domestic subsidiaries of foreign corporations may also rely heavily on debt raised in the host country. Local borrowing, which is ignored by most previous studies on foreign investment, has been an important source of funds for foreign investment. At the end of 1989, the share of local and other foreign borrowing in total external finance for U.S. firms operating abroad was 60.3 percent. The corresponding figure for foreign firms operating in the U.S. was 71.2 percent.

Column (3) of Table 5 shows that the cost of capital for foreign investment financed by local borrowing is much lower than that for equity financing. The deduction benefits are proportional to the marginal corporate tax rate in a country so that debt financing is particularly attractive in Japan and Germany because of their relatively high corporate tax rates.

Column (5) indicates that the tax cost of not using debt is much higher for foreign investment than domestic investment. For domestic investment in the U.S., the tax cost of using equity financing is 5.0 percent. For U.S. firms operating in Japan, the cost can be as large as 9.0 percent.

In addition, the nontax cost of using debt may be less for foreign investment than domestic investment. A multinational may face less risk of default since it can pool relatively independent risks from its worldwide operations and use its combined assets as collateral for loans, thereby borrowing at lower interest rates than can purely domestic businesses. Further, foreign borrowing is an important means of hedging against exchange risks associated with foreign source income.

When borrowing abroad, a U.S. multinational may have an incentive to concentrate its borrowing where tax benefits are large. Japan, Germany, Italy, and maybe Australia are more attractive places for foreign borrowing for U.S. firms than Canada, France, the Netherlands, the U.K., Sweden, and Switzerland as far as taxes are concerned. This observation has become more relevant as integrated world capital markets have narrowed differences in borrowing costs between countries.

If, for some nontax reasons, a U.S. firm must finance foreign investment using an equity source, subsidiary retained earnings are typically cheaper than parent equity transfers, except in Germany where split corporate tax rates discriminate against retained earnings (column (4)). Note, however, that the cost of capital for investment financed through subsidiary retained earnings reported in this study implicitly assumes that home country taxes on unrepatriated earnings can be deferred. This assumption may not always be warranted because the U.S. has maintained a tough stance toward the deferral practice of U.S. multinationals.

7. Conclusions

Tax rules related to international investment significantly raise the cost of capital for foreign investment. The tax

costs associated with foreign investment will easily put foreign subsidiaries in a disadvantageous position relative to local companies. The extent to which tax rules raise the cost of capital for foreign investment varies across investor countries. Firms from countries with a dividend imputation scheme may possibly face a lower cost of equity transfers than those from countries without an integrated system like the U.S.

The evidence presented in this paper suggests that other things being equal, corporate tax rules related to foreign investment impose on U.S. firms operating in major foreign markets about a 20 percent higher cost of capital than domestic firms in the U.S. when U.S. source equity capital is used as the marginal source of investment funds. As a result, these U.S. firms may very likely face a higher cost of capital than local firms in foreign markets. U.S. firms may also face a cost of capital disadvantage vis-a-vis firms from other countries in a given foreign market, partly due to the absence of a dividend imputation scheme in the U.S. and partly due to relatively strict U.S. rules regarding the exemption or deferral of home country tax on foreign source income and foreign tax credit utilization. U.S. firms might be put in a disadvantageous position even in domestic markets due to relatively unfavorable domestic tax rules, such as the lack of integration of personal and corporate taxation.

These findings are based on the assumption that there are no cost of funds differentials between countries. Thus, the negative impact of international tax rules on the cost of capital is an addition to the much heralded cost of funds disadvantage in the U.S. As the increasing international integration of financial markets narrows the cost of funds differentials between countries, tax rules will play a relatively more important role in determining the cost of capital for U.S. firms investing in world markets.

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