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Comment

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The corporate income tax introduced in 1913 was based on total income from domestic and foreign sources; while foreign income taxes could be deducted from U.S. taxable income, foreign-source income was initially subject to international double taxation. In 1918 Congress allowed taxpayers to credit foreign income taxes against their U.S. tax liability to alleviate the double taxation, and shortly thereafter subjected the foreign tax credit to a limitation to assure that foreign taxes could not be used to reduce U.S. taxes on domestic income.

The nature of this limitation has been altered on numerous occasions over the last 60 years. From 1954 to 1961, for example, corporations were required to calculate a separate limitation for foreign taxes paid in each country from which they derived income. Then, in 1961, they could elect a single, overall limitation on their creditable taxes from all foreign countries. Under the overall method, excess taxes from high-tax countries [1] could offset the

[1] A "high-tax" country, according to our use of the term, is one whose income, withholding, and other creditable taxes are larger than the tentative U.S. taxes on that income and, thus, one generating excess tax credits. A "low-tax" country is one for which the opposite is true. Because of the intricacies of foreign and U.S. tax laws, a specific country (e.g., the United

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U.S. tax liability on income from low-tax countries. The per-country method was preferred by only those investors with large branch losses in certain countries and taxable income in others (e.g., a petroleum company with substantial drilling and exploration expenses in areas of new production and income from marketing and shipping operations elsewhere.)[2] With the Tax Reduction Act of 1975, corporations had to use the overall method in computing their foreign tax credit for petroleum-related income; the Tax Reform Act of 1976 made the overall method mandatory for all foreign-source income.

In addition to reducing corporations' ability to write off foreign branch losses against domestic income, the overall method is considerably easier to administer than the per-country method. Transfer prices for transactions among the foreign affiliates of a U.S. investor tend to have a larger impact on the foreign tax credit under the per-country method than under the overall method. When the overall method is used, close adherence to an "arm's length" standard is less important, and the accounting requirements on U.S. investors and the auditing demands on the Internal Revenue Service are eased.

From a public policy standpoint, however, the overall method may have certain undesirable side effects. When corporations have an overall deficit of tax credits (i.e., creditable foreign taxes are less than the overall limitation), foreign countries can increase their taxes on U.S. investors and know that some or all of the increase will be passed on to the U.S. Treasury. Conversely, when corporations have an overall surplus of foreign tax credits, foreign countries can attract U.S. investment with low tax rates, liberal depreciation allowances, tax holidays, and other such income tax incentives. The U.S. investor, after paying the minimal foreign taxes, can repatriate all its income to the United States

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Kingdom) may be a high-tax country for one U.S. investor and a low-tax country for another.

[2] A corporation using the per-country method could deduct foreign branch losses from domestic U.S. income and thereby relieve its domestic U.S. taxes by 48 percent of the loss and still claim a foreign tax credit subject to the per-country limitation for taxes paid or deemed paid elsewhere. If the corporation elected the overall method, however, all foreign losses would have to be deducted from foreign income, which would reduce the overall limitation on the foreign tax credit. Thus, the total foreign tax credit could be higher under the per-country method than under the overall method.

without paying any additional U.S. taxes: its excess tax credits will shelter such income from U.S. taxation. New investment patterns may reflect tax savings and not just the underlying economic returns. Countries may be tempted to use tax policy to compete with one another for a larger share of international investment to the mutual disadvantage of all. Under the per-country method, however, U.S. taxes on foreign investment income can be deferred only as long as earnings are retained overseas, so the significance of foreign tax concessions to U.S. investors is diminished.

Analysis

How important is the difference between the overall and the per-country method? What would happen if the United States were to require corporations to use the per-country method? In theory, the difference could be substantial. If creditable foreign taxes in high-tax countries are considerably larger than the U.S. taxes tentatively due on that income, while those in low-tax countries are significantly less, the spillover of excess tax credits from the former to the latter could be substantial.

While individual U.S. investors may find themselves in extreme positions, the available statistics on foreign income and withholding tax rates suggest the difference between high- and low-tax countries is often small. Column (a) of table 1 shows the "realized" income tax rate for U.S. manufacturing subsidiaries in various foreign countries in 1974.[3] In determining the portion of foreign income taxes creditable against their U.S. tax liability, corporations must recompute their subsidiaries' earnings using U.S. Internal Revenue Service accounting concepts and definitions, and the realized tax rate is the average ratio of subsidiaries' foreign income taxes to those earnings. Column (b) indicates the withholding tax rates applied to dividends paid to U.S. investors in 1974. For example, if a typical Canadian manufacturing subsidiary earned $100 (using the IRS definitions), it would have paid Canadian income taxes of $41.10. If it then distributed one-half of its after-tax earnings of $58.90, it would have to pay 15 percent of its $29.45 dividend, or $4.42, in Canadian withholding taxes. The U.S. parent's net dividend would be $25.03, and total

[3] The realized tax rates were originally computed by M. E. Kyrouz, "Foreign Tax Rates and Tax Bases," *National Tax Journal*, 28:1 (March 1975), pp. 61–80 and were updated in the U.S. Department of the Treasury, *U.S. Taxation of the Undistributed Income of Controlled Foreign Corporations*, April 1976, pp. 39–41.

TABLE 1.—*Average foreign and U.S. taxes on subsidiary earnings in various countries under the overall and the per-country limitation on the foreign tax credit, 1974*

Country	Realized corporate income tax rate (a)	Withholding tax rate (b)	Creditable foreign taxes as % of grossed-up dividends (c)	Surplus foreign tax credit as % of grossed-up dividends (d)	Global taxes as % of subsidiary earnings if overall surplus* (e)	Global taxes as % of subsidiary earnings if overall deficit* (f)	Global taxes as % of subsidiary earnings if per-country* (g)	Additional U.S. taxes if initial overall surplus* (h)	Additional U.S. taxes if initial overall deficit* (i)
Canada	41.1	15.0	49.9	1.9	45.5	44.6	45.5	0.0	1.0
Austria	53.4	5.0	55.7	7.7	54.6	50.7	54.6	0.0	3.9
Belgium	37.5	15.0	46.9	—1.1	42.2	42.8	42.8	0.6	0.0
Denmark	32.5	5.0	35.9	—12.1	34.2	40.3	40.3	6.1	0.0
France	48.0	5.0	50.6	2.6	49.3	48.0	49.3	0.0	1.3
Germany	43.0	15.0	51.5	3.5	47.3	45.5	47.3	0.0	1.8
Greece	11.9	30.0	38.3	—9.7	25.1	29.9	29.9	4.8	0.0
Ireland	12.7	5.0	17.1	—30.9	14.9	30.3	30.3	15.5	0.0
Italy	41.9	5.0	44.8	—3.2	43.4	44.9	44.9	1.6	0.0
Luxembourg	17.1	5.0	21.2	—26.8	19.2	32.6	32.6	13.4	0.0
Netherlands	36.0	10.0	42.4	—5.6	39.2	42.0	42.0	2.8	0.0
Norway	40.5	15.0	49.4	1.4	45.0	44.3	45.0	0.0	0.7
Spain	30.3	15.0	40.8	—7.2	35.5	39.1	39.1	3.6	0.0
Sweden	43.1	5.0	45.9	—2.1	44.5	45.6	45.6	1.0	0.0
Switzerland	27.1	5.0	30.7	—17.3	28.9	37.6	37.6	8.6	0.0

United Kingdom	44.6	15.0	52.9	4.9	48.8	46.3	48.8	0.0	2.5
Australia	42.9	15.0	51.5	3.5	47.2	45.4	47.2	0.0	1.7
New Zealand	51.7	5.0	54.1	6.1	52.9	49.8	52.9	0.0	3.1
Mexico	42.2	20.0	53.8	5.8	48.0	45.1	48.0	0.0	2.9
Argentina	28.2	12.0	36.8	—11.2	32.5	38.1	38.1	5.6	0.0
Brazil	30.3	25.0	47.7	—0.3	39.0	39.1	39.1	0.1	0.0
Chile	39.4	40.0	63.6	15.6	51.5	43.7	51.5	0.0	7.8
Colombia	47.3	20.0	57.8	9.8	52.6	47.6	52.6	0.0	4.9
Ecuador	18.7	40.0	51.2	3.2	35.0	33.3	35.0	0.0	1.6
Peru	47.7	30.0	63.4	15.4	55.5	47.8	55.5	0.0	7.7
Uruguay	25.2	25.0	43.9	—4.1	34.5	36.6	36.6	2.1	0.0
Venezuela	30.0	15.0	40.5	—7.5	35.3	39.0	39.0	3.8	0.0
Costa Rica	33.7	15.0	43.6	—4.4	38.7	40.8	40.8	2.2	0.0
El Salvador	7.6	38.0	42.7	—5.3	25.2	27.8	27.8	2.6	0.0
Guatemala	21.0	10.0	28.9	—19.1	24.9	34.5	34.5	9.6	0.0
Honduras	25.2	5.0	28.9	—19.1	27.1	36.6	36.6	9.5	0.0
Nicaragua	1.8	0.0	1.8	—46.2	1.8	24.9	24.9	23.1	0.0
Panama	15.4	10.0	23.9	—24.1	19.6	31.7	31.7	12.1	0.0
Algeria	0.0	18.0	18.0	—30.0	9.0	24.0	24.0	15.0	0.0
Morocco	54.5	25.0	65.9	17.9	60.2	51.3	60.2	0.0	8.9
Liberia	5.7	15.0	19.8	—28.2	12.8	26.8	26.8	14.1	0.0
Ethiopia	38.6	0.0	38.6	—9.4	38.6	43.3	43.3	4.7	0.0
Kenya	19.0	12.5	29.1	—18.9	24.1	33.5	33.5	9.4	0.0
Nigeria	4.7	15.0	19.0	—29.0	11.8	26.3	26.3	14.5	0.0
Rhodesia	30.9	15.0	41.3	—6.7	36.1	39.4	39.4	3.4	0.0
South Africa	41.9	15.0	50.6	2.6	46.3	44.9	46.3	0.0	1.3
Zambia	28.0	15.0	38.8	—9.2	33.4	38.0	38.0	4.6	0.0
Iran	10.5	60.0	64.2	16.2	37.3	29.3	37.3	0.0	8.1
Israel	44.7	30.0	61.3	13.3	53.0	46.3	53.0	0.0	6.6
Lebanon	15.1	10.0	23.6	—24.4	19.3	31.5	31.5	12.2	0.0

TABLE 1.—*Average foreign and U.S. taxes on subsidiary earnings in various countries under the overall and the per-country limitation on the foreign tax credit, 1974*—Continued

Country	Realized corporate income tax rate (a)	Withholding tax rate (b)	Creditable foreign taxes as % of grossed-up dividends (c)	Surplus foreign tax credit as % of grossed-up dividends (d)	Global taxes as % of subsidiary earnings if overall surplus* (e)	Global taxes as % of subsidiary earnings if overall deficit* (f)	Global taxes as % of subsidiary earnings if per-country* (g)	Additional U.S. taxes if initial overall surplus* (h)	Additional U.S. taxes if initial overall deficit* (i)
Sri Lanka	21.2	39.3	52.2	4.2	36.7	34.6	36.7	0.0	2.1
India	57.0	25.7	68.1	20.1	62.5	52.5	62.5	0.0	10.0
Malaysia	27.9	40.0	56.7	8.7	42.3	37.9	42.3	0.0	4.4
Pakistan	52.6	15.0	59.7	11.7	56.2	50.3	56.2	0.0	5.9
Philippines	29.6	35.0	54.2	6.2	41.9	38.8	41.9	0.0	3.1
Sinapore	29.6	40.0	57.8	9.8	43.7	38.8	43.7	0.0	4.9
Taiwan	6.0	10.0	15.4	—32.6	10.7	27.0	27.0	16.3	0.0
Thailand	14.9	25.0	36.2	—11.8	25.5	31.4	31.4	5.9	0.0
Hong Kong	15.5	0.0	15.5	—32.5	15.5	31.8	31.8	16.3	0.0
Japan	47.4	10.0	52.7	4.7	50.0	47.7	50.0	0.0	2.3
Indonesia	36.4	20.0	49.1	1.1	42.8	42.2	42.8	0.0	0.6
Bahamas	5.1	0.0	5.1	—42.9	5.1	26.5	26.5	21.4	0.0
Bermuda	0.3	0.0	0.3	—47.7	0.3	24.1	24.1	23.8	0.0
Neth. Antilles	4.5	0.0	4.5	—43.5	4.5	26.3	26.3	21.8	0.0
Dominican Republic	21.7	18.0	35.8	—12.2	28.7	34.8	34.8	6.1	0.0

Jamaica	22.6	37.5	51.6	3.6	37.1	35.3	37.1	0.0	1.8
Puerto Rica	12.2	15.0	25.4	—22.6	18.8	30.1	30.1	11.3	0.0
Trinidad & Tobago	36.7	10.0	43.0	—5.0	39.9	42.3	42.3	2.5	0.0

Source: Realized corporate income tax rates and withholding tax rates were obtained from: Department of the Treasury, *U.S. Taxation of the Undistributed Income of Controlled Foreign Corporations,* April 1976, table 3, pp. 39–41. Other rates were derived using procedures summarized in table 2.

* Rate assumes the subsidiary distributes one-half of its earnings net of foreign income taxes.

taxes paid to the Canadian government would amount to $45.52. (These calculations are summarized in table 2.)

To determine its U.S. tax liability on its Canadian income, the U.S. investor would proceed as follows. First, the Canadian dividend would be grossed up to include that portion, 50 percent of its Canadian income tax that can be allocated to the dividend, so its Canadian-source income is $50.00 for U.S. tax purposes. Its creditable Canadian taxes equal 50 percent of its subsidiary's income taxes plus the entire withholding taxes; the sum of the two is $24.97. Its tentative U.S. tax liability on that income is 48 percent, the U.S. income tax rate, of the $50.00 grossed-up dividend, or $24.00. Thus, it has a $.97 surplus tax credit.

Under the overall method the investor goes on to determine whether its creditable foreign taxes from all countries exceeds or falls short of its tentative U.S. tax liability on all its foreign-source income. If it has an overall *surplus* of foreign tax credits (i.e., if total creditable foreign taxes exceed its tentative U.S. tax liability on its total foreign-source income), it pays no additional

TABLE 2.—*Canadian and U.S. taxes paid by a typical Canadian manufacturing affiliate distributing 50% of its after-tax earnings under alternative limitations on the foreign tax credit*

Item	Amount
(1) Pre-tax earnings (U.S. IRS accounting rules)	$100.00
(2) Canadian corporate income tax	$ 41.10
(3) Subsidiary's after-tax earnings [(1) minus (2)]	$ 58.90
(4) Dividend paid to U.S. parent [50% of (3), by assumption]	$ 29.45
(5) Canadian withholding tax [15% of (4)]	$ 4.42
(6) Net dividend received by parent [(4) minus (5)]	$ 25.03
(7) Grossed-up dividend includable in U.S. investor's foreign-source income [(4) plus 50% of (2), or 50% of (1)]	$ 50.00
(8) Potential U.S. foreign tax credit [(5) plus 50% of (2)]	$ 24.97
(9) Tentative U.S. tax liability [48% of (7)]	$ 24.00
(10) Foreign tax credit surplus [(8) minus (9)]	$ .97
(11) Total Canadian and U.S. tax with overall surplus of tax credits [(2) plus (5)]	$ 45.52
(12) Total Canadian and U.S. tax with overall deficit of tax credits [(11) minus (10)]	$ 44.55
(13) Total Canadian and U.S. tax if per-country method is used [larger of (11) and (12)]	$ 45.52
(14) Additional U.S. taxes if investor must use the per-country method and had an initial overall surplus of foreign tax credits [(13) minus (11)]	$ .00
(15) Additional U.S. taxes if investor must use the per-country method and had an initial overall deficit of foreign tax credits [(13) minus (12)]	$ .97

U.S. tax on any of its foreign-source income. The global (Canadian plus U.S.) tax burden would equal the $45.52 paid to the Canadian government. If the investor had an overall *deficit* of foreign tax credits, however, it could apply the $.97 Canadian surplus against its U.S. tax liability on income from lower-tax countries. Thus, its global tax burden on Canadian income would be reduced by the $.97 surplus to $44.55. Under the overall method, the global tax burden on income from any one country depends on the investor's overall tax situation.

Under the per-country method, however, a surplus tax credit could not be applied to other foreign-source income, whereas a deficit must be paid to the U.S. Treasury. The global tax burden is the *larger* of the two rates calculated above: the one assuming an overall surplus, the other an overall deficit. If the per-country method replaced the overall method, the U.S. and the global tax liability on Canadian-source income would go up if and only if the investor initially had an overall deficit of foreign tax credits. Had we considered a subsidiary in a country with a deficit of foreign tax credits (e.g., Belgium), the U.S. and the global tax liability would have increased if and only if the investor initially had an overall surplus of foreign tax credits.

With this in mind, let us look again at table 1. Of the 63 countries for which income and withholding tax rates are available, 26 would tend to generate surplus foreign tax credits, and the remaining 37 a deficit of foreign tax credits. This we can see in column (c), which indicates the creditable foreign taxes as a percentage of grossed-up dividends, and in column (d), which shows the surplus (or, if negative, the deficit) of creditable foreign taxes over the tentative U.S. tax liability on that income. At the high end of the spectrum is India, whose 57.0 percent income tax and 25.7 percent withholding tax combine to generate creditable taxes equal to 68.1 percent of grossed-up dividends; at the low end is Bermuda, where income is virtually untaxed. But these extremes are not very representative of high- and low-tax countries generally. By a straight numerical count, over half of the countries generate foreign tax credits in the range of 35 to 60 percent of grossed-up dividends. If countries were weighted by their importance as host to new or existing U.S. manufacturing investment, the dispersion would be even less.

In column (e) of table 1 we have shown the total income and withholding tax rates paid to the foreign government when a subsidiary distributes half of its after-tax earnings as dividends. These rates indicate the global tax burden when the investor has

an overall surplus of foreign tax credits. If the investor has an overall deficit of foreign tax credits, its global tax burden on income from the high-tax countries is reduced by its surplus tax credits from those countries, while the global burden on income from low-tax countries is increased by the amount of its deficit. These rates are shown in column (f) of table 1.

If U.S. corporations were required to use the per-country rather than the overall method, they would be unable to apply excess tax credits from high-tax countries against the surplus from low-tax countries. The qualitative impact is summarized in table 3. If the corporation had an initial overall surplus, the tax burden on income from high-tax countries would be unchanged, but the tax burden on income from low-tax countries would increase. If the corporation had an initial overall deficit, the burden on income from high-tax countries would be increased, while the burden on income from low-tax countries would be unaffected. In either instance, U.S. taxes increase, but the impact is on low-tax countries in the former instance and high-tax countries in the latter.

In interpreting table 3, the reader should realize that our conclusions characterize not only the formula for calculating the increase in a corporation's tax liability, but also the impact on the tax burden on *additional* investments in high- vs. low-tax countries. For example, a corporation with excess foreign taxes could calculate the total tax saving of the overall limitation by ignoring its investments in high-tax countries and looking only at its investments in low-tax countries. Similarly, the tax consequences of additional investment in the high-tax countries would be the same

TABLE 3.—*Summary of the impact of requiring the per-country rather than the overall method of calculating the limitation on the U.S. foreign tax credit*

	Impact on U.S. corporations whose creditable foreign taxes currently exceed the overall limtation	Impact on U.S. corporations whose creditable foreign taxes currently are less than the overall limitation
Investments in high-tax countries	Tax burden unchanged	Tax burden increased by excess of creditable taxes over per-country limitation
Investments in low-tax countries	Tax burden increased by excess of per-country limitation over creditable foreign taxes	Tax burden unchanged

as it had been under the overall limitation, but the tax burden on additional investments in the low-tax countries would be increased by the application of a per-country limitation.

The magnitude of the tax increase for a subsidiary distributing half of its after-tax income as dividends is shown in columns (h) and (i) of table 1. For a U.S. investor with a current overall surplus of tax credits, the increase in U.S. taxes on income from low-tax countries ranges from a low of 0.1 percent for Brazilian income to a high of 23.8 percent for Bahamian income. For a U.S. investor with an overall deficit of tax credits, the increase in global taxes on income from high-tax countries ranges from a low of 0.6 percent for Indonesian income to a high of 10.0 percent for Indian income. While these ranges are substantial, the potential increase in countries hosting the bulk of U.S. foreign investment is typically small.

Simulation Results

The impact of moving from the overall to the per-country method would vary substantially from one U.S. investor to another. Corporations differ in the geographical distribution of their global investments, in their ability to take advantage of various provisions of foreign tax laws, in their strategies for repatriating income to the United States, and in a variety of other respects affecting their international tax situations. To gain a rough idea of the consequences of the per-country limitation for a typical U.S. investor, we have constructed a simulation model based on the behavior of a typical U.S. multinational manufacturer.

To keep the model analytically tractable and its parameters estimable, we have made many simplifying assumptions. Using the statistics in table 1, we grouped all countries generating surplus tax credits into a single, high-tax country and all those generating deficits into a single, low-tax country. Although many of the smaller countries in table 1 had to be excluded from our calculations for lack of sufficient data, the 32 included accounted for 97 percent of total capital expenditures by majority-owned affiliates of U.S. manufacturers in 1974. The average characteristics of the high- and low-tax countries are shown in table 4.

As can be seen, realized corporate income tax rates in the 17 high-tax countries averaged 43.0 percent and dividend withholding rates averaged 14.6 percent, so creditable foreign taxes represented 51.3 percent of grossed-up dividends. In the low-tax coun-

TABLE 4.—*Aggregate characteristics of high- and low-tax countries for which data were available, 1974* [1]

Characteristic	High-tax countries [2]	Low-tax countries [3]
Number of countries	17	15
Average income tax rate	43.0%	34.7%
Average dividend withholding tax rate	14.6%	10.3%
Creditable foreign taxes as % of grossed-up dividends	51.3%	41.4%
Average dividend payout rate	44.6%	34.1%
Subsidiaries' before-tax earnings (billion $)	7.73	2.68
New expenditures on property, plant, & equipment (billion $)	8.30	3.09

[1] Based on data on table 8.

[2] High-tax countries included are Canada, France, Germany, United Kingdom, Norway, Japan, Australia, New Zealand, South Africa, Chile, Colombia, México, Peru, India, Indonesia, Iran, and the Philippines.

[3] Low-tax countries included are Belgium, Denmark, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland, Argentina, Brazil, Panama, Venezuela, Bahamas, Liberia, and Nigeria.

tries, income tax rates averaged 34.7 percent and dividend withholding tax rates averaged 10.3 percent, which implies that creditable foreign taxes would represent 41.4 percent of grossed-up dividends. Although a simple average of the two rates for grossed-up dividends (51.3 percent and 41.4 percent respectively) might suggest that the typical investor would have an overall deficit of tax credits, such is not the case. Because the larger, developed countries tend to be high-tax countries, subsidiaries' earnings in those countries represented almost three-fourths of the foreign total. Furthermore, dividend payout rates are notably higher in the high-tax countries (there are obvious tax advantages in repatriating dividends from high-, rather than low-, tax countries), so the end result was an overall surplus of foreign tax credits. Under these circumstances, replacing the overall with the per-country method has the effect of increasing the tax burden on income from the low-tax countries.

The simulation model we have constructed to study the consequences of moving from the overall to the per-country method is rather complex and better left for the appendix. The essential features of our analysis are, however, easy to summarize. The net impact consists of substitution and liquidity effects. If the per-country limitation raises the tax burden on income from low-tax countries, the multinational corporation would limit new investment in those countries and expand investment in the United

States *and in high-tax foreign countries.* (If the investor had an overall deficit of tax credits, the substitution would favor investments in the United States and in low-tax foreign countries and hurt investments in high-tax foreign countries.) Furthermore, the higher taxes paid to the U.S. Treasury leave the investor with fewer funds to finance all new investment, and investment everywhere tends to fall. When these two effects combine, investment in the low-tax country falls, while that in the United States and in high-tax foreign country expands as long as the substitution effect outweights the liquidity effect.

Our projections of the size of these changes are shown in table 5. On the whole, the aggregate effects are small because countries with truly low tax rates are of minimal economic significance. Domestic U.S. investment would expand by 0.8 percent, and investment in high-tax foreign countries would expand by only 0.1 percent. Investment in low-tax foreign countries, which suffers from both substitution and liquidity effects, falls by 6.5 percent. Taxes paid in the United States increase by 1.3 percent, a gain based on the additional taxes on income from low-tax countries and on the increase in domestic U.S. investment. Taxes paid to high-tax foreign countries are virtually unchanged, while those in low-tax countries fall by 1.6 percent. Because the global tax burden on the multinational corporation has increased slightly, consolidated after-tax earnings fall by 0.5 percent.

TABLE 5.—*Projected impact of replacing the overall with the per-country limitation on a typical U.S. manufacturer, 1974*

	Initial value	Induced change	Induced change as % of initial value
Domestic U.S. investment*	36.4	0.27	0.8%
Investment in high-tax foreign countries*	13.3	0.02	0.1%
Investment in low-tax foreign countries*	4.97	—0.32	—6.5%
Consolidated after-tax earnings	12.42	—0.07	—0.5%
Taxes paid in United States	6.11	0.08	1.3%
Taxes paid in high-tax foreign countries	3.61	0.001	0.03%
Taxes paid in low-tax foreign countries	0.99	—0.016	—1.63%

Source: Simulations based on model described in the appendix.
* Includes investment in current assets as well as property, plant and equipment.

These projections are based, of course, on the underlying assumptions of our simulation model. If investment patterns are less sensitive to changes in the after-tax rates of return on investment than we have supposed, the substitution of investment in the United States and in high-tax countries for that in low-tax countries would be less than we have estimated. Likewise, if the multinational is less willing or able to offset higher taxes with higher rates of domestic and foreign borrowing, then the overall rate of global investment would slow more than we have projected. Aggregating high- and low-tax countries tends to conceal some important differences; countries with truly low tax rates on U.S. investment income would be hit the hardest by the per-country limitation. Finally, those U.S. investors who have invested most where income is taxed least would suffer more than those whose primary investments are in high-tax countries. But on the whole, the aggregate effect of moving from the overall to the per-country method would be small, and the effects would be focused on U.S. investments in low-tax countries.

Appendix: Technical Analysis

In this section we set forth the microeconomic model used to estimate the impact of going from an overall to a per-country limitation. The model is an extension of that set forth by Horst.[4] Our notation is summarized in table 6.

Generally speaking, subscript of "1" denotes the U.S. parent's domestic activities, a "2" denotes those in a high-tax country, and a "3" those in a low-tax country. In all cases, the revenues from investments net of all current costs except interest on borrowed funds, R, are assumed to depend on the level of past investments, $\overline{I}$, plus new investment, I:

$$R_i = R_i(\overline{I}_i + I_i), \; i = 1, 2, 3. \tag{1}$$

Local borrowing costs, B, depend on the level of past borrowing, $\overline{L}$, plus new borrowing, L:

$$B_i = B_i(\overline{L}_i + L_i), \; i = 1, 2, 3. \tag{2}$$

The taxable income of the two foreign affiliates equals the difference between investment returns and borrowing costs:

[4] Thomas Horst, "American Taxation of Multinational Firms," *American Economic Review* 67:3 (June 1977). Interested readers should consult this article for a fuller explanation of and justification for the structural equations in the model.

TABLE 6.—*Summary of mathematical notation*

Symbol	Definition
R_i	Total revenue from investments in country i net of all costs except interest and taxes
B_i	Total cost of locally borrowed funds in country i
$\overline{I}_i$	Existing stock of investments in country i
I_i	New investment in country i
$\overline{L}_i$	Existing stock of borrowed funds in country i
L_i	New borrowing in country i
E_i	Taxable income in country i
T_i	Income taxes paid in country i
t_i	Income tax rate in country i
D_i	Dividends paid by affiliate in country i
p_i	Constant ratio of dividends to income after taxes in country i
E_{R_i}	Income retained for reinvestment in country i
W_i	Withholding taxes paid on dividends from country i
w_i	Withholding tax rate in country i
C_i	U.S. foreign tax credit for income received from country i
x	Binary variable equal to unity if investor has an overall surplus of foreign tax credits and equal to zero otherwise
E_{A_i}	After-tax income in country i
E_G	Global consolidated after-tax income of the investor
F_{Pi}	Funds advanced by parent to subsidiary in country i
$\hat{L}_i$	See equation (20) for definition
t_{Ii}	See equation (21) for definition
t_i^*	See equation (22) for definition
r_i	Marginal revenue from investment in country i
b_i	Marginal cost of borrowed funds in country i
a_{ij}	Element of A-matrix in the equations of change; see equation (34)
c_i	Element of c-vector in the equations of change; see equation (34)
Z_i	See equation (39) for definition
r_i'	Derivative of the marginal revenue function for country i
b_i'	Derivative of the marginal cost function for country i

$$E_i = R_i - B_i, \; i = 2, \; 3. \tag{3}$$

Foreign income tax payments, T, equal the foreign tax rate, t, times pre-tax income, E:

$$T_i = t_i E_i, \; i = 2, \; 3. \tag{4}$$

Dividends paid to the U.S. parent, D, are some constant fraction, p, of after-tax earnings:

$$D_i = p_i (1 - t_i) E_i. \tag{5}$$

The retained earnings available for reinvestment, E_R, thus equal:

$$E_{R_i} = (1 - p_i)(1 - t_i)(R_i - B_i), \; i = 2, \; 3. \tag{6}$$

Total withholding taxes paid on dividends, W, equal the withholding tax rate, w, times the value of dividends:

$$W_i = w_i D_i. \tag{7}$$

The U.S. parent's taxable income, E_i, equals its return on domestic investment, R_i, less its domestic borrowing costs, B_i, plus its grossed-up dividends from its foreign affiliates, $p_2 E_2 + p_3 E_3$:

$$E_1 = R_1 - B_1 + p_2 E_2 + p_3 E_3. \tag{8}$$

Its U.S. tax payments T_1, equal the U.S. tax rate, t_1, times its taxable income, less its foreign tax credit, $C_2 + C_3$:

$$T_1 = t_1 E_1 - (C_2 + C_3). \tag{9}$$

If the investor has an overall deficit of tax credits, the U.S. foreign tax credit from country i will equal the dividend withholding taxes, W_i, plus the dividend payout rate, p_i, times the foreign income taxes, T_i. If the investor has an overall surplus of tax credits, the foreign tax credit will equal the U.S. tax rate, t_1, times the grossed-up dividend, $p_i E_i$. If we define a binary variable, x, equal to unity if the investor has an overall surplus of tax credits and equal to zero if the investor has an overall deficit, then we can express the value of the foreign tax credit as follows:

$$C_i = W_i + p_i T_i + x [t_1 p_i E_i - W_i - p_i T_i]. \tag{10}$$

The parent's after-tax earnings will equal its revenues from domestic investments, less its domestic borrowing costs, plus its dividends from its foreign affiliates net of withholding taxes, and less its U.S. tax payments:

$$E_{A_1} = R_1 - B_1 + (D_2 - W_2) + (D_3 - W_3) - T_1. \tag{11}$$

The consolidated after-tax income of the investor can be expressed as the sum of the parent's after-tax income and the retained earnings of the affiliates:

$$E_C = E_{A_1} + E_{R_2} + E_{R_3}. \tag{12}$$

The parent is assumed to distribute dividends to its U.S. shareholders equal to some constant fraction, p_1, of its consolidated after-tax income:

$$D_1 = p_1 E_C. \tag{13}$$

The parent's retained earnings available for reinvestment, E_{R_1} is the difference between its own after-tax income, E_{A_1}, and its distributed dividends, D_1:

$$E_{R_1} = E_{A_1} - D_1. \tag{14}$$

We assume that the objective of the firm is to maximize consolidated after-tax earnings as indicated by equation (12). The levels of past investment and borrowing are taken as given, so the firm is seeking the optimal values for new investment, new borrowing, etc. The multinational investor is constrained, moreover, by the requirement that the sources of funds must equal the uses of funds by the parent and each of the affiliates:

$$I_1 + F_{12} + F_{13} = L_1 + E_{R_1}, \tag{15}$$

$$I_2 = F_{12} + L_2 + E_{R_2}, \tag{16}$$

and

$$I_3 = F_{13} + L_3 + E_{R_3}, \tag{17}$$

where F_{12} and F_{13} are the new funds advanced by the parent to each of the two affiliates. All in all, the multinational has five degrees of freedom in maximizing consolidated after-tax earnings. We will take as our five controls the rates of new investment in each country, I_1, I_2, and I_3, and the rates at which new funds are advanced by the parent to the two affiliates, F_{12} and F_{13}.

The five first-order conditions for maximizing consolidated after-tax earnings are derived by taking the partial derivatives of E_C with respect to the five independent controls. The algebra gets rather messy, so we will describe only the critical steps along the way. The simplest procedure, we believe, begins by recognizing that equations (12) to (14) together imply that:

$$E_C = \frac{E_{R_1} + E_{R_2} + E_{R_3}}{1 - p_1}. \tag{18}$$

The after-tax retained earnings of the parent can be expressed as

$$E_{R_1} = (1 - t_1)(1 - p_1)(R_1 - B_1) + \hat{L}_2 E_{R_2} + \hat{L}_3 E_{R_3}, \tag{19}$$

where

$$\hat{L}_i = \frac{p_i(1 - t_1 - t_{1i}) - p_1(1 - t_i^*)}{(1 - p_i)(1 - t_i)}, \quad i = 2, 3, \tag{20}$$

$$t_{1i}=x[t_i+w_i(1-t_i)-t_1],\ i=2,3, \tag{21}$$

and

$$t_i^*=p_i(t_1+t_{1i})+(1-p_i)t_i,\ i=2,3. \tag{22}$$

By substituting equations (6) and (19) into (18), one can derive the following five first-order conditions for maximizing consolidated after-tax earnings:

$$r_1=b_1, \tag{23}$$

$$r_2=b_2, \tag{24}$$

$$r_3=b_3, \tag{25}$$

$$(1-t_1)b_1=(1-t_2^*)b_2, \tag{26}$$

and

$$(1-t_1)b_1=(1-t_3^*)b_3. \tag{27}$$

Equations (23), (24), and (25) indicate that the marginal return on new investment, r, should equal the marginal cost of locally borrowed funds, b, in each of the three countries in which the multinational may undertake new investment. Because t_i^*, as defined by equation (22), measures the total (U.S. plus foreign) tax burden on income earned by the affiliate in country i, $(1-t_i^*)b_i$ measures the after-tax cost of and return on new investment in country i. Equations (26) and (27) thus indicate that the after-tax return on new investment in the United States should equal the after-tax return on new investment in each of the foreign countries.

To determine the impact of moving from an overall to a per-country limitation on the U.S. foreign tax credit, we proceed as follows. Let us assume that country 2 is a high-tax country, i.e., one for which

$$t_2+w_2(1-t_2)>t_1, \tag{28}$$

whereas country 3 is a low-tax country, and thus

$$t_3+w_3(1-t_3)<t_1. \tag{29}$$

Under a per-country method, the foreign tax credit for income from the high-tax country will be restricted to the U.S. taxes tentatively due on that income:

$$C_2=t_1p_2E_2, \tag{30}$$

while that for income from the low-tax country will be restricted to the dividend withholding taxes paid and the income taxes deemed paid to the low-tax country:

$$C_3=[w_3(1-t_3)+t_3]p_3E_3. \tag{31}$$

If the investor initially had an overall deficit of tax credits, its foreign tax credit from country 3 will be unchanged but its foreign tax credit from country 2 will be reduced (and its U.S. income taxes increased) by an amount equal to:

$$W_2+p_2T_2-t_1p_2E_2=[w_2(1-t_2)+t_2-t_1]p_2E_2. \tag{32}$$

On the other hand, if the investor had an initial surplus of foreign tax credits overall, then its foreign tax credits from the high-tax country would be unchanged, but those from the low-tax country would be reduced (and its U.S. income taxes increased) by an amount:

$$t_1p_3E_3-W_3-p_3T_3=[t_1-t_3-w_3(1-t_3)]p_3E_3. \tag{33}$$

To determine the impact of this tax change on the optimal strategy for the multinational, we must take the total derivatives of the five first-order conditions, equations (23) through (27):

$$\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} & a_{15} \\ a_{21} & a_{22} & a_{23} & a_{24} & a_{25} \\ a_{31} & a_{32} & a_{33} & a_{34} & a_{35} \\ a_{41} & a_{42} & a_{43} & a_{44} & a_{45} \\ a_{51} & a_{52} & a_{53} & a_{54} & a_{55} \end{bmatrix} \begin{bmatrix} dI_1 \\ dI_2 \\ dI_3 \\ dF_{12} \\ dF_{13} \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \\ c_3 \\ c_4 \\ c_5 \end{bmatrix}, \tag{34}$$

where

$$a_{11}=r'_1-b'_1 \tag{35}$$

(the primes, , denote the derivatives of the marginal revenue or cost functions),

$$a_{12}=0, \tag{36}$$

$$a_{13}=0, \tag{37}$$

$$a_{14}=\frac{-b'_1}{Z_1}\left[1-\frac{\hat{L}_2(1-p_2)(1-t_2)b_2}{Z_2}\right], \tag{38}$$

$$Z_i=1-(1-p_i)(1-t_i)b_i,\ i=1,2,3, \tag{39}$$

$$a_{15}=\frac{-b'_1}{Z_1}\left[1-\frac{\hat{L}_3(1-p_3)(1-t_3)b_3}{Z_3}\right], \tag{40}$$

$$a_{21}=0, \tag{41}$$

$$a_{22}=r'_2-b'_2, \tag{42}$$

$$a_{23}=0, \tag{43}$$

$$a_{24}=\frac{b'_2}{Z_2}, \tag{44}$$

$$a_{25}=0, \tag{45}$$

$$a_{31}=0, \tag{46}$$

$$a_{32}=0, \tag{47}$$

$$a_{33}=r'_3-b'_3, \tag{48}$$

$$a_{34}=0, \tag{49}$$

$$a_{35}=\frac{b'_3}{Z_3}, \tag{50}$$

$$a_{41}=-(1-t_1)\,b'_1, \tag{51}$$

$$a_{42}=(1-t^*_2)\,b'_2, \tag{52}$$

$$a_{43}=0, \tag{53}$$

$$a_{44}=(1-t_1)\,a_{14}-(1-t^*_2)\,a_{24}, \tag{54}$$

$$a_{45}=(1-t_1)\,a_{15}, \tag{55}$$

$$a_{51}=a_{41}, \tag{56}$$

$$a_{52}=0, \tag{57}$$

$$a_{53}=(1-t^*_3)\,b'_3, \tag{58}$$

$$a_{54}=(1-t_1)\,a_{14}, \tag{59}$$

$$a_{55}=(1-t_1)\,a_{15}-(1-t^*_3)\,a_{35}, \tag{60}$$

$$c_1=b'_1(1-p_1)\,[p_2E_2dt_{12}+p_3E_3dt_{13}], \tag{61}$$

$$dt_{12}=(1-x)\,[w_2(1-t_2)+t_2-t_1], \tag{62}$$

$$dt_{13}=x[t_1-w_3(1-t_3)-t_3], \tag{63}$$

$$c_2=0, \tag{64}$$

$$c_3=0, \tag{65}$$

$$c_4=b_2p_2dt_{12}+(1-t_1)\,c_1, \tag{66}$$

and

$$c_5=b_3p_3dt_{13}+(1-t_1)\,c_1. \tag{67}$$

[Equations (62) and (63) are derived from equations (32) and (33)].

By solving the five equations in five unknowns represented by equation (34), one can determine the change in the rates of new investment, dI_1, dI_2 and dI_3, and in the rates of new funds advanced to the subsidiaries, dF_{12} and dF_{13}. The resulting changes in other variables of interest may then be determined as follows:

$$dE_{R_i}=\frac{(1-p_i)\,(1-t_i)\,b_i}{Z_i}dF_{1i},\ i=2,\ 3, \tag{68}$$

$$dE_{R_1}=\frac{(1-t_1)\,(1-p_1)\,b_1}{Z_1}(-dF_{12}-dF_{13})+\hat{L}_2dE_{R_2}+\hat{L}_3dE_{R_3}-(1-p_1)\,(p_2E_2dt_{12}+p_3E_3dt_{13}), \tag{69}$$

$$dE_C=\frac{dE_{R_1}+dE_{R_2}+dE_{R_3}}{1-p_1}, \tag{70}$$

$$d(T_i+W_i)=(t_i+w_i(1-t_i)\,p_i)\frac{dE_{R_i}}{(1-t_i)\,(1-p_i)},\ i=2,\ 3, \tag{71}$$

and

$$dT_1 = \frac{t_1 dE_{R_1}}{(1-p_1)(1-t_1)} + \frac{(t_1+t_{12}-t_2-w_2(1-t_2))p_2 dE_{R_2}}{(1-p_2)(1-t_2)} + \frac{(t_1+t_{13}-t_3-w_3(1-t_3))p_3 dE_{R_3}}{(1-p_3)(1-t_3)} + p_2 E_2 dt_{12} + p_3 E_3 dt_{13}. \quad (72)$$

Our estimate of the impact of replacing the overall method with a per-country method of calculating the limitation on the foreign tax credit described in the text was obtained by substituting the numerical values shown in table 7 into equations (34) through (72). The actual calculations were made using a computer program available on request from the author.

TABLE 7.—*Parameter Estimates Used in Simulation Model of Overall vs. Per-Country Limitation on the Foreign Tax Credit*

Parameter	Estimated value [1]	Source of estimate
t_1	.48	Statutory corporate income tax rate in the United States.
t_2	.430	Weighted average of realized corporate income tax rates in countries generating excess foreign tax credits. See table 6.
w_2	.146	Weighted average of withholding tax rates in countries generating excess foreign tax credits. See table 6.
t_3	.347	Weighted average of realized corporate income tax rates in countries generating deficit foreign tax credits. See table 6.
w_3	.103	Weighted average of withholding tax rates in countries generating deficit foreign tax credits. See table 6.
p_1	.33	Parent's dividend payout rate. This is the ratio of all United States manufacturers' dividends to after-tax earnings. See *Survey of Current Business* 55:10 (October 1975), p. S–20.
p_2	.446	Dividend payout rate for high-tax affiliates. See table 6.
p_3	.342	Dividend payout rate for low-tax affiliates. See table 6.
R_1-B_1	$12.73	Parent's domestic income before taxes. Estimate derived in C. Fred Bergsten, Thomas Horst, and Theodore H. Moran, *American Multinationals and American Interests*, forthcoming, table 6–9.
R_2-B_2	$ 7.73	High-tax affiliates' earnings before taxes. Estimate obtained by grossing up after-tax earnings by realized corporate income taxes. See table 6.

TABLE 7.—*Parameter Estimates Used in Simulation Model of Overall vs. Per-Country Limitation on the Foreign Tax Credit*—Continued

Parameter	Estimated value [1]	Source of estimate
R_3–B_3	$ 2.68	Low-tax affiliates earnings before taxes. Estimate obtained by grossing up after-tax earnings by realized corporate income taxes. See table 6.
I_1	$36.4	New investment by U.S. parent. See Bergsten, Horst, and Moran, op. cit., table 6–9.
I_2	$13.3	New investment by affiliates in high-tax countries. The "capital outlays" shown in table 6 include only property, plant and equipment expenditures of majority-owned affiliates; investments in current assets are excluded. In Bergsten, Horst, and Moran, op. cit., new investment by all manufacturing affiliates was estimated to be $18.3 billion. Because table 6 indicates that new capital outlays by affiliates in high-tax countries represented 42.4 percent of such outlays by all affiliates, our estimate of $7.8 billion equals 42.4 percent of $18.3 billion.
I_3	$ 4.97	New investment by affiliates in low-tax countries. Estimate derived by procedures described immediately above.
F_{12}	$ 1.70	Net capital outflow from U.S. parent to affiliates in the high-tax countries. See table 6.
F_{13}	$ .90	Net capital outflow from U.S. parent to affiliates in the low-tax countries. See table 6.
b_1, b_2, b_3	.09	Marginal cost of borrowed funds in domestic and foreign capital markets. We have arbitrarily assumed this to be 9% per annum.
r'_1	—.00124	Slope of the marginal revenue from new investment schedule. There are no econometric estimates of the elasticity of foreign or domestic investment opportunities. We have arbitrarily assumed that the elasticity equals minus two, which would imply the value of r' indicated.
r'_2	—.00338	See previous note.
r'_3	—.00906	See previous note.
b'_1	.00247	Slope of the marginal costs of new borrowing schedule. Here, too, there are no econometric estimates of the elasticity of the cost of new foreign or domestic borrowing. We have arbitrarily assumed that the elasticity equals plus two, which would imply the value of b' indicated.
b'_2	.00675	See previous note.
b'_3	.01812	See previous note.

[1] $ values given in billions.

TABLE 8.—*After-tax earnings, retained earnings, realized corporate income tax rates, withholding tax rates, net capital outflows, and capital expenditures of manufacturing affiliates of U.S. corporations in selected countries, 1974*

Country	After-tax earnings [2]	Retained earnings [2]	Realized corporate income tax rate [3]	Withholding tax rate [4]	Net capital outflow [2]	Capital expenditures [5]
COUNTRIES GENERATING EXCESS TAX CREDITS [1]						
Canada	1.792	1.289	.411	.151	.415	2.669
France	0.305	0.185	.48	.05	.277	0.922
Germany	0.768	0.141	.430	.151	.211	1.603
United Kingdom	0.447	0.173	.446	.151	.399	1.639
Norway	0.038	0.032	.405	.151	.007	0.040
Japan	0.219	0.077	.474	.101	.015	0.581
Australia	0.306	0.188	.429	.151	.092	0.303
New Zealand	0.018	0.013	.517	.051	.011	0.011
South Africa	0.098	0.067	.419	.151	.055	0.100
Chile	0.001	—.001	.394	.401	—.007	0.003
Colombia	0.060	0.038	.473	.201	.014	0.047
Mexico	0.257	0.185	.422	.201	.162	0.243
Peru	0.012	—.003	.477	.301	.005	0.006
India	0.025	0.017	.570	.257	.001	0.023
Indonesia	0.009	0.008	.364	.201	.026	0.045
Iran	0.005	0.003	.105	.601	.010	0.006
Philippines	0.045	0.029	.296	.351	.016	0.058
Total	4.406	2.441	---	---	1.709	8.299
Average	-----	-----	.430	.146	-----	-----

TABLE 8.—*After-tax earnings, retained earnings, realized corporate income tax rates, withholding tax rates, net capital outflows, and capital expenditures of manufacturing affiliates of U.S. corporations in selected countries, 1974*—Continued

Country	After-tax earnings [2]	Retained earnings [2]	Realized corporate income tax rate [3]	Withholding tax rate [4]	Net capital outflow [2]	Capital expenditures [5]
COUNTRIES GENERATING DEFICIT TAX CREDITS						
Belgium	0.305	0.177	.375	.15	.141	0.522
Denmark	0.004	0.004	.325	.05	.013	0.017
Ireland	0.105	0.066	.127	.05	.038	0.071
Italy	0.322	0.222	.419	.05	.137	0.681
Netherlands	0.301	0.231	.36	.10	.106	0.439
Spain	0.113	0.080	.303	.15	.083	0.254
Sweden	0.091	0.072	.431	.05	.025	0.168
Switzerland	0.141	0.028	.271	.05	.069	0.036
Argentina	—.004	—.023	.282	.12	.014	0.095
Brazil	0.275	0.241	.303	.25	.221	0.710
Panama	0.013	0.008	.154	.10	.018	0.007
Venezuela	0.085	0.047	.300	.15	.040	0.086
Bahamas	0.002	.002	.051	.00	—.006	0.002
Liberia	—.004	—.004	.057	.15	.003	0.000
Nigeria	0.002	0.002	.047	.15	.001	0.004
Total	1.750	1.152	---	--	.903	3.092
Average	-----	-----	.347	.103	---	-----

[1] A country was deemed to generate surplus tax credits if the withholding tax plus the deemed-paid income tax as a proportion of "grossed-up" dividends exceeded 48 percent, the statutory U.S. income tax rate. See table 1.

[2] After-tax earnings, retained earnings, and net capital outflow are reported in *Survey of Current Business* 55:10 (October 1975), pp. 63, 57, and 55, respectively.

[3] The average realized corporate tax rates are computed using countries' grossed-up dividends (the difference between after-tax earnings and reinvested earnings divided by one minus the realized corporate tax rate) as weights. Countries' realized corporate income tax rates are identical to those shown in table 1.

[4] The average withholding tax rates are computed using countries' dividends (the difference between after-tax earnings and reinvested earnings) as weights. Withholding tax rates are identical to those shown in table 1.

[5] Capital expenditures are shown in *Survey of Current Business* 56:3 (March 1976), p. 22.

COMMENT

George F. Kopits, International Monetary Fund

With his analysis of the methods of computing the ceiling on the U.S. foreign tax credit, Thomas Horst makes yet another welcome contribution to the literature on the taxation of foreign-source corporate income. His paper focuses on the measurement of the impact of a hypothetical shift from the currently used overall limitation to the per-country limitation. To this end, Horst first extends the model on the multinational firm that he developed earlier [1] to a three-country case (the parent operating in the home country, a subsidiary in a high-tax host country, and another in a low-tax host country) and then simulates the effect of the tax change on investment, earnings, and tax payments of U.S. multinational companies.

The model compares very favorably with others of its kind,[2] particularly in that it allows for the simultaneous determination of several of the firm's principal decision variables at home and abroad (investment in each location and outflow of funds from the parent to each subsidiary). There are, of course, certain simplifying assumptions, such as fixed dividend-payout ratios and fixed financial structure.[3] As for the simulation, there is a potential danger in the use of a parametric approach rather than the direct estimation of behavioral relationships subject to statistical significance tests. Nevertheless, the numerical results seem plausible in terms of both direction and magnitude. Notably, as a consequence of the switch to the per-country limitation in 1974, U.S. tax payments would have increased by $80 million, equivalent to a rise of about 1.5 percentage points in the tax burden on taxable foreign-source income of American manufacturing enterprises—the principal users of the overall limitation until the recent elimination of the per-country limitation. This is far smaller than the

[1] See Horst (1977 and Bergsten, Horst, and Moran (forthcoming, ch. 6).
[2] See the review by Kopits (1976).
[3] A less severe constraint is the absence of intrafirm payments of interest and head-office charges, provided for in the earlier version of the model.

The views expressed do not necessarily represent those of the International Monetary Fund.

revenue estimates from two previous studies that failed to take into account the companies' response to the tax change.[4]

Horst's computations also indicate that the switch would lead to an insignificant rise in taxes paid in high-tax host countries and a slight decline in low-tax host countries. These effects on the tax liability would be accompanied by a very small increase in investment (less than 1 percent) in the home country and in high-tax host countries, and a larger drop (6.5 percent) in investment in low-tax host countries. This is an interesting outcome that, as the author points out, is consistent with a priori expectations according to which, given the enterprises' initial surplus of tax credits, the U.S. tax burden on marginal income from low-tax countries increases, while that on income from high-tax countries remains unchanged. If, instead, the firms initially had insufficient tax credits to offset the U.S. tax under the overall limitation, the tax burden would rise only on marginal income from high-tax host countries, thus causing an expansion of investment in the United States and in low-tax countries, and a reduction of investment in high-tax countries.

Although clearly the thrust of the paper is the simulation exercise, it is appropriate to explore (in light of the reported findings) the merits of different methods of tax credit limitation, particularly under various efficiency and equity criteria. The size of the tax-induced changes estimated with the model suggests that only a modest distortion in global resource allocation is attributable to alternative limitation methods; yet, given a wide dispersion of tax rates across some countries, the distortion is likely to be concentrated among particular host countries and investors.

In this regard, it might be interesting to identify the optimal limitation method from the standpoint of worldwide efficiency, ordinarily to be maximized through capital-export neutrality.[5] Curiously, the latter is approximated under the per-country limitation with respect to income from low-tax countries (assuming current taxation of foreign-source income), but not from high-tax countries because of the lack of a home refund for the excess of the host tax over the home tax. On the other hand, the overall limitation coupled with the carryover provisions (which permit

[4] Although their results are only roughly comparable to Horst's estimates, Musgrave (1972, p. 217) found that in 1964 the changeover to the per-country limitation would have raised U.S. tax payments by $150 million, or 2.7 percent of taxable foreign-source income, and Shapiro and Klock (1973–1974, p. 138) calculated for 1978 a tax increase of $180 million, or 2.9 percent of taxable foreign-source income.

[5] For a discussion of necessary conditions, see Musgrave (1969, pp. 109–121).

the carryforward of surplus credits to five suceeding years and carryback to two preceding years) tend to average the tax burden on all foreign-source income. This may amount to a refund for the excess host tax, thus approaching capital-export neutrality for the decision between home investment and all foreign investments taken as a whole. At the same time, however, on a country-by-country basis, the overall limitation may result in a departure from neutrality with respect to low-tax country income, shielded from the home tax by tax credits generated with high-tax country income. But this nonneutral element can be mitigated to an extent by elimination of the tax deferral on foreign subsidiary earnings,[6] as the firm is likely to incur an overall deficit of tax credits after such a move. It is unfortunate that whatever neutrality is brought about by the overall limitation is done at the cost of sacrificing equity between the large, geographically diversified investor who can make much better use of the limitation, and the investor who operates in only a handful of countries.

In conclusion, the Treasury Department must be commended for sponsoring the building of versatile policy-oriented models. It is hoped that this effort will be sustained and thus materialize in an operational model (periodically improved and run on up-to-date information), that could become a useful contribution to policymaking in the international tax area.

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[6] Current taxation of certain subsidiary earnings under the Subpart F income provisions of the U.S. Internal Revenue Code comprises a step in this direction.