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Multinational corporations have grown rapidly since the late 1950s and have become an important factor affecting international economic events. In the past 30 years, interest groups periodically have argued that the foreign investments of U.S.-based multinationals are made at the expense of domestic investment and that current U.S. tax laws encourage foreign investment; to promote domestic growth and employment, they argue, Congress should raise taxes on foreign-source corporate earnings relative to taxes on domestic-source corporate earnings. This article examines current U.S. tax policies governing foreign-source corporate earnings to determine whether these policies encourage direct foreign investment relative to domestic investment. The article also considers how a multinational firm might alter its investment behavior in response to higher taxes on its foreign earnings.

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The U.S. unemployment insurance system operates through plans under the primary control of the individual states. Consequently, taxes, benefits, and eligibility requirements vary greatly throughout the nation. Nevertheless, the design of the entire system falls short of permitting employers or employees from choosing among different levels of insurance coverage, as their own circumstances warrant. A private system of unemployment insurance, through competition among insurers, could provide much more flexibility to participants than the current insurance system. A private system, however, is likely to be far less effective as an instrument for attaining certain social welfare objectives. A close examination of the characteristics of public and private insurance systems reveals trade-offs between individual choice and social welfare that should be considered.

U.S. Taxation of Foreign-Source Corporate Income: A Survey of Issues

by Owen F. Humpage

The relationship between taxes and corporate investment behavior has been well-researched in the economics literature. The focus usually has been on domestic taxes and investment in a closed economy. Many U.S. firms, however, are part of a multinational production and sales network, and tax considerations influence various aspects of their financial and investment behavior.

The growth of the multinational corporation has been quite rapid, particularly since the late 1950s. The influence of foreign investment and the multinational firm on various economic phenomena, particularly domestic growth, employment, and the balance of payments, has generated much controversy. Many issues have not been resolved, and various groups continue to support government curbs on the foreign investments of U.S. multinational firms.

This article examines how and to what extent U.S. tax laws influence financial and investment decisions of U.S.-based multinational firms. Part I details the major provisions of U.S. tax laws governing foreign-source corporate earnings. Part II investigates the relationship between these laws and the investment decisions of multinational firms. Part III explores the prospects for using tax policy to alter the investment behavior of multinational firms.

I. U.S. Taxation of Foreign-Source Business Income

Economists suggest two normative principles for the taxation of foreign-source corporate earnings. First, the tax should avoid international double taxation and remain neutral with respect to the decision of a firm to invest at home versus abroad. Accordingly, the tax on one dollar of domestic-source income should equal the tax on one dollar of foreign-source income. Second, the tax should not destroy

the competitive position of a domestic-based multinational firm relative to its foreign counterparts. In the extreme view, this second principle holds that each dollar earned by a multinational in a foreign market should be subject to the same total tax as its foreign competitors. The first and second criteria would necessarily conflict in a world where nations have different effective tax rates. U.S. tax laws attain an imperfect hybrid of these two criteria through the cumulative effect of a foreign tax credit and a deferral provision.

Foreign Tax Credit

Multinational corporate earnings fall under the legitimate taxing jurisdiction of two or more countries and, consequently, are potentially subject to international double taxation. International convention recognizes the right of the host country to have first claim on tax revenues from income generated by economic activity within its borders. The home country, therefore, inherits the responsibility of establishing a tax code that avoids double taxation.

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This article is part of a forthcoming Federal Reserve System study of the federal tax structure.

To this end, the United States provides a tax credit against U.S. tax liabilities on foreign-source income for taxes paid by U.S.-based multinational firms to foreign governments. The credit applies only to taxes on dividends paid by foreign subsidiaries and branches to their U.S. parent firms. No credit is allowed for foreign taxes on earnings retained abroad. Only income taxes paid to foreign national and local governments, and withholding taxes paid to foreign governments on dividends remitted to the parent firm, are credited against U.S. tax liabilities.¹ The ultimate burden of these taxes is believed to fall on the U.S. parent firm. In contrast, no credit is allowed against foreign excise, sales, value-added, or similar taxes; the U.S. Treasury assumes that firms shift these taxes forward into higher prices or backward into lower wages. Moreover, no credit is provided for royalties and fees paid to foreign governments; these are regarded as costs of doing business.

U.S. tax liabilities on foreign-source income are calculated on the "grossed-up" value of the firm's foreign earnings remitted to the United States (see box 1). The "grossed-up" value equals net dividends plus that portion of foreign income and withholding taxes attributable to dividends. First, a tentative U.S. tax liability is calculated on the "grossed-up" value of foreign dividends remitted to the United States. Then a credit for foreign taxes paid on dividends is subtracted to arrive at the actual U.S. tax liability. A firm, however, may not claim a foreign tax credit in excess of its tentative U.S. tax liability on remitted income. Because of this limitation, one dollar of remitted income, earned in a country where the combined effective income and withholding tax rate exceeds the U.S. corporate tax rate, is taxed more heavily than one dollar of corporate income earned domestically. Consequently, while the tax credit avoids double taxation, it does not achieve tax neutrality when foreign tax rates exceed U.S. tax rates.

1. Withholding taxes are nonrefundable taxes levied by many governments on financial transfers, such as dividends or interest payments, made to persons or firms outside their national boundaries.

Box 1 Calculation of U.S. Tax on Foreign-Source Income

Case 1: Country Alpha's tax rates are lower than U.S. tax rates; additional U.S. tax results.

Assumed distribution of foreign earnings:

\$1,000	Gross foreign earnings	
-300	Alpha's income tax (30 percent rate)	
700	After-tax foreign earnings	
-350	Retained earnings	} 50 percent dividend-payout ratio
350	Dividends	
-35	Alpha's withholding tax on dividends (10 percent rate)	
\$ 315	Net dividends remitted to the U.S. parent firm	

Calculation of "grossed-up" dividends:

\$ 315	Net dividends remitted to U.S. parent firm	
+150	Portion of Alpha's income tax attributable to dividends = 50 percent (dividend-payout ratio) × \$300 (total income tax paid to Alpha)	
+35	Alpha's withholding tax on dividends	
\$ 500	"Grossed-up" dividend earnings	

Calculation of U.S. tax liability:

\$ 230	Tentative U.S. tax = 46 percent (U.S. corporate income tax rate) × \$500 ("grossed-up" dividends)	
-185	Tentative foreign tax credits: \$150 (foreign income tax paid on dividends) + \$35 (Alpha's withholding tax)	
\$ 45	U.S. tax due on foreign earnings after credits	

Summary of taxes:

\$ 300	Alpha's income tax	
+35	Alpha's withholding tax	
+45	U.S. income tax	
\$ 380	Total taxes paid on foreign earnings	

Case 2: Country Beta's tax rates are higher than U.S. tax rates; no additional U.S. tax is due.

Assumed distribution of foreign earnings:

\$1,000	Gross foreign earnings
-500	Beta's income tax (50 percent rate)
500	After-tax foreign earnings
-250	Retained earnings } 50 percent
	dividend-
250	Dividends } payout ratio
-25	Beta's withholding tax (10 percent rate)
\$ 225	Net dividends remitted to U.S. parent firm

Calculation of "grossed-up" dividends:

\$ 225	Net dividends remitted to U.S. parent firm
+250	Beta's income tax attributable to dividends = 50 percent (dividend-payout ratio) \times \$500 (total income tax paid to Beta)
+25	Beta's withholding tax on dividends
\$ 500	"Grossed-up" dividends

Calculation of U.S. tax liability:

\$ 230	Tentative U.S. tax = 46 percent (U.S. corporate income tax rate) \times \$500 ("grossed-up" dividends)
-275	Tentative foreign tax credits: \$250 (foreign income tax paid on dividends) + \$25 (Beta's withholding tax)
\$ -45	Excess foreign tax credits

NOTE: The U.S. parent firm pays no U.S. tax on its earnings from country Beta, but because of the foreign tax-credit limitation, \$45 in foreign taxes paid to Beta cannot be credited against U.S. taxes on domestic earnings.

Summary of taxes:

\$ 500	Beta's income tax
+25	Beta's withholding tax
+0	U.S. income tax
\$ 525	Total taxes paid on foreign earnings

Case 3: Calculation of tax on earnings from country Alpha, assuming no deferral and that tax credits are extended to retained earnings.

Taxable foreign earnings:

\$1,000	Gross foreign earnings
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Calculation of U.S. tax liability:

\$ 460	Tentative U.S. tax = 46 percent (U.S. corporate income tax rate) \times \$1,000 (taxable foreign earnings)
-335	Tentative foreign tax credits = \$300 (Alpha's income tax) + \$35 (Alpha's withholding tax on dividends)
\$ 125	U.S. tax due on foreign earnings after credits

Summary of taxes:

\$ 300	Alpha's income tax
+35	Alpha's withholding tax
+125	U.S. income tax
\$ 460	Total taxes paid on foreign earnings

Two additional provisions in the U.S. tax code promote a greater degree of tax neutrality. With enactment of the Revenue Act of 1976, all U.S. multinational firms calculate the limitation on their foreign tax credit, using an "overall" method rather than a "per-country" method. Excess tax credits, accruing to the firm from its operations in a relatively high-tax country, are used to offset deficient foreign tax credits in relatively low-tax countries. By allowing the firm to distribute its excess foreign tax credits, the overall method reduces a firm's total tax bill. If the firm described in box 1 operated subsidiaries in both country Alpha and country Beta, it would apply the \$45 excess credit resulting in country Beta against the \$45 of U.S. tax due on income earned in country Alpha and owe no U.S. tax on its foreign income. Of course, a firm operating in only one foreign country cannot benefit from the overall method of calculating its foreign tax-credit limitation. A second provision that may help avoid double taxation allows U.S. multinationals to shift foreign tax credits in excess of the limitations forward five years or backward two years.

Deferral

The second prominent feature in U.S. tax laws governing corporate foreign-source income is a deferral provision. U.S. corporations only pay U.S. tax on earnings from foreign subsidiaries when the earnings are remitted to the parent firm; U.S. multinationals may defer U.S. tax on earnings retained in foreign subsidiaries. The deferral provision applies only to the retained earnings of foreign subsidiaries and not to the retained earnings of foreign branches; subsidiaries are considered entities separate from the parent firm, while branches are not.

The deferral provision may be viewed as an attempt to improve the competitive position of U.S. firms and their foreign subsidiaries relative to that of foreign firms, which may be subject to lower overall tax rates than U.S. firms. Without deferral, for example, a U.S. foreign subsidiary that earns \$1,000 before taxes in country Alpha (box 1, case 3) pays total U.S. and foreign taxes of \$460. A firm based in Alpha,

however, pays only \$300 in income taxes. With deferral, and assuming that the foreign subsidiary retains one-half of its earnings, the U.S. multinational pays a total tax bill of \$380 on its earnings in country Alpha (see box 1, case 1).

Krause and Dam [15] also argue that deferral is an attempt to improve the tax equity between foreign subsidiaries of U.S. firms and their purely domestic U.S. counterparts.² Domestic U.S. firms receive a number of tax advantages not extended to foreign subsidiaries, including beneficial loss carry-over, accelerated depreciation allowances, and an investment tax credit. These tax provisions reduce the effective income tax rate applicable to domestic earnings. In 1978, for example, large U.S. manufacturing firms paid U.S. taxes at a 39 percent effective income tax rate, substantially below the 48 percent statutory rate then in effect.³ While many foreign governments offer such tax advantages, they are not universal and often are not as generous as in the United States.

II. Taxes and Multinational Behavior

In order to serve foreign markets, a firm must make many decisions. It first must decide how to enter the foreign market. Should it export from its home base, or should it establish a foreign subsidiary? If foreign production is chosen, a firm next must decide where to locate inside the foreign market. This is not a trivial problem when the market to be served extends beyond national boundaries. A firm also must decide how to finance its foreign operations. Should

2. See Krause and Dam [15], pp. 50-1.

3. The U.S. effective tax rate was calculated by dividing 1978 domestic income tax paid by income before taxes and extraordinary items for U.S. manufacturing corporations with an asset size of \$250 million or more. Extraordinary items include foreign-source earnings. The data are from the U.S. Federal Trade Commission [25], tables I-1 and H-1. The effective tax rate for firms with an asset size of \$1,000 million and over was 39 percent, and the effective tax rate for firms in the \$250 million to \$1,000 million range was 40 percent.

the parent firm supply capital to the foreign affiliate, or should the affiliate rely on foreign capital markets and retained earnings? As the multinational grows, it must decide where to establish additional affiliates, where to retain its earnings, and how to price transfers of physical and financial assets between affiliates of the same multinational firm. While tax considerations influence many of these decisions, they may not always be the dominant factor behind a multinational's behavior.

Taxes, Retained Earnings, and Transfer Payments

In effect, the deferral provision allows an interest-free loan to U.S.-based multinationals equal to the unpaid U.S. tax liability on income retained in their foreign subsidiaries. The benefits of deferral increase with (1) the amount of earnings retained abroad, (2) the length of time that these earnings are retained abroad, and (3) the spread between domestic and foreign tax rates. The first of these factors is obvious; if the U.S. multinational retained all of its earnings abroad, it would pay no U.S. tax. The second results because the discounted present value of the tax liability declines with the length of time the tax payment is deferred.⁴ A U.S. multinational firm that continuously reinvests a portion of its earnings indefinitely avoids paying taxes on that amount. The tax advantage of retaining earnings rather than remitting them, however, seems most responsive to the third factor, that is, the difference between U.S. and foreign tax rates (see table 1). With the deferral of U.S. tax, \$100 of before-tax retained earnings provides \$60 after taxes in a country with a 40 percent tax rate on corporate earnings; it provides \$90 after taxes in a country with a 10 percent tax rate on corporate earnings. In the absence of deferral, but assuming that the foreign tax credit is extended to retained earnings, the firm portrayed in table 1 would have only \$54

Table 1 Effect of Taxes and Deferral on Retained Earnings

Retained earnings	Foreign corporate tax rate, percent					
	10	20	30	40	50	60
Before taxes	\$100	\$100	\$100	\$100	\$100	\$100
After taxes						
With deferral	90	80	70	60	50	40
Without deferral ^a	54	54	54	54	50	40

a. The U.S. tax rate equals 46 percent. It is assumed that the foreign tax credit is extended to retained earnings.

after taxes to reinvest in all cases where the foreign tax rate is less than the U.S. tax rate. However, when the foreign tax rate exceeds the U.S. tax rate, the deferral provision offers no benefits to the multinational that retains earnings abroad, since no U.S. tax would accrue if such earnings were remitted to the parent firm.

The deferral provision would seem to encourage U.S.-based multinational firms to retain earnings in subsidiaries located in countries with relatively low corporate-income-tax rates. A cursory review of available data suggests that, on average, the dividend-payout ratios of a U.S. firm's foreign subsidiaries are not much different than the dividend-payout ratios of large domestic firms. Many non-tax factors, however, influence a firm's dividend policies, hiding the correlations between taxes and retained earnings. Using regression techniques, Kopits [12] and Ness [17] have found statistically significant relationships between taxes and dividend-payout policies of U.S. foreign affiliates. Their results indicate that lower foreign tax rates encourage the retention of earnings abroad, while reductions in U.S. tax encourage the repatriation of foreign earnings. The authors, however, appear to disagree on the elasticity of the response.⁵

5. The elasticities in the studies of both Kopits [12] and Ness [17] were calculated in Kopits [13].

4. The present value of a deferred tax liability is given by:

$$PV = \frac{L_t}{(1+r)^t},$$

where

PV = present value of the deferred tax liability,
 L = tax liability due when earnings are remitted
at some future time period t ,
 r = interest rate at which the firm discounts

future values,

t = time units (years) until earnings are remitted.

The deferral provision creates an incentive for U.S.-based multinationals to establish subsidiaries and to accumulate retained earnings in so-called “tax-haven” countries. These countries assess foreign corporate earnings at very low, sometimes even zero, effective tax rates. While tax-haven subsidiaries may have legitimate economic functions, such as sales or global coordinating duties, they primarily serve as receptacles for the earnings of multinational firms.

A parent firm can transfer income to a tax-haven subsidiary by altering the prices charged on intra-company transactions. *Transfer prices* are the terms under which transactions take place among the subsidiaries and with the parent of a multinational firm. They include the prices at which goods are exchanged, interest rates on intra-firm loans, royalties, and charges for joint expenses incurred by the parent, such as research and development. The parent firm, for example, could concentrate earnings in a subsidiary by charging the subsidiary a very low price for exports from the parent and paying the subsidiary a very high price for imports. While shifting income through transfer pricing has obvious tax advantages, it also may be motivated by many other factors—the need to concentrate cash for investment in a particular subsidiary, the desire to avoid anticipated exchange-rate fluctuations, and the fear of possible capital controls or expropriation by a host country.

In addition to the deferral provision, other tax considerations influence a multinational’s transfer-price policies. A parent firm, for example, would undervalue exports to a foreign subsidiary if the host country’s tariff rate were high relative to its corporate income-tax rate. While the parent loses income from exports in this case, it gains in terms of after-tax dividends remitted from the subsidiary. Similarly, a U.S.-based multinational that generates excess tax credits on its worldwide operations has an incentive to reduce royalty and interest payments to the parent firm via transfer pricing and to generate additional dividends from foreign subsidiaries. The parent firm loses royalties and interest earnings but gains in terms of after-tax dividends. Moreover, host governments sometimes do not permit foreign subsidiaries to deduct interest, royalties, or other payments from subsidiaries’ taxable earnings, and occasionally they levy a much higher withholding tax on interest and royalty

payments to the parent firm than on dividend remittances. Such practices encourage parent firms to underprice interest charges, royalties, and similar intra-firm transfers in favor of accumulating additional dividends abroad.

The U.S. Treasury maintains a number of devices to limit the use of transfer pricing to avoid U.S. taxes. The Treasury requires that transfer prices reflect market prices of similar goods or reasonable markups above costs, and it specifies various rules to govern the allocation of shared expenses. Moreover, the Treasury maintains the power to reallocate gross income, deductions, credits, and allowances between related firms where arbitrary pricing or allocating of expenses to avoid taxes is suspected. In such cases, the burden of proof resides with the firm. The Treasury also has the power to deem certain types of earnings retained in subsidiaries of U.S. multinationals as dividends paid to the U.S. parent firm, and, consequently, subject immediately to U.S. tax. While the Treasury powers might constrain the ability of U.S. multinationals to avoid taxes on foreign-source income through transfer pricing, they certainly do not eliminate it.

Taxes and the Investment Behavior of Multinationals

The major concern about the effect of U.S. tax policy on foreign-source corporate income is that it encourages U.S.-based multinationals to invest in fixed capital abroad rather than in the United States. Usually the foreign tax credit is not viewed as the culprit, because it promotes “tax neutrality” in the decision to invest at home versus abroad. Although the foreign tax credit does not “actively” encourage foreign investment, it does remove a barrier—international double taxation—that otherwise would inhibit the free-market flow of capital. In the absence of a foreign tax credit, multinationals would pay a full tax on earnings to both the home and host countries, and net foreign-source earnings would be sharply reduced.

The deferral provision, on the other hand, is often suspected of "actively" encouraging fixed investment abroad. There are two alternative, but essentially equal, ways to view the effects of deferral on investment. One channel is through a reduction in the cost of capital.⁶ The cost of capital includes the price of new capital goods, an implicit interest cost of money, the depreciation rate for capital, and various tax rates. Deferral encourages U.S.-based multinationals to retain earnings in their foreign subsidiaries. These retained earnings carry a lower implicit interest cost than externally generated funds, because investors attach an implicit risk premium to the cost of external funds reflecting the possibility that, if expected profits were not realized, earnings per share would fall and alienate shareholders and creditors. A second approach views deferral as encouraging foreign investment, because it increases the present value of after-tax earnings to the extent that the firm discounts the deferred tax liabilities.

Following this second approach, one can assess the effect of U.S. tax laws on the foreign investment decision of U.S.-based multinationals by comparing the tax on \$1,000 of earnings in various foreign countries with the tax on \$1,000 of domestic earnings. Holding all else constant, the profit-maximizing firm would invest abroad rather than in the United States if the tax on foreign-source earnings were less than the tax on domestic-source earnings. Table 2 presents tax rates and dividend-payout ratios applicable to manufacturing firms located in various countries in 1974. As previously noted, any tax incentive to invest abroad would result through the deferral provision and, in this static analysis, would depend on the amount of retained earnings and the spread between U.S. and foreign tax rates.

In table 2, the unweighted average effective income tax on \$1,000 of earnings is \$340 (see column A). Among the industrialized countries,

which may be a more relevant sample given that about 80 percent of all U.S. manufacturing direct foreign investment occurs in these countries, the average effective income tax is \$382, ranging from \$127 in Ireland to \$517 in New Zealand. Effective income taxes among developing countries average \$290, ranging from \$47 in Nigeria to \$570 in India. Withholding tax rates (column B) among developing countries average 24 percent, compared with 10 percent among developed countries.

Investment in the United States is an alternative available to the U.S. multinational firm. The effective tax on \$1,000 of U.S. earnings is roughly \$380.⁷ The difference between the effective U.S. tax rate and the 48 percent statutory tax rate (applicable in 1974) results from numerous provisions in the tax code, notably the 7 percent investment tax credit and accelerated depreciation allowances, which reduce the total tax bill. Because foreign-source income is not eligible for the same beneficial tax treatment as domestic-source income, remitted earnings are taxed at 48 percent, the statutory tax rate (see column F).

The total U.S. and foreign taxes paid on foreign earnings are illustrated in column I. Among the developed countries, the average total tax of \$1,000 of foreign-source income is \$427, substantially above that paid on \$1,000 of domestic-source earnings. There are only three countries (Denmark, Ireland, and Spain) where a clear tax incentive to investment appears. Among the developing countries, the average tax on \$1,000 of foreign-source income is \$366, somewhat lower than the tax on \$1,000 of domestic earnings. The range of taxes among developing countries is, however, wider than that among developed countries. According to this 1974 data, there are only six developing countries (Brazil, Venezuela, Panama, Nigeria, Iran, and the Bahamas) where tax incentives to invest exist. Worldwide, the average tax is \$399, still above the tax on domestic income.

6. See, for example, Kopits [12] and Kopits [13], pp. 646-47.

7. The U.S. effective tax rate for 1974 was calculated according to the procedure described in footnote 3. Data are from the U.S. Federal Trade Commission [24], table I-1. The effective tax rate for firms with an asset size of \$1,000 million and over was 35 percent; the effective tax rate for firms with an asset size from \$250 million to \$1,000 million was 44 percent.

Table 2 Taxes per \$1,000 Earnings of Foreign Subsidiaries of U.S. Manufacturing Firms, 1974

	Foreign income tax ^a	Foreign with- holding tax rate	Dividend- payout ratio	Foreign with- holding taxes	Total foreign taxes	Tentative U.S. taxes	Tentative foreign tax credit	Excess foreign tax credit ^b	Total taxes paid	Total tax paid without deferral
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
Developed countries										
Canada	411	0.15	0.28	25	436	134	140	-6	436	480
Denmark	325	0.05	0.25	8	333	120	89	31	364	480
France	480	0.05	0.39	10	490	187	197	-10	490	480
West Germany	430	0.15	0.86	74	504	134	444	-310	504	504
Ireland	127	0.05	0.36	16	143	173	62	111	254	480
Italy	419	0.05	0.36	10	429	173	161	12	421	480
Netherlands	360	0.10	0.20	13	373	96	85	11	384	480
Norway	405	0.15	0.16	14	419	77	79	-2	419	480
Spain	303	0.15	0.22	23	326	106	90	16	342	480
Sweden	431	0.05	0.17	5	436	82	78	4	440	480
Switzerland	271	0.05	0.83	30	301	398	255	143	444	480
United Kingdom	446	0.15	0.50	42	488	240	265	-25	488	488
Australia	429	0.15	0.48	41	470	230	247	-17	470	480
New Zealand	517	0.05	0.29	7	524	139	157	-18	524	524
Developing countries										
Mexico	422	0.20	0.26	30	452	125	140	-15	452	480
Brazil	303	0.25	0.13	23	326	62	62	0	326	480
Chile	394	0.40	0.67	162	556	322	426	-104	556	556
Columbia	473	0.20	0.47	50	523	226	272	-46	523	523
Venezuela	300	0.15	0.42	44	344	202	170	32	376	480
Panama	154	0.10	0.43	36	190	206	102	104	294	480
Nigeria	47	0.15	0.00	0	47	0	0	0	47	480
Iran	105	0.60	0.50	269	374	240	322	-82	374	480
India	570	0.26	0.30	34	604	144	205	-61	604	604
Philippines	296	0.35	0.40	99	395	192	217	-25	395	480
Indonesia	364	0.20	0.21	27	391	101	103	-2	391	480
Bahamas	51	0.00	0.00	0	51	0	0	0	51	480

a. The "realized (or effective) foreign tax rates in column A differ from the statutory corporate-income-tax rates in these countries. The difference reflects the effect of other taxes (capital gains and local taxes) on earnings and the use of U.S. accounting rules, which may differ from foreign definitions, for calculating taxable earnings.

b. Excess foreign tax credits appear as negative numbers in column H.

SOURCES: Tax rates: Hufbauer and Foster [11] and Kyrouz [16]. Dividend-payout ratio: U.S. Department of Commerce [23]. Calculations based on: Horst [7].

Key:

A—Realized foreign income taxes.

B—Statutory foreign withholding tax rate, per dollar of dividends.

C—Dividend-payout ratio = $1 - \frac{\text{retained earnings}}{\text{total earnings}}$.

D—Foreign withholding taxes = [$\$1,000 - (A)$](C)(B).

E—Total foreign taxes = A + D.

F—Tentative U.S. tax = $\$1,000 (C)(0.48)$.

G—Tentative foreign tax credit = [(A)(C)] + D.

H—Excess foreign tax credit = F - G.

I—Total taxes paid = the greater of E or E + H.

J—Total taxes paid, no deferral = the greater of 480 or E.

A clear tax advantage favoring foreign investment relative to domestic investment exists in only one-third of the countries presented in table 2 and in only about one-fifth of the developed countries shown. These per-country comparisons mask the beneficial effect of using the overall method for calculating the foreign tax-credit limitation. Under the overall limitation, a firm might use excess foreign tax credits earned in high-tax countries, such as New Zealand, to offset deficient tax credits resulting from investment in low-tax countries, such as Italy, Switzerland, or Ireland. The per-country approach used in table 2 may understate the tax incentives associated with the U.S. tax treatment of foreign-source income.

Any preferential tax treatment of foreign-source income in table 2 results solely from the deferral provisions in the U.S. tax law. Assuming that deferral were eliminated and that the tax credit were extended to retained earnings, the total tax on foreign-source income would be \$480 in all countries where the effective foreign tax rate is less than the U.S. statutory tax rate (see column J); the total tax would be higher than \$480 where the foreign effective tax rate is greater than the U.S. statutory rate. The implication is that no tax incentive to invest abroad would exist if deferral were eliminated.

An interesting attempt to quantify the effects of U.S. tax laws on the investment behavior of U.S.-based multinationals appears in Bergsten, Horst, and Moran [1] and in Horst [6]. Horst constructs a two-sector (parent and foreign-subsidary) model of a U.S. multinational manufacturing firm in which the firm adjusts the location of its investment (total asset acquisition) and intra-firm capital flows in response to changes in the tax differential between foreign-source and domestic-source earnings. The U.S.-based multinational seeks to maximize global after-tax earnings, and investment depends on after-tax rates of return and the cost and availability of funds. A firm invests until marginal returns equal marginal costs, and it always invests in the country where the marginal net return is the largest. Investment can be financed from retained earnings, intra-corporate loans, new equity issues, and external debt.

The results of Horst's experiments are constrained by the structure and assumptions governing the model. While values for most of the model's parameters are obtained from various published sources, two important parameters—the elasticity of investment demand with respect to the cost of capital and the elasticity of the supply of borrowed funds with respect to their cost—are assumed to equal two. No justification for this value is given.⁸ Moreover, transfer prices for loans and head-office charges are held constant in Horst's model, as is the proportion of equity to total capital transfers between the parent firm and its foreign subsidiary. In fact, however, multinationals probably would alter these variables to minimize the impact of tax changes on their earnings. In addition, Horst assumes that retained earnings are a fixed proportion of total earnings, but the proportion of earnings retained by a firm also may respond to taxes and the level of desired capital accumulation.

Horst claims that if deferral were eliminated and the foreign tax credit were extended to cover foreign income taxes on unremitted earnings, foreign investment would fall by \$1.5 billion, or 8.5 percent, from an initial value of \$18.3 billion; domestic investment would rise \$1.4 billion, or 3.9 percent, from an initial investment of \$36.4 billion. New funds advanced from the parent firm to the foreign subsidiary would fall \$2.5 billion, or 91 percent, from an initial value of \$2.7 billion. The elimination of deferral would cause the foreign subsidiary to borrow more heavily from local markets to finance foreign investments. Removing the deferral provision would have the greatest impact on the location of borrowing rather than the location of investment.

8. See Horst [6], pp. 382-83, for a discussion of the elasticities.

Horst also has examined the impact of eliminating deferral and allowing U.S. parent firms to deduct foreign taxes from their U.S. taxable income rather than permitting a foreign tax credit. (A deduction is not as generous as a credit.) He finds that investment abroad would fall \$10.3 billion, or 56.2 percent, from its initial value of \$18.3 billion; domestic investment would increase by \$9.3 billion, or 25.5 percent, from \$36.4 billion. This second, more restrictive case actually would reverse the flow of capital between the home and host countries. The home country would experience a \$15.7 billion inflow of capital, as foreign subsidiaries advanced funds from retained earnings to U.S. parent firms. These tax changes would have a large impact on foreign investment, intra-company flow of funds, and the retention of subsidiary earnings.

In summary, deferral offers a tax incentive to invest abroad, depending on the difference between U.S. and foreign tax rates and the amount retained abroad and the length of time earnings are retained abroad. Horst's model indicates that the deferral provision has only a small impact on the decision to accumulate capital abroad. The data in table 2 suggest that differentials between U.S. and foreign tax rates are generally not sufficient to provide a strong tax incentive to invest abroad. Some countries shown in table 2, however, are exceptions to this generalization.

The foreign tax credit does not "actively" encourage foreign investment. It permits greater foreign investment than would occur in its absence by eliminating international double taxation. Horst's model suggests that eliminating deferral and replacing the foreign tax credit with a foreign tax deduction would greatly reduce foreign investment relative to U.S. investment. Calculations based on the data in table 2 show that under such a proposal even investment in Nigeria would be more heavily taxed than U.S. investment.⁹ If the foreign tax credit were replaced with a tax deduction, *but* the deferral provision were maintained, only investment in Ireland, Brazil, Panama, Nigeria, and the Bahamas would continue to

offer a clear tax advantage over investment in the United States.¹⁰

The methods of analysis adopted in table 2 and in Horst's model consider taxes in isolation of other variables. Even where tax incentives to invest abroad exist, their influence may receive negligible weight when compared with other factors. Much has been written in recent years about the determinants of direct foreign investment.¹¹ Unfortunately, relatively few studies have examined the specific roles of taxes in investment decisions. The literature suggests that the most important determinants of the location of direct foreign investment are the size and growth of overseas markets, maintenance of market shares, resource availability, barriers to trade, and political stability. More general factors, such as expected high profits and host-government attitudes, also appear to be important according to many surveys. These more general factors surely involve some implicit calculation of the effects of taxes, yet, by virtue of their conspicuous absence in the literature, taxes appear to receive little weight in the decision to invest abroad rather than in the United States.

Taxes and Location in the Foreign Market

Although tax considerations may not be dominant in the decision to invest abroad rather than in the United States, they appear to be an important determinant of location in the foreign market, once a firm decides to enter the foreign market. A U.S. manufacturing firm may decide to invest in Europe, for example, because of the marketing potential for its product. Having made this decision, the firm may choose to locate in France rather than in Belgium, or in Hamburg rather than in Berlin, primarily because of tax considerations.

10. In this case the total tax (U.S. plus foreign) from table 2 is given by:

$$\text{total tax} = 0.48[(C)\$1,000 - [(C)(A) + (D)]] + (E),$$

where (A), (C), (D), and (E) refer to values in the respective columns of table 2.

11. For surveys of direct foreign investment, see Dunning [3], Hufbauer [10], and Stevens [21]. For an excellent survey of tax studies, see Kopits [13].

9. In this case, calculation of the total tax (U.S. plus foreign) from table 2 is given by:

$$\text{total tax} = 0.48[\$1,000 - (E)] + (E),$$

where (E) refers to values in column E of table 2.

Snoy [20] has investigated the geographic pattern of U.S. investment in Western Europe. He specifies numerous alternative models, but generally defines direct foreign investment as a linear function of tax-rate differentials (the host-country tax rate less the European average), the growth rate of industrial production, the total amount of manufacturing investment in a country, and membership in the European Economic Community. Snoy finds that U.S. direct foreign investment in Europe is significantly and elastically related to the tax differentials among European countries. While U.S. tax laws seem to have little impact on the decision to invest in Europe rather than in the United States, once the decision to invest in Europe is made, tax considerations become important.

Mellors [18] has investigated the geographic pattern of foreign investment by British firms. (Location in Britain was not an alternative.) He describes the location of investment in a portfolio-adjustment model that emphasizes rates of return and risk. (Risk is measured by the variance of returns on investment.) Mellors hypothesizes that the multinational would invest where the return is the greatest per unit of risk, and finds that the actual pattern of investment best fits the hypothesized pattern when returns and risk are calculated after taxes. This result implies that multinationals consider taxes when deciding on where to locate foreign investments.

III. Would Increasing the Tax on Foreign-Source Earnings Increase Domestic Investment?

The major features of the U.S. tax treatment of foreign-source corporate income—the foreign tax credit and the deferral provision—have existed since 1918.¹² Between 1918 and the early 1960s, no major changes were made in the tax treatment of the foreign earnings of multinationals. Balance of payments problems in the late 1950s, together with the fear that investment abroad reduced domestic investment and employment, brought pressures on the U.S. Congress to curtail direct foreign investment outflows.

Congress dealt with these pressures by adopting relatively minor, but important, tax-law changes, such as requiring firms to “gross-up” dividends, and by tightening regulations governing intra-firm transfers. Congress, however, did not act on proposals to eliminate deferral, eliminate or reduce the foreign tax credit, or change the foreign tax credit to a tax deduction despite repeated calls to do so. Pressures to make these major changes in the U.S. tax treatment of foreign-source corporate earnings persist. In 1975, the U.S. Senate voted to end deferral, and in 1978 President Carter proposed ending deferral.

The impact of changing various provisions in the U.S. tax treatment of foreign-source income can be viewed in terms of a substitution effect and an income effect. A policy change that increases the tax on foreign-source income relative to that on domestic-source income would cause profit-maximizing investors to reduce foreign investment and increase domestic investment. This is called the *substitution effect*. An increase in global taxes, reflecting either the higher taxes on foreign-source income or higher taxes on domestic income, also would reduce total global earnings and global investment. This is known as the *income effect*. The total effect of a tax change equals the sum of its substitution and income effects.

In Horst's experiments [1,6], the substitution effect dominates the income effect; U.S. investment increases as foreign investment falls. This outcome is influenced by the underlying structure and assumptions in the model. If, for example, Horst had assumed a lower elasticity of investment demand with respect to the cost of capital and a lower elasticity of external funds supply with respect to the cost of borrowing, the substitution effect would be smaller relative to the income effect.¹³ Similarly, if Horst's model specified fewer constraints on the ability of multinationals to alter transfer prices, the relative sizes of the substitution and income effects may have been considerably different.

13. See Horst [6], pp. 382-83.

12. Between 1913 and 1918, U.S. tax laws allowed the corporation to deduct from its U.S. taxable income foreign income and withholding taxes. The deduction method is not as advantageous to the firm as the foreign tax credit.

The substitution effect need not dominate the income effect; U.S. domestic investment need not rise following a tax increase on foreign-source income. This may be particularly true in the long run when multinationals can fully adjust to the tax increase, and it may be especially true for specific firms if not for aggregate investment. The relative size of the substitution and income effects would seem to depend on (1) the ability of U.S. multinationals to substitute profitably domestic for foreign investment opportunities; (2) the ability of multinationals to avoid higher taxes through alterations in their financial and legal corporate structures; and (3) the reactions of host governments. Each of these factors is discussed below.

Substituting Domestic for Foreign Investment

Higher taxes could impinge on the ability of many multinational firms to compete successfully against foreign firms that face lower taxes. Many of these U.S. firms may be able profitably to substitute domestic investments for foreign investments. Many others, however, may not be able to make such substitutions. For these firms in particular, and possibly in the aggregate, lower profits (or losses) in foreign markets eventually could slow investment growth at home.

Before investing abroad, some firms probably have become well-established in their domestic markets, implying fairly well-saturated domestic demand and few prospects for continued rapid domestic growth in their principal product lines. Consequently, for continued growth, these firms would need to diversify into new product lines or expand into foreign markets. Domestic diversification often may be less attractive than foreign expansion, because of the nature of the firms' managerial or technological expertise, existing concentration in prospective domestic markets, or the threat of antitrust actions against such diversification.

Whether through exporting or direct foreign investment, entering a foreign market involves high start-up and learning costs. Manufacturing firms, consequently, would not enter a foreign market unless they derived rents from product differentiation or a unique expertise in production, marketing, or management. Exporting often proves to be the most profitable means of entering and expanding in a foreign market. Initial capital outlays would seem to be less for exporting than for direct foreign investment, and the firm may benefit from economies of scale in its domestic plants, lower political risks, and greater certainty in its relations with labor. In many cases, however, direct foreign investment would be the most profitable alternative (in some cases, the only profitable alternative) for entering or expanding in a foreign market. This may be particularly true in the long run.¹⁴

In some cases, the nature of the product or the market may preclude exporting. Foreign production may be advisable because of high transportation costs or because local consumers discriminate against foreign products. Exportation may be unacceptable if the product must be tailored to the specific demands of the consumer or if it requires frequent servicing and repair. Similarly, the firm's competitive advantage may be primarily the specific manner in which it markets the product. This marketing technique perhaps would not be duplicated if the item were exported and marketed by a foreign importer. Moreover, direct foreign investment may provide the multinational with a long-term savings not available through exporting. The firm, for example, may secure access to scarce or low-cost resources, such as cheap labor, which could not be imported. In addition, as the foreign market grows, direct foreign investment may enable the firm to adapt more rapidly to changing preferences and provide economies of scale in production or transportation.

14. Licensing a foreign firm to produce an item abroad is another alternative not discussed here. The usual objection to this form of entering a foreign market is that it does not provide the U.S. firm with close control of production and entails a greater risk that the U.S. firm would lose its exclusive production expertise to a potential foreign competitor.

In other cases, the eventual choice of foreign production over exporting may be dictated by strategic considerations. If a product is highly differentiated, exporting may be the most desirable method of serving foreign markets. In time, however, foreign competition may develop and grow rapidly because of its proximity to the market. In such cases, foreign direct investment may be the only way U.S. firms could maintain their share of the foreign market. Similarly, a U.S. firm may be forced to follow the direct foreign investment of a domestic or third-country rival. If a close competitor were able to reduce production costs through foreign investment, it may be able to secure a larger share of the foreign, or U.S., market.

Very often the choice of foreign production rather than exportation results from artificial barriers to trade. Many governments adopt measures such as tariffs, quotas, marketing arrangements, and discriminatory procurement policies to protect domestic industries and encourage foreign investment. Even if exporting is inherently less costly, these barriers might preclude that method of overseas trade.

In cases such as those outlined above, small changes in the income-tax differential, whether from higher taxes on foreign-subsidiary income or lower taxes on domestic corporate earnings, may have little effect on the decision to produce abroad rather than produce at home for export. Only large changes in tax differentials would cause a shift to exportation over foreign production when trade barriers exist. Stobaugh [22] asserts that large increases in the tax on foreign-source corporate income would lessen the ability of U.S.-based multinationals to compete

abroad. Eventually, some U.S. firms may lose their foreign markets to foreign competition. Losses on foreign investments, implying lower global profits, may reduce domestic investment, particularly if the existence of foreign subsidiaries stimulates exports of intermediate parts and complementary final goods from the United States. At the same time, gaining the U.S. share of foreign markets would strengthen foreign competitors. Eventually, the foreign firms may compete aggressively in U.S. markets against U.S. firms.

Tax Avoidance

Changes in effective tax-rate differentials that favor domestic corporate income over foreign-source income would encourage multinational firms to alter their financial behavior to minimize the effect of tax changes on foreign earnings and growth. As previously explained, multinational firms can alter various transfer prices to realize foreign-subsidiary earnings at the parent firm. In addition, large tax changes affecting foreign-source income could prompt major changes in the corporate organization of multinational firms. U.S. firms, for example, might reduce their equity involvement in foreign subsidiaries or move their headquarters abroad.

Kramer and Hufbauer [14] have investigated the profitability of various tax-induced corporate reorganizations. After constructing an income statement for a hypothetical multinational firm, they compare the total tax bills that result under alternative corporate reorganization schemes and various tax-law assumptions. The alternative reorganization schemes include various methods by which the parent firm can reduce its ownership in its subsidiaries (stock sales or exchanges) and include moving the corporate headquarters to a low-tax country. The various tax-law assumptions include eliminating the deferral provision and the foreign tax credit. Kramer and Hufbauer detail the cost and benefits of each case.

Chart 1 Corporate Reorganizations to Avoid Taxes¹

Structure of U.S.-Based Multinational

U.S. parent firm, *P*, owns 100 percent of subsidiaries, *S*, in countries Alpha and Beta. The U.S. firm is 100 percent owned by U.S. shareholders.

U.S. Parent Firm Reduces Ownership of Foreign Subsidiaries

Step 1. The U.S. parent firm exchanges subsidiary stock for cash or shares in foreign (country Gamma) parent firm. A non-recurring tax is levied on subsidiary earnings that previously were excluded from U.S. income taxes and on any capital gains resulting from the sale or exchange of stock.

Step 2. The U.S. parent firm may buy its stock from U.S. shareholders or exchange shares in the new foreign parent firm for its own stock. A non-recurring tax is levied on any capital gains accruing to the shareholders.

The U.S. firm now holds 20 percent of the stock in its foreign subsidiaries, and the U.S. shareholders may own stock in the new foreign parent firm.

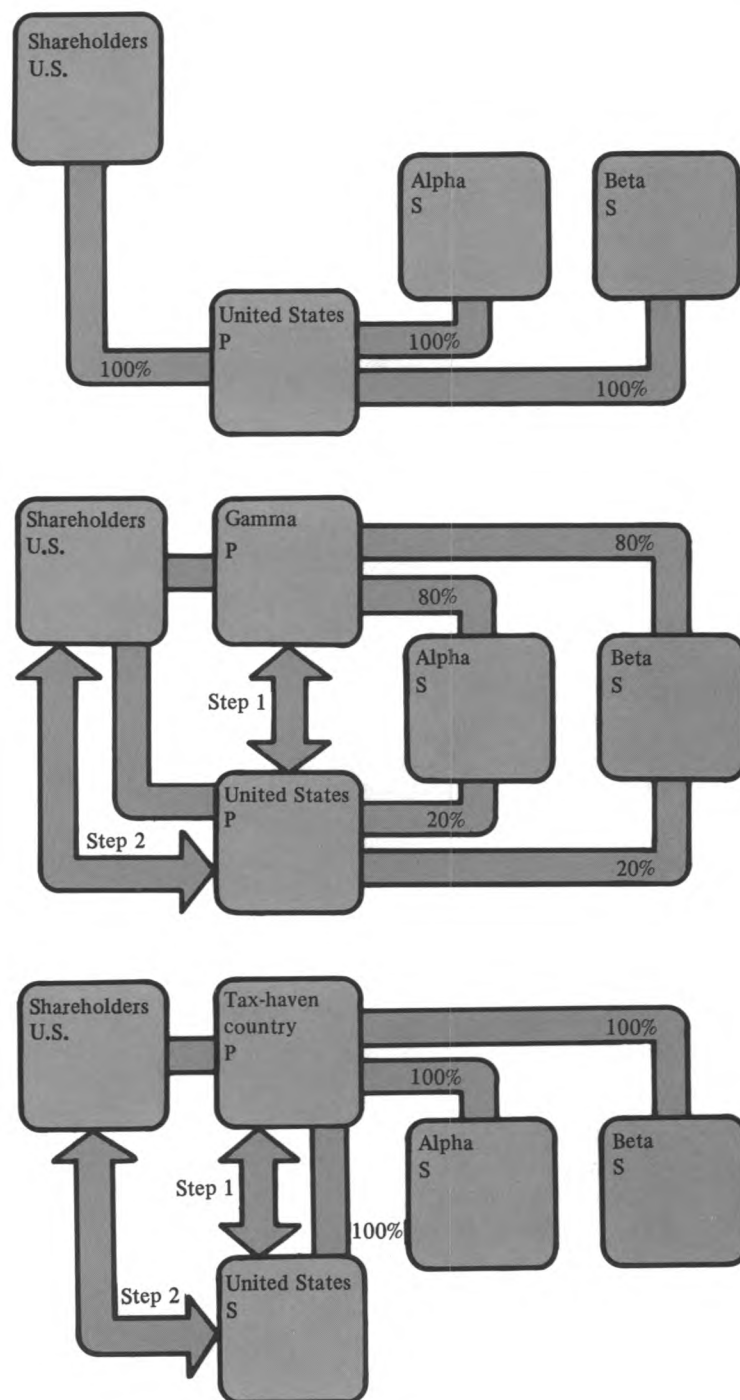
U.S. Firm Moves Abroad

Step 1. The U.S. firm exchanges its stock for the stock of a foreign parent, newly formed in a tax-haven country. Non-recurring taxes are levied on previously excluded subsidiary income and any capital gains that result.

Step 2. The U.S. firm exchanges the stock of the new foreign parent firm for all of its stock.

The U.S. firm establishes a new foreign parent firm and becomes wholly owned by it. The ultimate shareholders now hold stock in the newly formed foreign parent firm.

1. Based on Kramer and Hufbauer [14].



The benefits of corporate reorganization to a U.S.-based multinational can be expressed in terms of the tax liabilities avoided by the move. By reducing its ownership in its foreign subsidiaries or moving its headquarters from the United States to a low-tax country, a multinational shields a portion of its foreign-source income from U.S. taxation. Corporate reorganization need not cost the U.S. firm its dominant influence over the decisions of foreign affiliates, even if its equity involvement falls below 50 percent. The U.S. firm can continue to be a source of technical and managerial expertise, as well as the main source of financial capital, by providing loans to the foreign firm. Although the U.S. firm's dividend earnings from the foreign affiliate would decline, the U.S. firm would continue to benefit through interest earnings, exports, and fees charged to the foreign firm, not to mention any nonfinancial returns from its association with the foreign firm. In the extreme, the U.S.-based multinational may move its headquarters abroad. A new parent firm could be established abroad, and the old U.S. parent firm could become a branch of the new firm.

Corporate reorganization, however, involves costs, expressed in terms of certain non-reoccurring taxes or "toll charges," that the parent firm and the ultimate shareholders may incur. The costs depend primarily on the type of reorganization undertaken by the multinational, the extent to which ownership of foreign subsidiaries is reduced, and whether the U.S. Treasury views the reorganization primarily as a tax-avoidance scheme (see chart 1). In general, the "toll charges" may be placed into three categories. First, when the U.S. parent firm sells stock in its foreign subsidiaries to a new foreign parent firm, or trades the subsidiary stock for an equity share in the new foreign parent, any subsidiary income that previously may have been excluded from U.S. tax becomes taxable. (This includes certain income earned in developing countries and certain earnings related to export trade; it excludes retained earnings previously subject to deferral.) Second, any capital gains resulting from this sale or trade of subsidiary stock may become immediately taxable to the U.S. parent firm. Third, if the U.S. parent buys back its stock from its shareholders with the proceeds from the sale of its foreign subsidiary stock, or exchanges with its stockholders the newly acquired stock in the foreign

parent for its own stock, the stockholders may become subject to tax on any capital gains associated with either transaction.

Kramer and Hufbauer's [14] investigation of possible tax-induced corporate reorganizations demonstrates that the various tax costs associated with corporate reorganization would preclude such moves in most cases. However, if both deferral and the foreign tax credit were eliminated, subjecting foreign-source income to a high rate of international double taxation, reorganization becomes profitable in terms of tax savings. Kramer and Hufbauer also note that tax incentives to reorganize increase with the percentage of total income derived from foreign operations. Consequently, some firms might reorganize even if changes in the U.S. tax treatment of foreign-source income were relatively minor.

Foreign Reaction

The response of multinational firms to changes in the U.S. tax on foreign-source income depends to a large extent on the reaction of foreign host governments. One might view each country as trying to maximize its national income. (For simplicity, assume national income equals only the returns to capital including tax revenues.) To the extent that capital is internationally mobile in response to international tax differentials, an interdependence would exist among nations' choices of tax rates. The effective tax rate chosen by any one nation to maximize its national income would depend on the tax rates adopted by all other nations. A change by any one nation attempting to increase its national income at the expense of the others would trigger tax changes by the others.¹⁵

Exactly how a foreign host government might react to a change in U.S. tax laws is not certain. Some nations may lower tax rates on foreign-source income in order to keep foreign investments located on their soil; others may raise tax rates with the view of maintaining the flow of tax receipts derived from foreign investments. Many factors would seem to influence the decision.

15. See Hamada [5].

If the United States raised its effective tax rate on foreign-source corporate earnings and thereby reduced the growth of U.S. investment abroad, a foreign host government might retaliate against the loss of tax revenues by raising its tax on U.S. affiliate income. (A high withholding tax would be a convenient vehicle for this, as it would not affect the host government's domestic firms.) This strategy would seem likely if U.S. investment in the host country were (1) relatively inelastic with respect to changes in the host country's tax rate, (2) not vital to the host government's national interests, and (3) only a small share of the host country's industrial base. The elimination of the deferral provision poses an interesting example of a situation in which the U.S. multinationals would be insensitive to higher host-country taxes. If the United States removed the deferral provision and extended foreign tax credit to retained earnings, there would be a strong incentive for all host governments to raise their tax on the earnings of U.S. affiliates up to 46 percent, the U.S. corporate income tax rate on foreign-source income. U.S. firms would be indifferent to the higher host-country taxes, because they could be fully credited against their U.S. tax liability. The deferral provision allows an incentive for U.S. multinationals to lobby against host-country tax increases.

The host government instead may lower its tax on U.S. firms after an increase in U.S. taxes, if the following conditions exist: (1) foreign direct investment is elastic with respect to changes in the home- and host-country tax rates, (2) U.S. investment is viewed as vital to development aspirations, and (3) U.S. foreign investments constitute a large share of the host government's corporate base.¹⁶ This response would seem more likely, for example, if the deferral provision were eliminated, but the foreign tax credit were not extended to retained earnings.

16. If U.S. investment abroad were elastic with respect to taxes and constituted a large share of the host country's tax base, and if the host government did not lower its tax in response to a higher U.S. tax, the offsetting factor for higher U.S. taxes might be lower host-country wage rates. For an interesting treatment of the size and host-country response issues in the context of an optimal home-country tax, see Feldstein and Hartman [4].

If the host country is a less-developed country, higher U.S. taxes and lower host taxes on U.S. investments may compromise U.S. foreign policy. Under the foreign tax-credit procedure, the United States would gain tax revenue at the expense of the host government. The host government most likely would bargain intensely for tax treaties that exempt income in their nation from the effects of higher U.S. effective tax rates. The result might be a general rise in the U.S. tax on foreign-source corporate income, followed by selective country rollbacks.

Alternatively, host governments may respond to higher U.S. tax rates by adopting a mixed strategy of offering targeted incentives to keep certain U.S. multinational firms within their borders, while raising selective taxes to generate revenues from less important foreign investments. Host governments most likely favor foreign investments that are labor-intensive, introduce new technology, locate in depressed regions, or generally exhibit growth potential compatible with national interests.¹⁷ Similarly, host governments might raise taxes on existing foreign firms while lowering taxes on new investment.

There are many mechanisms that host governments might adopt to offset the impact of U.S. tax increases on investments within their borders. In addition to lowering tax rates to encourage capital inflows, a host government might offer general or selective loans or subsidies, provide government contracts, or restrict competition in specific industries. Trade barriers also may be imposed to make direct investment more attractive than exportation. Moreover, to discourage possible capital exports following an increase in the U.S. tax rate on foreign-source income, a host government might institute controls on capital outflows or foreign-exchange transactions.

17. See Christelow [2].

IV. Conclusion

U.S. tax laws governing foreign-source corporate income probably do not encourage U.S. multinational firms to invest in fixed capital abroad rather than in the United States. The foreign tax credit promotes tax neutrality in the investment decision, and encourages foreign investment only in the sense that eliminating international double taxation promotes a free-market flow of capital. The deferral provision, on the other hand, encourages multinational firms to retain earnings abroad, particularly in tax-haven subsidiaries, and hence would seem to lower the cost of foreign investment to multinational firms. However, special provisions in the U.S. tax code, such as the investment tax credit, are available to domestic firms but not their foreign affiliates. These provisions reduce the effective tax rate on domestic earnings to such an extent that in most cases the tax on a firm's foreign-source earnings exceeds the tax on its domestic-source earnings.

Altering U.S. laws to raise the tax on foreign-source corporate earnings may not result in a higher level of U.S. investment—particularly in the long run. Higher taxes on U.S. multinationals may impede their ability to compete effectively against their foreign counterparts. Eventually, U.S. firms could lose their share of the foreign market and face increased competition in domestic markets from these foreign firms. Moreover, to avoid higher taxes on their foreign earnings, U.S.-based multinationals may alter transfer prices or reduce their equity involvement in their foreign affiliates. Some firms that derive a high percentage of their global earnings from foreign markets may elect to move their headquarters abroad to avoid high U.S. taxes. In addition, a change in U.S. tax rates may cause a change in foreign governments' fiscal treatment of U.S. investors. Some governments may lower their taxes to encourage foreign investment in their countries, while others, under some circumstances, could levy discriminatory taxes on U.S. firms.

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Unemployment Insurance: A Case for a Private System

by Mark S. Sniderman

If a single generalization were required to summarize the development of unemployment insurance in the United States, it might be that unemployment insurance was, and to some extent is today, intended to do much more than provide benefits to workers who lose their jobs.¹

The unemployment compensation system in the United States operates through a number of separate programs. The most well-known and important programs are the 53 administered by the individual states (plus the District of Columbia, Puerto Rico, and the Virgin Islands) to provide regular unemployment insurance (UI) benefits. Another set of programs, run by the states along with the federal government, provides benefits for extended periods of time to individuals who have exhausted their regular benefits. Unemployment insurance benefits were paid out at an annual rate of about \$16 billion in the second quarter of 1980. For individuals, these benefit payments can be an important source of personal income; for the economy as a whole, the benefits are timely because they increase when growth of wage and salary income slows.

Despite the undisputed stabilizing influence of unemployment insurance benefits on the economy, the UI system is frequently criticized as encouraging idleness and thereby increasing the measured rate of unemployment. Yet other critics claim that the UI system does not provide sufficient benefits in desperate times. Arguments over the size of benefits, the eligible population, and the sources of financing have been numerous and heated since unemployment insurance was first discussed in the United States. The structure of the unemployment insurance system in operation today still reflects the basic compromises and provisions contained in the first piece of national UI legislation enacted in 1935. Nevertheless, important differences exist between the UI system of today and the original plan. The changes in the UI program have shifted the focus away from insurance and toward income transfer and support. It is not accidental that many people frequently use the term *unemployment compensation* in place of *unemployment insurance*.

This article briefly summarizes the history and operation of the U.S. unemployment insurance system and examines several aspects of the program design.² Particular attention is paid to welfare economics issues and insurance aspects of the system. The place of private insurance companies in the unemployment insurance market is discussed, and comparisons between public and private insurance are drawn. These ideas are especially timely, in light of the recently issued report of the National Commission on Unemployment Compensation to the President and Congress, in which a number of changes to the present system were suggested. If these recommendations were adopted, larger benefits would be provided to a greater number of people, entailing a greater reliance on the U.S. Treasury than is currently the case.³

1. See Nelson [13], p. viii.
2. For more thorough discussion of the history and operation of the U.S. unemployment insurance system, see Nelson [13] and Haber and Murray [8].
3. This is my evaluation of the recommendations contained in the commission's preliminary report. See National Commission on Unemployment Compensation [12]. As this article was going to press, I received *Unemployment Compensation: Final Report*, which contains a thorough and thoughtful discussion of current issues in UI reform.

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I. Design of the System

As the problem of unemployment became more pervasive with the industrialization of the United States, Americans became more accepting of unemployment insurance and programs designed to minimize unemployment and its attendant risks. Some of the earliest advocates of unemployment insurance in the United States sought merely to copy the "social insurance" models of many European countries, in which employers, employees, and governments together pooled funds to be used for jobless benefits. The term *insurance* in this context was very appropriate, because the presumption of these plans was that unemployment was a risk associated with industrial life, much the same as a factory injury. In theory, of course, government contributions were not necessary. In fact, the first European plans were an outgrowth of private unemployment plans operated by trade unions. The entire system could have remained private, being financed by either firms or employees alone or by both together. However, experience with voluntary or private plans eventually led to compulsory public insurance systems, partly financed with general revenue funds. This practice was readily accepted in Europe because society viewed industrialism as a source of public benefits. Moreover, the risk of large claims faced by any one employer could best be diversified, it was thought, if all industrial workers were covered by one pooled fund. Furthermore, Europeans traditionally accepted the role of a strong central government in determining social policy.

The American experience with unemployment insurance was heavily influenced not only by the European approach, but also by a different philosophy toward unemployment and the role of state government in a federal-state political system. Unemployment in the early 1900s among full-time workers in the United States was attributable not only to indolent employees, some reformers argued, but also to inefficient employers. Unemployment could be prevented, it was claimed, by financially encouraging firms to schedule production more carefully. Just as mandatory workmen's compensation encouraged employers to make the work place

safer through the payment of insurance premiums, so too could unemployment insurance promote employment stabilization.

Proponents of this prevention view believed that each employer should establish an unemployment insurance fund to cover fully (that is, self-insure) his own employees. Once an employer accepted the responsibility of paying benefits during slack periods, he would expand his work force cautiously during boom times. Stability and order in management would solve the problem. Under this arrangement, however, an individual employer's liability to his employees would end when the reserve fund was drained; there would be no guarantee to the employee that adequate benefits would be paid for the duration of his unemployment. Critics did not regard this type of plan as true insurance, because the employer's exposure to risk was not diversified and the employee could not easily anticipate his ultimate indemnity. Instead, the emphasis of this approach was on altering the employer's behavior, rather than adequately compensating employees.

In the absence of state or federal legislation forcing firms to establish any form of unemployment insurance, few voluntary plans were organized. Even labor union leaders claimed that compulsory plans interfered with, and ultimately would undermine, progress that could be attained by employees acting in their own interest. Eventually, it became clear to those who advocated some type of unemployment insurance that voluntary plans established by employers would never be offered to a large number of employees. Although they did not do so, private insurance companies could have offered policies to firms on behalf of employees, much as they did in the field of workmen's compensation.⁴

4. The economist John R. Commons advocated that unemployment be treated as preventable, and argued that the workmen's compensation insurance experiment undertaken in Wisconsin was a model of insurance as a preventive against unemployment. See Nelson [13], p. 105.

Several states made efforts to set up compulsory UI plans during the 1920s. These years witnessed intense struggles among interest groups over the scope and nature of the states' role in unemployment insurance. States' approaches were far from uniform. Wisconsin enacted the first state program in 1932, declaring that:

The decreased and irregular purchasing power of wage earners in turn vitally affects the livelihood of farmers, merchants, and manufacturers, results in a decreased demand for their products, and thus tends partially to paralyze the economic life of the entire state. . . . Industrial and business units in Wisconsin should pay at least a part of this social cost, caused by their own irregular operations. To assure somewhat steadier work and wages to its own employees, a company can reasonably be required to build up a limited reserve for unemployment. . . . The economic burdens resulting from unemployment should not only be shared more fairly, but should also be decreased and prevented as far as possible.⁵

The Wisconsin legislation reflects the self-insuring and preventable approach to unemployment insurance. By way of comparison, in 1931 the Ohio legislature created the Ohio Commission on Unemployment Insurance "... to investigate the practicality and advisability of setting up unemployment reserves or insurance funds to provide against the risk of unemployment, and to recommend . . . legislation . . . which may seem to offer the best preventive remedy to avoid future distress and suffering such as is being undergone by our citizens who are unable to

find work through no fault of their own."⁶ In its report, the Ohio commission objected to plans based on employer reserves:

. . . considerations, in our judgment, condemn the proposal advocated in some states that there be substituted for the principle of insurance a system of compulsory reserves, to be kept separately by each employer or by the state in a fund with separate accounts for each employer. Under these plans the benefits drawn by employees who are without work are limited to the reserves set aside by their own employers. There is no pooling of risks, no purchasing of insurance. The essential principle of insurance, that all who are subject to the risk shall pay premiums and those who actually suffer the risks shall receive stipulated benefits, is discarded.⁷

The employment legislation eventually enacted by the U.S. Congress, as part of the Social Security Act of 1935, compromised the sentiments of those wanting limited-liability employer funds with those favoring risk-pooling insurance plans. The federal government levied a payroll tax against employers to finance the administrative costs of the system and to provide a loan account for the states (see Financing Unemployment Insurance). States had to establish plans, binding on a particular group of employers, but were free to set their own eligibility requirements, benefit levels and durations, and exact financing schemes. To encourage the state to impose higher tax rates on firms with greater layoff rates, the federal government permitted so-called "experience-rated plans" to qualify for a substantial credit against the federal portion of the UI tax. This provision led all states to establish experience-rated plans. If the state plans were fully experience-rated, an individual employer over time would pay only for the benefits charged against his account and received by his own employees. Partially experience-rated plans could also satisfy the federal requirement; however, if states charged only one rate for "high-turnover" firms and another for "low-turnover" firms, some firms in effect would subsidize others.

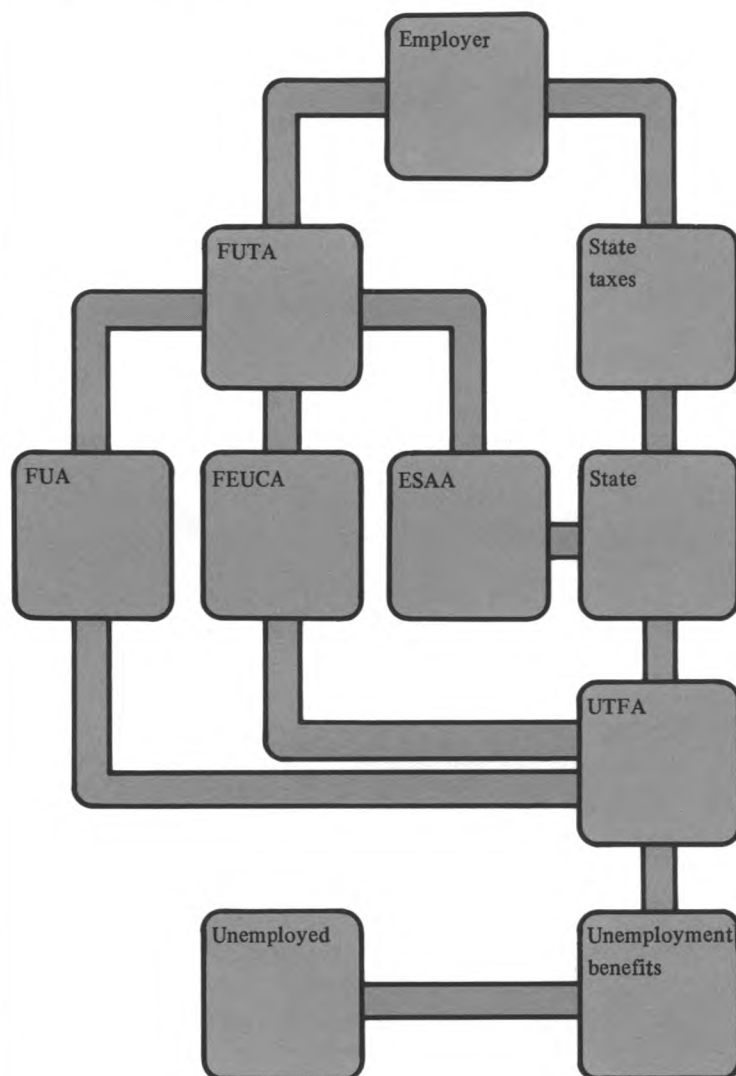
5. Wisconsin Unemployment Compensation Act of 1932. See Nelson [13], p. 225.

6. Amended Ohio Senate Joint Resolution No. 32, April 9, 1931.

7. Report of the Ohio Commission on Unemployment Insurance, Part I, p. 58.

Financing Unemployment Insurance

The state-federal unemployment insurance system is funded through dual taxation; employers are levied both a state and a federal unemployment tax. State taxes are legislated by each state and are deposited with the U.S. Treasury in an individual state trust. The federal tax, or FUTA, is an employer payroll tax earmarked for three federally maintained accounts: the Employment Security Administration Account (ESAA), the Federal Extended Unemployment Account (FEUCA), and the Federal Unemployment Account (FUA).



ESAA finances the administration expenses for state unemployment insurance programs. In effect, the actual operation of unemployment insurance programs is costless to the states.

FEUCA supports the federal obligation for providing extended unemployment insurance for workers living in states experiencing unusually high unemployment. These funds are used in conjunction with state unemployment trust funds.

FUA is a loan account established for the purpose of lending funds to states whose trust accounts are inadequate to support the level of state regular or extended unemployment benefits.

UTFAs, or unemployment trust fund accounts, are the only source of regular unemployment insurance for workers in the state.

II. Labor-Force Changes and State Reactions

"Many broad trends have converged to create an unemployment insurance financing problem in this country; the revenue base has declined, benefits have increased, unemployment rates have held at relatively high levels. As a result, many states have run out of funds to pay benefits."⁸ Costs have also outstripped benefits, because states on average have not adequately adjusted tax rates to keep up with the increasing reliance of the federal government on the UI system as an anti-recession stimulus and income-support tool. Federal initiatives include increases in the eligible UI population and development of an extended benefits program for periods of high unemployment. During the past 10 years, U.S. unemployment insurance reserves have declined from a near-record high to the lowest levels since the program was implemented.⁹

In 1950, 58 percent of all U.S. employees were on average covered by UI. Legislation enacted in 1970 and 1976 expanded coverage dramatically. In 1970, about 75 percent of all employees were covered by UI; currently, the figure is near 94 percent (see chart 1). During the same period, the distribution of employment by industry, sex, and labor-force attachment has changed as well (see tables 1, 2, and 3). There are now relatively fewer full-time workers

8. Diefenbach [7], p. 3.

9. For a more complete description of the causes and consequences of this situation, see Diefenbach [7].

Chart 1 Total and Covered Employment in the United States: 1950-79^a

■ Total employment
■ Covered employment

SOURCE: *Economic Report of the President* (U.S. Government Printing Office, 1980), Tables B-27 and B-33.

a. Data for 1979 were estimated by the author.

Table 1 Percent Distribution of Selected Workers in Nonagricultural Industries: 1960-79

Year ^a	Full-time and voluntary part-time, ^b millions	Full-time, percent	Voluntary part-time, percent
1960	55.4	89.5	10.5
1965	62.3	87.8	12.2
1970	68.5	86.3	13.7
1975	72.9	85.5	14.5
1979	84.9	85.6	14.4

a. Data prior to 1967 refer to individuals 14 years of age and over; after 1966, data pertain to persons 16 years and over.

b. Part-time employees are people who usually work from 1 hour to 34 hours per week; full-time employees usually work more than 34 hours per week.

SOURCES: *Manpower Report of the President*, March 1970, pp. 240-41; *Employment and Training Report of the President*, 1978, pp. 225-26; and *Employment and Earnings*, Bureau of Labor Statistics, U.S. Department of Labor, January 1980, p. 184.

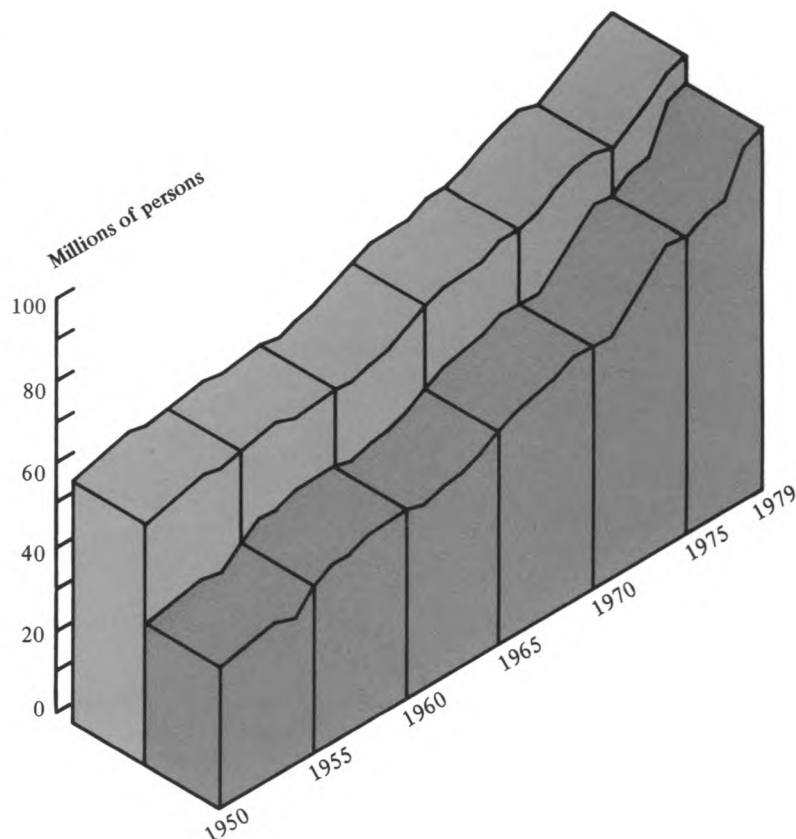


Table 2 Distribution of Employment by Industry Group

Industry group	Percent of total nonagricultural employment		Percent of industry group working voluntary part-time,
	1954	1979	1979
Mining	1.6	1.1	a
Construction	5.4	5.2	5.0
Manufacturing	33.3	23.4	3.3
Transportation and public utilities	8.3	5.8	6.4
Wholesale/retail trade	20.8	22.5	24.5
Finance, insurance, and real estate	4.6	5.5	10.2
Services and miscellaneous	12.2	19.0	21.0
Government	13.7	17.4	5.3
Total	100.0	100.0	13.5 ^b

a. Datum not available separately.

b. Figure represents the percentage of nonagricultural employees working voluntary part-time on average in 1979.

SOURCES: *Economic Report of the President* (U.S. Government Printing Office, 1980), Table B-34; and *Employment and Earnings*, Bureau of Labor Statistics (U.S. Government Printing Office, January 1980), p. 184.

Table 3 Total Employment and Voluntary Part-Time Employment by Sex

	Total employment, percent		Voluntary part-time, percent	
	1957	1979	1957	1979
Men	68.0	58.3	5.0	7.4
Women	32.0	41.7	19.0	24.1
Total	100.0	100.0		

SOURCES: *Employment and Training Report of the President*, 1980; and *Manpower Report of the President*, 1970.

in the labor force and relatively more people working part-time for voluntary reasons. Men, who are relatively less inclined than women to work part-time voluntarily, now constitute a smaller share of total employment. Goods-producing industries—the original stronghold of UI coverage—likewise account for a smaller share of total employment. Yet the service industries traditionally have attracted a far larger proportion of voluntary part-time employees than goods-producing industries.

The individual states have the responsibility and authority to alter the critical tax and benefit parameters of their programs as the economic and social environments change. Substantially different UI programs can be operated by states that have roughly comparable labor markets. Ohio and Pennsylvania are neighboring states with similar labor-market characteristics. During the 1970-78 period, for example, Ohio averaged 3,471,000 employees covered by UI, while in Pennsylvania 3,745,000 employees on average were covered. Yet Pennsylvania always had a greater—sometimes much greater—ratio of beneficiaries to covered employees (see table 4). In addition, benefits were paid out to the average beneficiary for more weeks in Pennsylvania than in Ohio. But in Pennsylvania tax contributions relative to benefits have been traditionally lower than in Ohio. Just as important is the fact that Pennsylvania has experienced difficulty in getting its benefits-to-contributions ratio below 100 when labor-market conditions have improved. Not surprisingly, UI trust-fund activity in the two states reveals heavy borrowing by Pennsylvania after 1974 (see table 5). Pennsylvania's net account balance dropped into deficit by more than \$1 billion in 1979 because of borrowing from the Federal Unemployment Account (FUA) (see chart 2).¹⁰

10. In the summer of 1980, Pennsylvania enacted the Unemployment Compensation Amendments. As a result, tax rates are now greater and benefits lower than would have prevailed.

**Table 4 Selected Ohio and Pennsylvania
UI Program Data**

Year	Ratio of beneficiaries to employment, ^a percent		Benefit duration, ^b weeks		Ratio of benefits to contributions, percent	
	Ohio	Pa.	Ohio	Pa.	Ohio	Pa.
1970	9.3	11.7	10.3	11.6	152.5	133.8
1971	10.2	13.5	13.4	13.7	216.7	171.5
1972	7.3	13.1	13.5	15.1	112.1	178.9
1973	5.0	9.6	11.5	14.8	50.6	107.8
1974	8.7	12.8	10.8	14.2	119.0	122.1
1975	14.1	18.6	15.2	18.2	351.3	241.8
1976	8.8	17.1	14.4	16.1	123.7	186.6
1977	8.1	17.3	13.4	14.5	88.2	164.1
1978	6.4	13.5	13.5	14.2	60.9	110.5
1979	9.2	14.3	11.8	13.5	94.8	111.8

a. Number of first payments made (1,000), divided by average monthly number of covered workers (1,000).

b. Average actual duration.

SOURCES: *Statistical Abstract of the United States*, U.S. Department of Commerce, Bureau of the Census (U.S. Government Printing Office, issues 1971-79); 1979 data from U.S. Department of Labor.

**Table 5 Trust-Fund Activity
in Ohio and Pennsylvania**

Year	Ohio			Pennsylvania		
	State account ending balance	Ad- vances from FUA	Repay- ments to FUA	State account ending balance	Ad- vances from FUA	Repay- ments to FUA
1969	647.8	0	0	863.8	0	0
1970	692.7	0	0	852.1	0	0
1971	619.5	0	0	742.7	0	0
1972	625.8	0	0	589.9	0	0
1973	768.1	0	0	594.6	0	0
1974	776.6	0	0	529.4	0	0
1975	294.2	0	0	87.8	173.8	0
1976	190.4	0	0	17.9	379.2	0
1977	220.8	1.9 ^a	1.9 ^a	24.3	373.3	0
1978	457.8	0	0	188.4	261.0	0
1979	521.0	0	0	127.9	35.0	55.6

a. While these transactions appear on the books of the Federal Unemployment Account, the state of Ohio maintains that the advance was requested but subsequently rescinded.

SOURCE: U.S. Department of Labor, Unemployment Insurance Service, "Monthly Summary of Trust Activity" (processed).

Pennsylvania is not the only state to find itself with a large debt to pay off. Nor is Ohio entirely faultless (in 1980, Ohio received an advance of \$245 million from FUA). Ohio seemed more prepared for the 1970s than Pennsylvania, from a UI budgetary point of view. However, as labor-market characteristics continue to change, it may be necessary to experiment with other aspects of the UI system. By reducing the individual employee's work load, that is, allowing each employee to work fewer hours (worksharing), there would be neither layoffs nor full benefits. Employees might prefer such a plan if they could collect partial benefits to compensate for their jobless hours. California is experimenting with a system that pays partial benefits for partial layoffs, illustrating how state UI plans can vary to meet the needs of the participants more flexibly.¹¹ Design changes such as the California experiment may not directly affect the tax or benefit rates. But labor-force participation rates may change as the mechanism for risk sharing changes. As workers have more opportunities to shift or spread unemployment risks, participation rates should increase.

III. A Private Market for Unemployment Insurance

There is evidence that private insurance companies contemplated offering insurance against the risk of unemployment in the 1920s, though no major insurer actually wrote policies. Most private insurers apparently felt that not enough information existed, or ever would, about the distribution of unemployment throughout the population.¹² And, as the Great

11. All states currently permit the payment of partial benefits, as long as earnings remain below a ceiling; in practice, these partial benefit restrictions in effect disqualify many worksharing plans. For more information, see Best and Mattesich [4].
12. Apparently two small insurance companies profitably wrote UI in Michigan, one of them as early as 1910. These are the only instances of private UI that I have discovered. The Metropolitan Life Insurance Company contemplated writing UI insurance in the mid-1920s, but never obtained approval from the New York State legislature. On the first point, see James [11], p. 432, fn. 41. On the second point, see the same reference, pp. 226-31.

Depression showed, the diversifiability of unemployment risks is not without limit. Insurers probably also worried about the moral hazard, that is, the risk that people could contrive to become unemployed in order to collect benefits. However, moral hazard must be confronted in every area of insurance and does not per se imply an unprofitable situation.¹³

In an important paper on the concept of unemployment insurance as insurance for workers, Baily [2] addresses several social-policy questions. As Baily points out, "If we pay income to unemployed workers and they then *voluntarily* choose to prolong their search for jobs, surely we cannot argue that the unemployed are worse off as a result [of having a longer spell of unemployment] There may be more unemployment as a result of UI, but it matters less. . . ."¹⁴ Beneficiaries are simply choosing to substitute job search or leisure for work. Baily believes that as long as the UI program design correctly anticipates and accounts for such behavior, the UI budget can remain actuarially sound. Nevertheless, UI is not without cost to society, in the form of reduced output, as a result of the tax. Topel and Welch [17] claim that a UI program can cause a net transfer of wealth from owners of capital to labor.¹⁵ On balance, it is not clear that longer job search goes on during the longer unemployment spell. The moral hazard problem makes the trade-off between the tax-induced distortions and the benefit-induced distortions hard to evaluate.

13. Reinhard A. Hohaus, assistant actuary for the Metropolitan Life Insurance Company, made this point forcefully in 1930. See Hohaus [10], p. 47.

14. Baily [2], p. 495.

15. Topel and Welch [17], p. 361.

Baily concludes that current UI plans provide socially appropriate benefit levels if beneficiaries do not extend excessively their duration of unemployment as a result of UI payments (an elasticity of duration of less than about 0.15). On the other hand, if actual prolonging is more substantial (an elasticity of about 0.3 or higher), then benefit levels appear to be too high. Baily assumes that all individuals are alike, and he does not consider the consequences for market efficiency of a UI system of taxing high- and low-risk individuals at different rates and offering different coverage levels. Nor does he consider the viability of a private market for UI.

Private insurance companies have a financial incentive to discover how individuals and firms differ in their risk characteristics.¹⁶ This information can be used to design policies more attractive to participants. The existence of a stable configuration of viable policies in competitive insurance markets is addressed by Rothschild and Stiglitz [15]. They show that high-risk individuals may cause an externality: "the low-risk individuals are worse off than they would be in the absence of the high-risk individuals. However, the high-risk individuals are no better off than they would be in the absence of the low-risk individuals."¹⁷ Rothschild and Stiglitz examine competitive insurance markets wherein customers, through their self-selection of different insurance contracts, could be forced to reveal their different risk characteristics.

They assume that an individual has an income of size W_1 if he avoids an accident, and an income of W_2 if an accident occurs. The probability of having an accident is p . The individual's expected utility function is given by:

$$\hat{V}(p, W_1, W_2) = (1 - p)U(W_1) + pU(W_2),$$

where $U(\cdot)$ represents the utility of money income. They assume all individuals are identical, except in their accident probability. Initially, all are equally risk-averse.

16. Risk characteristics refer to both *attitude* toward risk (the degree of risk aversion) and the *probability* of having an accident (high- or low-risk individual).

17. Rothschild and Stiglitz [15], p. 629. The analysis pertains to situations in which insurance companies do not know the risk characteristics of potential customers.

Rothschild and Stiglitz show that if all individuals have the same p , they can all purchase complete insurance (that is, $W_1 = W_2$) at actuarial odds. However, if there are both high- and low-risk individuals ($p^H > p^L$) and insurance companies cannot distinguish one from the other in advance, there cannot be an equilibrium in which both groups buy the same insurance contract. Rothschild and Stiglitz conclude that if there is a competitive equilibrium in insurance markets, the high- and low-risk individuals would purchase different insurance policies. High-risk individuals would be able to purchase as much insurance as they wanted, but low-risk individuals would not. High-risk individuals would, of course, pay more for each dollar of insurance than low-risk individuals. Rothschild and Stiglitz also point out that attitudes toward risk, as distinct from accident probabilities, may affect equilibrium contracts. As an example of this, consider a pair of UI contracts proposed by Baily (in a different context).

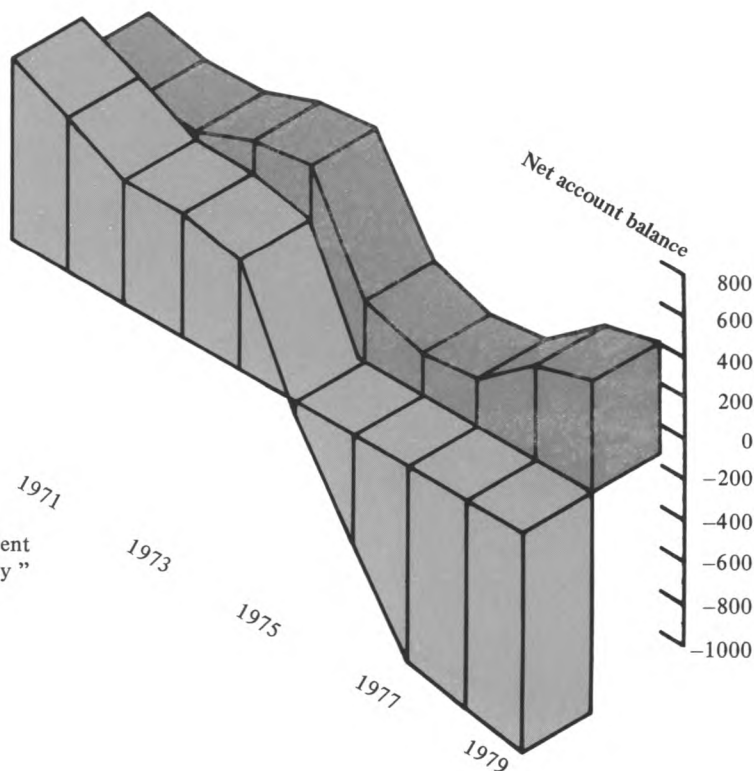
In designing an actuarially sound UI program, Baily shows how the UI benefit amount depends on both risk aversion and the elasticity of duration with respect to the benefit level. In a socially optimal scheme, these factors are also related to the percent of take-home pay covered by UI and the percent drop in consumption resulting from unemployment. Suppose risk type is positively related to the elasticity of prolonging an unemployment spell.¹⁸ For a given risk probability, more-risk-averse individuals would desire more insurance than

18. The unemployment risk has two components: the probability of *becoming* unemployed and the probability of *remaining* unemployed. In the present example, these two risks are simply lumped together for convenience. Low risk is an elasticity of duration of 0.15; high risk is 0.30.

Chart 2 Trust-Fund Activity in Ohio and Pennsylvania

■ Ohio
■ Pennsylvania

SOURCE: U.S. Department of Labor, Unemployment Insurance Service, "Monthly Summary of Trust Activity" (processed).



less-risk-averse persons (see chart 3). Under Baily's system, low-risk people with a high degree of risk aversion would purchase enough UI to cover about three-fourths of their take-home pay; less-risk-averse persons would purchase enough to cover only one-half of their take-home pay.¹⁹ High-risk people who are also more risk-averse would purchase one-half coverage of their take-home pay; high-risk people who are less risk-averse would receive coverage of only 4 percent.

Baily shows how risk probabilities and attitudes affect tax and benefit rates in a socially optimal UI system. Actuarially sound financing schemes must take into account attitudes toward risk and leisure time. Individuals who are likely to prolong substantially their unemployment as a result of UI benefits, and at the same time are rather cavalier in their attitude toward risk, are expensive to insure fully. That is why, in Baily's model, these individuals receive such small UI coverage. Baily's simplified example assumes that all individuals possess identical risk characteristics. As Rothschild and Stiglitz demonstrate, however, a competitive private insurance

market would tend to exploit differences in individuals' risk probabilities and attitudes. High-risk individuals would pay more for their insurance, and the amount of insurance desired at a given price would increase with the degree of risk aversion.

IV. UI Financing: Who Subsidizes Whom?

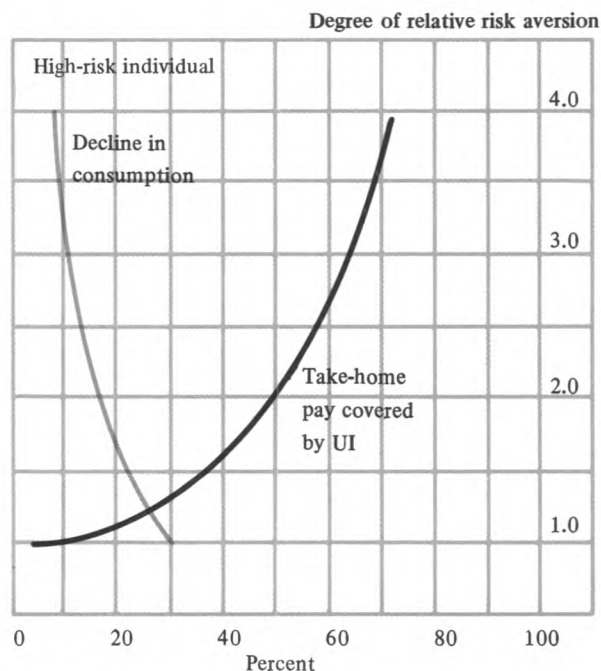
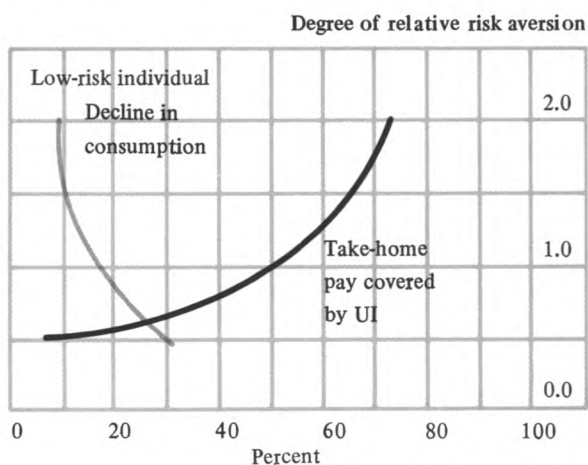
A number of studies have investigated the ability of firms to escape the burden of paying the entire cost of their employees' benefits.²⁰ When such situations occur, employers would logically be inclined to adjust work schedules through layoffs. Such conduct may be profitable for firms because the UI financing method can operate so that some firms are never taxed enough to cover claims charged against their accounts. But, if the financing incentives do contribute to layoffs, and if benefits are great enough to induce longer spells of unemployment, then the UI system could be regarded as an institution that raises the aggregate unemployment rate. Viewed differently, does a social cost arise from implicit contracts between employers and employees to "take advantage" of the UI system?

19. High-risk aversion is defined as constant relative risk aversion equal to 2; low-risk aversion is degree 1.

20. For an overview of this literature, see Topel and Welch [17], especially pp. 353-63.

Chart 3 Optimal Take-Home Pay Covered by UI and Optimal Declines in Consumption by Risk Category

SOURCE: Baily [2], p. 500.



To answer this question, it is fair to ask whether a private UI system would have the characteristics that all firms be perfectly experienced-rated (that is, self-insuring), and that employees' incentives to prolong unemployment be more sharply curtailed. Surely a private system would want to reduce the moral hazards stemming from the behavior of both firms and employees. Employee moral hazard could be reduced by changing the pattern of benefits from a stream of equal payments to a lump-sum payment (Baily [2, p. 503]), or to a stream of declining payments (Shavell and Weiss [16]). There could be a greater deductible, in the form of an increased waiting period before collection of benefits. In addition, there may be some coinsurance. Employer manipulation of the system could be discouraged through higher tax rates on chronic deficit-account firms. States currently have the authority to make these kinds of changes in their UI plans. The fact that they have not suggests that other aspects of the program are extremely important to program design.

At root, insurance is designed to cushion people against losses they might suffer through no fault of their own. To the extent that individuals can reduce their own risk, a well-designed insurance scheme would provide incentives for the insured to do just that. The arguments often cited today as criticisms of the structure of the current UI system are based on assumptions regarding the source and preventability of unemployment. A UI system that is perfectly self-insuring at the firm level certainly would not eliminate unemployment, no matter how the current taxes and subsidies across firms are rearranged.

The debate over the "appropriate" degree of experience rating is really a debate over who should bear the financing burden, and in what proportions. Topel and Welch [17] report that experience rating has become less relevant to the financing of the UI system over time, as an increasing number of firms reach states' tax-rate maximums.²¹ At the maximum tax rate, firms cannot be further penalized for additional layoffs. Consequently, an increasing number of low-risk firms are subsidizing high-risk firms. In addition, because average tax rates are not increasing sufficiently, the UI system as a whole is becoming more reliant on the U.S. Treasury for loans.²² Hence, the U.S. system has evolved more toward the European system, where the unemployment risk is more broadly shared by the general public.

In general, UI benefits currently are related to weekly earnings levels prior to unemployment; a typical formula is a benefit-replacement ratio of one-half, up to a stipulated maximum number of dollars. This sort of arrangement means that higher-wage individuals (those at the maximum) cannot obtain as much insurance, relative to their earnings, as lower-wage persons. This condition holds regardless of risk probabilities or attitudes. Other factors equal, a private UI system may offer some high-wage persons more insurance. Indeed, private arrangements already exist to remedy this inefficient aspect of our compulsory UI system. Many employees in the automobile industries, through collective bargaining contracts, purchase (perhaps in the form of foregone wages) supplementary unemployment benefits. Some high-wage earners, on the other hand, currently may be forced to carry more UI coverage than they would like. Individuals who carry excessive insurance have no way to sell it back.

21. Topel and Welch [17], p. 375.

22. The first time that any state borrowed from the Federal Unemployment Account for regular UI benefits was in 1972. The first time that the U.S. Treasury loaned funds to FUA for the regular UI program was in 1975. Treasury loans to FUA have not been repaid.

All insurance schemes involve a pooling of risks, and, therefore, *ex post* some people always pay premiums in excess or deficit of their claims. Under the present UI system, however, there is no way for individuals, or firms for that matter, to choose from among alternative insurance policies. This is bound to be inefficient, in the sense that many individuals now carry more or less than they would freely purchase at the market-determined rates. The inefficiency arises because *ex ante*, some people would choose different, but viable, policies.

In all group insurance situations, such as when firms and not individuals purchase the insurance, low-risk *employees* tend to subsidize high-risk *employees*. The benefits received by an unemployed worker are never adjusted for his or her personal turnover experience. Some individuals are more inclined to prolong their spells of unemployment than others, and these people are relatively more responsible for increases in employers' tax rates. In addition, some individuals are more prone to be separated from employment than others, regardless of how diligently they might search for new employment.

Nevertheless, group plans purchased in a free market could provide firms more flexibility in meeting the insurance needs of their employees. As is the case with health insurance, some employers may offer no unemployment insurance at all. To avoid undue hardship, however, states may require all insurers doing business in the state to sell unemployment insurance to any individual (not in a group plan) who wants it. Furthermore, the states may require certain aspects of these private market plans to meet minimum requirements. All sorts of arrangements are possible. The point is that the UI system could operate more as an insurance system and less as a transfer or income-support system, if states so choose.

Enough information about the incidence and duration of unemployment at the firm level probably exists for private insurers to function in the UI market. But to operate profitably, the quantity of insurance offered, the price of insurance, and the people eligible for insurance may differ substantially from the system currently in operation. The tax and subsidy patterns would be different. Some people likely would be better off, while others would not.

Because the UI system deliberately operates as an income-transfer program as well as an insurance program, changes in the pattern of the subsidies are important to public policymakers. High-income workers on average transfer income to low-income workers as a result of program design. Even so, benefits may be inadequate for low-wage workers, from a public-policy perspective. Indeed, a venerable literature suggests exactly that conclusion (Becker [3]; Burgess and Kingston [6]). On the other hand, a recent study by Hamermesh [9] contends that for one-half of the population UI benefits are more than adequate: "...if the purpose of UI is to prevent recipients from suffering declines in living standards, which one may interpret as declines in consumption, our evidence suggests that a substantial portion of benefit payments are not target-efficient toward this goal. That is, payments could be redistributed among recipients so that more are prevented from suffering declines in living standards, yet no more benefits are paid out."²³

A private insurance market would more efficiently account for employee risk characteristics than the compulsory system currently in operation. Separate income-maintenance programs could be created or modified to deal with public-policy objectives left unfulfilled. A different orientation, suggested by Blaustein [5], would be a more thoughtful integration of the current UI system with current labor-market-related income-maintenance programs. While this approach does not depend on the operation of a private market for unemployment insurance, it would attempt to curb the socially wasteful incentives for employers and employees to take advantage of the current system. Any UI reform proposals must recognize that the "strict insurance" underpinnings of the system are difficult to define and subject to public-policy considerations.

23. Hamermesh [9].

V. Conclusion

The current UI system does not permit employees to choose among alternative insurance policies in accordance with their own risk characteristics. This surely results in an inefficient sharing of the risks associated with unemployment. To some extent, high- and low-turnover firms compensate employees for some of the employment risk directly through the wage rate, but a combination wage and UI program is probably a superior method for accomplishing this objective.²⁴ Insurance reserve funds result from the systematic contributions and withdrawals of the participants (in the current system, employers). If some employers do not have sufficient resources to ante up contributions from time to time as required to balance against withdrawals, these employers may in turn have to reinsure with others to shed even more risk.²⁵

The inability of, or difficulty for, all employers to self-insure completely their unemployment risks leads to cross-firm subsidies. Those who seek to change the parameters of the current UI system must recognize that a private market for UI, while more efficient in one sense, is likely to change the pattern of subsidies among firms and individuals.

24. Azariadis [1] discusses the difference between wage-only and wage-plus-UI compensation packages (see pp. 5-18).
25. Frequently, some companies are permitted to operate as self-insured employers in state *workmen's compensation* insurance programs. These companies simply pay claims from their own funds, but the benefits are the same as those paid by firms that remit taxes to the state. If a large firm faces the prospect of becoming insolvent, a state is prudent to revoke this self-insuring status and require payroll taxes to be collected and remitted to the state. The state of Michigan is considering revoking Chrysler Corporation's self-insuring status for workmen's compensation insurance. If Chrysler cannot obtain private insurance, the state could move to shut the company down. Potential insolvencies such as these are part of the reasoning in severely limiting the number and type of reimbursable employer accounts in the UI system. See "Chrysler Must Buy Workers' Insurance, Says State of Michigan," *Wall Street Journal*, December 26, 1980, p. 3.

A private UI system does not necessarily have to be based on perfect experience rating either. If self-insurance at the firm level is a feature of some private plans, benefit ceilings might be relatively low for some high-turnover firms. These low ceilings are precisely what would frustrate the income-transfer objectives of some policymakers.

Current practice has resulted in more risk sharing among firms within states, and to some extent with the U.S. Treasury. The public may accept this practice, reasoning that the bulk of unemployment is neither preventable by firms nor solely their responsibility. And while the current UI system clearly induces more unemployment than a fully experience-rated system, unemployment insurance of almost any reasonable sort is likely to support employment because it enables people to shed some of the risks associated with participation in the labor force.²⁶

Differences among state UI plans, such as those in Ohio and Pennsylvania, demonstrate that states can—and eventually must—make changes in program design that lead to actuarially sound systems. Having the Federal Unemployment Account as well as the U.S. Treasury to rely on, state plans are removed from some of the disciplines that a private market would impose. Private insurers are likely to adjust premiums and benefits much more quickly than state-administered systems.

The framers of our state-federal UI system were sensitive to the possibility that social attitudes toward unemployment and unemployment insurance could change considerably. They established a program encumbered by few restrictions. Most of the criticism leveled at the current system ignores the trade-off between individual choice and public-policy objectives. A private market solution may be feasible and offers some attractions. Experience with the present system and a growing body of evidence suggest that states should experiment with plans that meet public-policy needs and yet do not unduly circumscribe individual choice.

26. This point is, unfortunately, not discussed adequately or often in the UI literature. Azariadis [1] provides an example of how a fully experience-rated plan supports an *employment* level larger than is socially optimal; for an unrated system, the benefit level can be chosen to yield the socially desirable employment level (see pp. 18-22).

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