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THE ECONOMICS OF FEDERAL SUBSIDY PROGRAMS

A COMPENDIUM OF PAPERS

SUBMITTED TO THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

PART 2—International Subsidies

JUNE 11, 1972

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LETTERS OF TRANSMITTAL

JUNE 8, 1972.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Members of the Joint Economic Committee and other Members of Congress is the second part of a compendium of papers entitled, "The Economics of Federal Subsidy Programs," submitted to the Joint Economic Committee.

The views expressed in these papers do not necessarily represent the views of members of the Committee or the Committee staff. They represent studies of a number of subsidy programs, which it is hoped will provide a focus for further hearings and public debate.

WILLIAM PROXMIRE,
Chairman, Joint Economic Committee.

JUNE 8, 1972.

Hon. WILLIAM PROXMIRE,
Chairman, Joint Economic Committee, Congress of the United States, Washington, D.C.

DEAR MR. CHAIRMAN: Transmitted herewith is the second part of a compendium of papers entitled "The Economics of Federal Subsidy Programs."

The Joint Economic Committee has invited some 40 experts to contribute papers to this compendium which will be published in several parts. The papers in this second volume are concerned with subsidies that affect U.S. foreign trade and capital flows. They deal with three financial devices used to provide subsidies: export credit subsidies provided by the U.S. Eximbank, tax subsidies, and purchase subsidies provided by the U.S. "Buy American" policy.

The Committee is indebted to these authors for their excellent contributions which, in conjunction with the study prepared by the staff, should stimulate widespread discussion among economists, policymakers, and the general public on the Federal subsidy system. It is hoped that by focusing attention on the subsidy system this study series will contribute substantially to improvements in public policy and the efficient management of public funds.

Mr. Jerry J. Jasinowski of the Committee staff is responsible for planning and compiling this compendium with suggestions from other members of the staff. He was assisted in research and editorial work by Douglas Lee and in administrative and secretarial work by Beverly Park.

The papers contained herein should be interpreted as representing only the opinions of their authors, and not necessarily reflective of the views of Committee members or staff.

Sincerely yours,

JOHN R. STARK,
Executive Director, Joint Economic Committee.

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EXPORT CREDIT SUBSIDIES AND U.S. EXPORTS: AN ANALYSIS OF THE U.S. EXIMBANK

By Douglas R. Bohi*

Summary and Conclusions

The Export-Import Bank of the United States (Eximbank) is a government agency designed specifically for the purpose of promoting U.S. exports by providing low-cost export loans and insurance. This paper seeks to analyze the activities of the Eximbank, with particular emphasis on the implications of a major expansion in operations suggested by the Export Expansion Financing Act of August 17, 1971. After a brief description of Eximbank activities, there is a discussion of potential costs and benefits arising from these activities. Several kinds of costs are noted, and that these costs may on occasion outweigh benefits, particularly if an expansion of the Eximbank invites foreign retaliation.

Eximbank operations are considered beneficial to the extent that the demand for U.S. exports is increased. Export demand may be increased by providing credit that is not available from private sources, or by offering credit terms competitive with foreign sources. A discussion of the availability and competitiveness arguments suggests that, while these arguments may be valid in establishing a basis for the existence of the Eximbank, they are not strong enough to justify a major expansion in lending activities. It is suggested instead that, whenever the private market breaks down with respect to the export financing, a preferable alternative to Eximbank loans is an expansion of Eximbank guarantees and insurance.

The final section of the paper considers the importance of Eximbank credits in promoting U.S. exports. The absence of any strong requirement for additional Eximbank financing to fill gaps in the private financial market, and the lack of any disadvantage in U.S. credit terms relative to those abroad, suggest that Eximbank loans may not be an effective means of promoting U.S. exports. In addition, the role of easy credit terms is severely limited by the existence of a number of other important economic factors that affect trade patterns, including relative productivity, availability of resources, level of income, and relative prices. The hypothesis that Eximbank loans have had a significant influence on U.S. exports is tested statistically using recent historical experience. Considering first the relationship between changes in exports and loans by country, and then changes in exports and loans by types of commodity, it was concluded on both counts, that the Eximbank has had no significant influence on exports.

In view of these findings, it is recommended that the United States rely less on export credit subsidies as a means to improve the trade balance, and investigate instead alternative methods of export pro-

*Professor of economics at Southern Illinois University.

motion. Better yet, it is recommended that policymakers reconsider the relative efficiency of the wide range of programs in the fields of export promotion and import controls. If the recent decision to float the U.S. dollar in international markets is an indication of the willingness to adjust the balance of payments by this method in the future, the logical basis for most import control or export promotion programs will be eliminated.

Eximbank Operations

The Eximbank offers three major programs of financial assistance for purchases of U.S. exports: direct export loans, discount loans on export paper, and guarantees and insurance of export debt obligations. Table 1 provides a history of these programs since 1961.

TABLE 1.—EXIMBANK AUTHORIZATIONS [1]

[In millions of dollars]

Fiscal year	Direct loans	Discount loans	Guarantees and insurance	Total
1961	1,242.0	----------	172.0	1,414.0
1962	1,093.0	----------	768.2	1,861.2
1963	679.7	----------	794.2	1,473.9
1964	778.3	----------	964.2	1,742.5
1965	851.5	----------	1,007.5	1,859.0
1966	1,149.0	----------	993.0	2,142.0
1967	2,652.1	71.5	883.7	3,607.3
1968	2,323.2	203.1	1,007.8	3,534.1
1969	1,110.1	185.1	1,221.5	2,516.7
1970	1,589.0	585.0	1,014.0	3,108.0
1971	1,766.0	475.0	1,362.0	3,581.0

[1] Source: Annual report of the Export-Import Bank of the United States.

The Export-Import Bank Act of 1945 prohibits the Eximbank from competing with the private market in export financing. It requires that the loans generally must be for specific purposes, offer a reasonable assurance of repayment, and must not impose any adverse economic or political effects on the U.S. Legislation in 1968 specifically prohibits the Eximbank from financing exports to countries engaged in or assisting armed conflict with the United States, and further prohibits Eximbank financing of military goods to less-developed countries unless directed by the President.

Congress controls the financial operations of the Eximbank by placing ceilings on both annual authorizations and total authorizations outstanding. The Eximbank's overall lending authority has increased from $7 billion in 1961 to $20 billion at present. Insurance and guarantees are charged against these totals at a rate of 25 percent of the Eximbank's contractual liability up to a total of $1 billion in 1961 and $10 billion at present. Annual lending authority has been controlled by congressional action and is based on Presidential recommendation as transmitted in the annual budget. Legislation passed in August 1971 removed receipts and disbursements of Eximbank activity from the budget totals, but still requires that the net outlay which would have been in the budget be separately reported to Congress.

The Eximbank was originally funded by the U.S. Treasury with $1 billion in capital stock. Prior to fiscal year 1962, the Eximbank expanded its operations merely by drawing upon a $6 billion line of credit with the U.S. Treasury. Since 1962, the Eximbank has come to rely more heavily on borrowing from private capital markets. In 1962 the Eximbank introduced participation certificates (PC) in which commercial banks could purchase interest bearing instruments collateralized by a pool of the Eximbank's export paper. Ownership of the original paper was retained by the Eximbank, including the loan servicing and risk of default, while the participation certificates were ruled by the U.S. Attorney General in 1966 to be guaranteed by the full faith and credit of the U.S. Government. From 1962 to 1968, $4 billion worth of PC's were issued.

The Eximbank introduced participant certificates and treated them as sales of assets in order that they would enter the budget as offsets to expenditures and thus have the same positive effect on the final budget total as tax receipts. Had the certificates been treated as borrowing, or as financing other transactions, they would have the effect of increasing the budget deficit.

In 1967, the Commission on Budget Concepts [1] recommended that the participation certificate be treated in the budget as a means of financing expenditures, not as an offset to expenditures. With the adoption of this recommendation in 1968, the Eximbank stopped selling PC's and introduced in their place the certificates of beneficial interest (CBI). The CBI represented a partial ownership of one or more specific export loans, rather than a pool of loans in the case of participation certificates, although the Eximbank continued to assume the full risk of default. On Eximbank's request, the Office of Management and Budget ruled in April 1968, that CBI's constituted a sale of assets rather than borrowing. During fiscal years 1969 and 1970, the Eximbank issued $700 million of CBI's for financing export loans.

The Eximbank has also issued its own debt obligations in private capital markets, generally at an interest rate of 0.5 percent above the Treasury borrowing rate. There has been some controversy over the differential treatment of CBI's, PC's, and Eximbank securities. However, the basis for this controversy was eliminated with the passage of the 1971 legislation removing the Eximbank from the budget totals. Removal from the budget increases the Eximbank's flexibility to draw on private capital in order to increase its export loan operations up to the maximum permissable.

Nearly all industrial countries extend some form of financial assistance to their exporters. Other countries have tended to rely more heavily on government guarantees of export paper or liberal discounting of export paper. In contrast, the Eximbank has until recently concentrated more heavily on dollar credits extended directly to borrowers outside the United States for purchases of U.S. exports, and less heavily on discount loans or guarantees and insurance. Through 1969, over 50 percent of Eximbank authorizations have been direct loans. These are hard loans in the sense that they must be repaid in dollars or other hard currency, within a specific time period, and with interest. Repayment time currently ranges from 5 to 15 years at 6 percent annual interest in semiannual installments.

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[1] "Report of the President's Commission on Budget Concepts," October 1967.

On September 1, 1966, the Eximbank initiated the discount loan program to induce commercial banks to increase their financing of U.S. exports. Under this program, the Eximbank will lend to U.S. commercial banks and Edge Act corporations [2] up to 100 percent of the amount of eligible export paper having a maturity between 1 and 5 years.[3] The interest rate on discount loans is 0.5 to 1 percent less than the commerical bank loan rate. The primary purpose of the discount loan program is to insure adequate export financing during periods of tight money by providing banks with a means to increase their liquidity. In effect, the program permits commerical banks to build up a contingent liability against the U.S. Government in the form of commercial export paper which may be cashed-in during periods of tight money. The August 1971 legislation authorizes the Eximbank to extend the discount program to short-term export paper (i.e., paper having a maturity less than 1 year).

The guarantee and insurance operations of the Eximbank cover commercial credit risks arising from the insolvency of a buyer of U.S. exports, or political risks which prevent consummation of payment, such as currency exchange restrictions, import restrictions, war, revolution, and expropriation. The extent of Eximbank liability is based on a percentage of the financed portion of the sale after deduction of the required cash down payment. Insurance and guarantee fees are assessed on the basis of four categories of risk markets, where countries are graded according to degree of economic and political risk. The principal distinction between the guarantee program and the insurance program is that the former involves commercial bank loans while the latter involves exporter loans.

Table 2 shows the distribution of Eximbank loan authorizations by area for fiscal years 1964 to 1969. It is noted that the major recipients of Eximbank credits have not necessarily been the underdeveloped countries. Latin America is the largest recipient of loans to a underdeveloped area, but even here the bulk of credits are extended to countries such as Mexico, Peru, and Venezuela, that have strong credit and balance of payments positions, rather than to countries such as Brazil that have substantial balances of payments difficulties. The reason for this pattern is that the Eximbank makes only "hard" loans which offer "a reasonable assurance of repayment". In response to criticism that the Eximbank has been overly cautious in its lending policies, legislation was enacted on July 7, 1968, authorizing an expansion of the Eximbank's lending authority for transactions with a somewhat higher degree of risk, up to a limit of $500 million liability. In the first 2 years of operation, 1969 and 1970, total liabilities under this "export expansion facility" totaled $321.5 million. This compares with total authorizations of $6.7 billion during the same period, suggesting either the bank has continued a cautious lending policy or that it had not been rejecting as many high risk loans as critics charged.

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[2] Corporations organized under the Edge Act (12 U.S.C. 611) for the purpose of engaging in international financial activities.

[3] Ineligible debt obligations include: (1) for export of military items, (2) on exports already guaranteed by Eximbank, or (3) for exports to countries engaged in, or assisting, armed conflict with the United States.

TABLE 2.—AUTHORIZATIONS BY AREA[1]

[In millions]

Fiscal year	Africa	Asia	Canada	Europe	Latin America	Oceania
1964	$29.2	$182.1	$3.1	$447.6	$325.5	$10.2
1965	51.8	293.8	4.6	163.4	350.9	18.0
1966	91.3	333.2	8.3	377.3	652.7	117.3
1967	55.2	579.2	40.8	1,194.2	908.2	324.8
1968	118.5	500.6	539.0	822.6	762.3	302.6
1969	119.2	538.0	11.9	526.0	783.3	218.9

[1] Source: Annual report of the Export-Import Bank of the United States.

The Benefits and Costs of Eximbank Loans

The purpose of the Eximbank is to finance U.S. exports that would not be purchased in the absence of this credit. This function has taken on increasing importance as the U.S. balance of trade and overall balance of payments continue to deteriorate. The Eximbank may achieve its objective by providing export credit that otherwise would not be available in the private market, or by providing export credit on terms that are competitive with foreign subsidized financing.

The Eximbank's lending activity may be considered beneficial to the extent that it improves the U.S. balance of payments. However, every dollar in loans cannot automatically be regarded as a dollar's worth of improvement in the balance of payments. In certain cases the loans may actually produce an adverse effect on the balance of payments. In the first place, the loan is registered in the balance-of-payments accounts as a capital outflow, or deficit item. If the loan is accompanied by an increase in U.S. exports equal to or greater than the loan, the deficit entry will be offset, and future balance-of-payments accounts will record the loan repayment and interest as an inflow or surplus entry.

Thus, if the loan does not generate an equivalent increase in exports, there may result a net burden on the balance of payments. Such a burden would arise in cases where loans are granted on exports that would have been made without Eximbank assistance and would have been financed by cash or foreign credits. It would be inappropriate to argue that it is advantageous for the U.S. to redirect foreign financing to the Eximbank in order to gain the interest income. Since the Eximbank rate (6 percent) is below private market rates, the U.S. may actually lose interest income. If the Eximbank draws on U.S. private capital markets to loan at the 6-percent rate, and this forces the private market to forgo lending abroad or increase borrowing from abroad at higher rates, the two transactions result in a net deficit.

For the same reason, if Eximbank lending substitutes for private U.S. export financing, the lost interest income amounts to a net cost to the balance of payments. Moreover, the more favorable the official export credit terms, the greater the balance-of-payments cost, and the closer the loan approaches the status of an outright grant.[4] For example, suppose a $10 million Eximbank loan is extended for 1 year at 5 percent interest while the same loan in the private market would return 10 percent. The income loss due to the Eximbank loan is $0.5 million,

[4] See also, Wilson E. Schmidt, "The Economics of Charity: Loans Versus Grants," Journal of Political Economy, vol. LXXII (August 1964).

and would increase with the differential between the official and private rates. Consider again the same loan at the 5-percent official rate extended for 10 years (to be repaid in 10 equal installments). If the private rate is still 10 percent, the total income loss over 10 years would amount to $2.75 million. The same loan at the same annual rates extended for 20 years would produce a net loss of $5.25 million or over half of the amount of the loan.

An indirect burden on the U.S. balance of payments would arise if Eximbank loans for some exports produce a decline in the volume or prices of other exports. If the loan is used by the borrowing country to purchase capital equipment for the production of goods competitive with the U.S., the result may be the encroachment on U.S. markets and possibly a reduction in the price of U.S. exports. For example, extensive financing of U.S. airplane sales may produce strong foreign competition with U.S. airlines, forcing a reduction in the number of passengers traveling on U.S. carriers and a reduction in the price that U.S. carriers may charge for international travel. On the other hand, if the loan is used in the borrowing country to increase output of goods complementary to U.S. exports, or goods imported by the U.S., the loan may lead to either an increase in U.S. exports or a reduction in the price paid for U.S. imports.

The beneficial effect of export loans on the trade balance may be reduced indirectly if the Eximbank loan increases U.S. exports at the expense of third country exports, where the third country would have used the sale to purchase goods from the United States. Such an outcome is possible in cases where the third country export requires U.S. components, or if the third country export generates the foreign exchange required to effect other purchases from the United States.

U.S. exports generated by the Eximbank at the expense of third country exports are likely to lead to more direct and more serious consequences, however. If the operations of the Eximbank appear to adversely affect the exports of another country, that country will almost certainly react with a more competitive export credit program of its own. Reciprocal behavior of this sort is less well-known than in the case of import controls, but is nevertheless a common practice. Yet, if all exporting countries expand their export credit programs with more favorable terms, the result is that they remain equally competitive, but at higher public cost. Thus, the widespread use of official export financing will reduce or eliminate the beneficial effect of Eximbank credits on the U.S. trade balance.

The growth of official export financing reflects this kind of reciprocal behavior. The practice started following World War II as governments sought ways to improve their trade balances without resorting to import controls. Once started, other countries were forced to implement or expand their credit facilities in order to meet foreign competition. The General Agreement on Trade and Tariffs has not been implemented to discourage the escalating process. While export credit subsidies fall under the general heading of export subsidies in article XVI of the agreement, the article has not been enforced in this area because the governments concerned regard adequate financing as a traditional barrier to international trade, and it is considered the responsibility of governments to eliminate this barrier.[5]

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[5] Kenneth W. Dam, The Gatt: Law and International Economic Organization (Chicago: University of Chicago Press, 1970), pp. 138–9.

The public cost of official credit is basically one of opportunity cost arising from the diversion of private capital resources from alternative uses. It has already been demonstrated that if the funds are diverted from private export loans, there is an opportunity cost in the form of foregone interest revenue. If the alternative private use of the funds is domestic investment, the benefit foregone would be the resulting loss of output and employment that would have been generated by that investment.

Opportunity costs will be slight, however, in periods when resources are unemployed or underutilized. Moreover, to the extent that an Eximbank loan generates additional exports during a recessionary period, the consequent stimulus to output and employment may produce a net benefit to the domestic economy. Opposite results would be likely during a boom period in the economy. With capital resources typically in short supply during a boom, a diversion of funds through the Eximbank to export financing may have a high opportunity cost. Moreover, the stimulating effect of additional exports during a boom is unnecessary and may be detrimental to the economy. These considerations suggest that official export credits may be used as a countercyclical device, increasing the volume of loans in a recessionary period and reducing the volume in an inflationary period.[6] This would tend to minimize potential costs and maximize potential benefits arising from loans. Unfortunately, the motivation to liberalize export credits will work in the opposite direction. Since trade balances are often adversely affected during inflationary periods, but not during recessionary periods, the inducement will be to increase official export credits during the most costly time. Moreover, while the trade balance may require the greatest help during inflationary periods, the effectiveness of easy credits is reduced as a result of the contrary and more powerful influence of income and price changes on trade flows.

In either case, if the Eximbank loan does not generate additional exports, there are no benefits associated with the loan, only costs. Even if the Eximbank loan involves little or no opportunity cost in private capital market, the use of funds to finance exports that would have been transacted anyway amounts to a waste because these funds would not be available to assist other exports that really needed official support. Instances where an Eximbank loan is extended after a sales contract has been signed, or where the United States is the sole supplier, are perhaps the clearest examples of unnecessary offical export credit support. It may be argued that while such loans will not directly increase exports, they may lead to future sales. Such would be the case if the original purchase created a demand for American repair parts or complementary products. This, however, is a weak rationalization for a costly practice. A related argument is that the original Eximbank loan will generate goodwill for future purchases of American products. This is not likely to be an important element in the buyer's decision process. The buyer will settle on the source of supply on the basis of the total contract package. If credit terms are an important element of the package, it is current credit terms, not past terms, that are relevant in the decision process.

The question of goodwill generated by Eximbank loans raises a related issue of the role these loans may play in the borrowing country. Although the purpose of the loans is to generate additional U.S.

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[6] See also, Mordechai E. Kreinen, "International Lending as a Countercyclical Measure," *Review of Economics and Statistics*, vol. XLIII, No. 1 (February 1961).

exports, it is recognized that the loans may contribute to the economic progress of lesser developed conutries. Thus, the loans may achieve a net benefit in the borrowing country regardless of the effect on the balance of payments of the lending country.

The benefit of export loans to the borrowing country is clear. The loans permit the borrower to run a deficit trade balance in order to to import capital goods for the purpose of increasing domestic productivity. The net benefit, therefore, depends on the effectiveness of the loans in accomplishing economic growth compared with the eventual drain on the economy required to service the debt.

There are several reasons why the loan may impose a net burden on the borrowing country. First, since loans of this type primarily serve to promote the lender's exports, they may actually create an adverse growth effect by channeling demand from a cheaper alternative source of supply with inferior credit arrangements, or, more importantly, by neglecting investment priorities in the borrowing country. Second, even if the borrowed capital is used for high-priority projects, the borrowing country may not be able to absorb the borrowed capital effectively. In such cases, the capital inflow would be accompanied by increased consumption, capital flight, or a misallocation of other investment funds. The inability of less developed countries to absorb external capital effectively is a well-known and much discussed constraint on the productivity of external capital, but the subject is beyond the scope of this paper.[7]

Third, the shortrun requirements of debt service may require the restriction of imports (at a possible sacrifice to the domestic economy) in order to assure adequate foreign exchange to meet debt service requirements. The less diversified a country's exports and imports, the more serious the potential burden of debt service. Countries with exports composed mainly of primary products, for example, will be subject to great fluctuations in foreign exchange earnings. If imports are also less diversified in the sense that they are composed of necessities such as foodstuffs or capital goods, import restrictions to conserve foreign exchange reserves may impose serious harm on domestic growth objectives. These descriptions of exports and imports characterize those of most less developed countries.

Finally, the longrun capacity to service foreign debt depends on the long-term trends in domestic output and export income in the borrowing country. In order to sustain growth the developing country will often require a steady capital inflow. This implies that gross borrowing must increase in each successive year just to cover debt service. That is, in each successive year, a smaller percentage of borrowed capital would be available for investment purposes, while a larger percentage would be required for debt service. Moreover, a given rate of growth of domestic output generally requires an even faster rate of growth of imports. Unless the longrun trend in export earnings is high enough to overtake the international payments gap created by imports and debt service, the borrowing country will eventually become unable to repay the debt. Unfortunately, the outlook is pessimistic for most developing countries, since they typically have the same patterns of exports today as they had many years ago, dominated by exports of primary products with relatively stagnant average prices in world markets.

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[7] Raymond F. Mikesell, "Capital Absorbtive Capacity as a Limitation on Lending for Economic Development," in Mikesell (ed.), *U.S. Private and Government Investment Abroad* (Eugene, Oreg.: University of Oregon Press, 1962).

Evaluation of the Need for Eximbank Financing

The Export Expansion Financing Act of August 17, 1971, authorized an increase of $6.5 billion in the overall ceiling of the Eximbank program. The evaluation of the need for Eximbank financing considered in this section, and the importance of Eximbank activity as a determinant of U.S. exports to be considered in the next section, are directed toward an assessment of the advisability of utilizing the expanded authority.

The basis for the existence of the Eximbank, as well as the means by which the Eximbank promotes U.S. exports, is twofold: first, by providing credit unavailable in the U.S. private sector and; second, by providing credit terms competitive with foreign officially supported loans. The availability argument may be interpreted in at least three ways: (1) that private export credit is unavailable at any price; (2) that private export credit is unavailable at a price competitive with foreign private sources; or, (3) that private export credit becomes uncompetitive during periods of tight money conditions in the United States.

There are no convincing a priori reasons why private capital should be unwilling to extend export credits in general, although the argument may be applied in special cases where the volume of credit is large or special risks are involved. There is no available empirical evidence to support this argument. There is however, evidence to the contrary in the relatively important special case of aircraft sales. From 1966 to 1969, Eximbank financing of aircraft sales was reduced (partly as a result of ceilings on aircraft loans imposed by the Office of Management and Budget) while aircraft sales were increasing. (See table 3.) Private financing increased to make up the difference.

TABLE 3.—PERCENT EXIMBANK AND PRIVATE FINANCING OF AIRCRAFT SALES [1]

[Dollars in millions]

	1966	1967	1968	1969
Total nonmilitary exports	$421	$607	$1,190	$921
Eximbank	73	60	41	42
Private	27	40	59	58
Credit	4	13	28	31
Cash	20	19	25	21
Exporter participation	3	8	6	6

[1] Source: Comptroller General of the United States, *Audit of the Eximbank*, 1969.

For whatever reluctance does exist in private capital markets to finance exports, there are perhaps less costly alternatives to Eximbank direct loans. One alternative would be an expansion of the Eximbank guarantee and insurance program to reduce the risk to private capital. A second alternative would be more encouragement of private export funding pools, such as the recently established Private Export Funding Corp. (PEFCO), to cover large volume and special risk export loans. The Eximbank should operate only as a lender of last resort.

The second argument, that U.S. private credit is unavailable at terms competitive with foreign private sources, is contrary to the commonly acknowledged superiority of the American capital market. The private U.S. capital market has been a major supplier of inter-

national capital of all kinds during the past 25 years. It is difficult to imagine that the U.S. private sector could not handle the credit needs of U.S. exporters while foreign capital could. On the contrary, it is more plausible that foreign governments would have to support their export credit markets simply to compete with private U.S. capital. This point is perhaps best reflected in the following table of interest rates on long-term Government bonds in various countries.

TABLE 4.—LONG-TERM GOVERNMENT BONDS YIELDS[1]

	1958	1960	1962	1964	1966	1968	1970
United States	3.43	4.02	3.95	4.15	4.66	5.26	6.58
United Kingdom	5.47	5.77	5.90	5.98	6.94	7.55	9.22
Belgium	5.55	5.48	5.24	6.41	6.62	6.54	7.81
France	5.68	5.15	5.02	5.08	5.40	5.86	8.06
Germany	6.80	6.40	5.90	6.20	8.10	6.50	8.20
Italy	6.82	5.01	5.78	7.41	6.54	6.70	9.01
Netherlands	4.32	4.20	4.21	4.92	6.24	6.22	7.83
Canada	4.22	5.26	5.09	5.19	5.74	6.82	7.82
Switzerland	3.19	3.09	3.13	3.07	4.16	4.37	5.82

[1] Source: IMF, International Financial Statistics. Average yields to maturity on issues with at least 12 years life in percent per annum.

The U.S. Government bond rate is consistently below all but Switzerland. Switzerland is a special case, however, reflecting the unusually large size of the Swiss financial market relative to a small magnitude of national output and foreign trade.

The third argument, that private U.S. credit becomes relatively uncompetitive during periods of tight money, appears difficult to support. The significance of international capital flows during periods of tight money in the United States is one factor which throws doubt on this argument. Tight money and high interest rates in the United States generate an increase in capital inflows that will simultaneously increase capital availability in the United States and reduce availability abroad. Because of the large size of the U.S. financial market, higher interest rates in the United States will tend to raise interest rates abroad as well. This is reflected in the figures for 1968 through 1970 in table 4. Although U.S. rates have increased, they still remain below foreign rates. Interest rate differentials may have changed over this period, an important consideration for international investment, but absolute interest rate levels are the relevant consideration for financing export sales.

Nor does it appear that the Voluntary Foreign Credit Restraint (VFCR) guidelines imposed on private U.S. capital exports have operated in such a way as to impair the availability of credit needed to finance U.S. exports. In a recent study by the Federal Reserve to determine the effect of the VFCR guidelines during 1970, it was found that foreign importers were denied credit in only a handful of cases because of the guidelines, but even in these cases other sources of financing were found to complete the sale.[8] The conclusion is reached that their research "suggests strongly that banks do have the capacity * * * within the ceiling * * * to finance exports."[9]

Finally, it is worth noting that, while 1966, 1969, and 1970 were tight money years, they were also unusually good export years.

[8] Andrew F. Brimmer, Statement before the Subcommittee on International Trade, Committee on Banking and Currency, U.S. House of Representatives (May 19, 1971), p. 177.
[9] Ibid, p. 183.

Some rough but reasonably conservative estimates of the availability of private U.S. export credit for 1970 have been made and are presented in table 5. The estimated total of export credit for 1970 comes to $14.6 billion, or about a third of the total value of exports for the year. The remaining two-thirds would be financed by cash or foreign credits.

TABLE 5.—*Estimated sources of U.S. export credits for 1970* [1] *(in billions)*

Source	*Amount*
Commercial banks	$6. 8
Manufacturers	4. 0
Eximbank direct loans	1. 1
Other official credits	2. 7
Total	14. 6

[1] The commercial bank estimate is based on a Federal reserve survey result that commercial banks financed 16 percent of U.S. exports in 1970. [See Board of Governors of the Federal Reserve System, "Survey of Export Credit as a Portion of U.S. Bank Credit to Foreigners" (Mar. 3, 1971).] The estimate of manufacturers export credit is based on a 1968 estimate that banks and manufacturers extended export credit in the proportion 63 percent banks and 27 percent manufacturers. These percentages were extended to 1970. The Eximbank direct loan figure is adjusted for recent transactions which do not directly support U.S. products. It excludes discounts, guarantees, and insurance, since these would be counted as part of private export credits. The figure for other official credits was obtained from "Survey of Current Business" (June 1971) table 5, lines, A27, A29, A31, minus Eximbank adjusted loans.

Assuming commercial bank and manufacturers' export credits grow by the same percentage rate as the projected money supply (8 percent in 1971 and 5 percent in 1972), private export credit would reach $12.2 billion in 1972. Assuming further that Eximbank and other official export credits are held at their 1970 levels, total credit would be $16.0 billion in 1972. This total would support $48.0 billion exports in 1972, applying the same one-third domestic credit percentage as in 1970. This amounts to a 7-percent annual growth of U.S. exports, or about the same as the long-term growth trend in exports. If the Eximbank is granted a multi-billion dollar increase in its loan program over the 1970 level, there can be little doubt that considerable substitution of Eximbank credit for private credit will result. As pointed out in the previous section, this substitution creates a real opportunity cost for the United States that, unless offset by a net increase in exports, is detrimental to the U.S. balance of payments. An increase of, say, $2 billion in Eximbank loans for 1972 would imply that 1972 U.S. exports must grow in excess of 10 percent over 1971 in order to produce a favorable balance-of-payments effect.

A major part of the program expansion sought by the Eximbank involves the establishment of a new short-term discount loan program. The Eximbank claims that private short-term export credit is particularly scarce, especially during periods of monetary stringency.[10] This claim implies that the financial market tends to discriminate against short-term export credits, and that alternative sources of financing such as seller credits will not increase to make up the difference. There is indeed a preference for funding long-term transactions during periods of high interest rates, thus causing short-term rates to rise relative to long-term rates. But among short-term loans there is no reason to expect discrimination against export credits.

A federal reserve study indicates that over 90 percent of short-term export credits are extended on terms of less than 180 days, with an average life of 4 months.[11] A common debt instrument involved is

[10] See statement by Henry Kearns, President of the Eximbank, before Senate Committee on Banking, Housing, and Urban Affairs, Subcommittee on International Finance (March 1971), and before House Committee on Banking and Currency, Subcommittee on International Trade (May 1971).

[11] Board of Governors of the Federal Reserve System, "Survey of Export Credit as a Portion of U.S. Bank Credit to Foreigners" (Mar. 3, 1971).

the bankers' acceptance. Table 6 shows the growth of total bankers' acceptances, and acceptances used to finance exports. Export credits have grown rapidly since the beginning of 1969, reaching $1.5 billion by the end of 1970. This total turns over approximately three times a year thereby financing about $4.5 billion in exports.

TABLE 6.—BANKERS' ACCEPTANCES OUTSTANDING[1]

[In millions of dollars]

Year and month	Total outstanding	Export financing
1969:		
March	4,464	872
June	4,880	969
September	5,232	1,063
December	5,451	1,153
1970:		
March	5,352	1,113
June	5,849	1,162
September	5,848	1,285
December	7,058	1,561
1971:		
March	7,301	1,519
June	7,645	1,467

[1] Source: Federal Reserve Bulletin, table A–33.

Table 6 shows that both total acceptances and the portion used to finance exports have grown by 60 percent from the beginning of 1969 to mid-1971. This remarkable growth occurred during a period of great credit stringency. These figures suggest little concern over the growth of short-term credit in general, and reflect no discrimination against short-term export credit in particular.

A major qualification in a generalization of the data on bankers acceptances for all short-term export credits is that the acceptance market does not accommodate poor credit risks. There may be a bias against exports in the high-risk market that would not be reflected in the figures for bankers' acceptances. Unfortunately, there is no similar evidence on the availability of other sources of short-term export credits. However, to the extent that high-risk financing drys up during tight-money periods, a preferable alternative to the institution of an Eximbank discount loan program would be more a liberal use of the guarantees and insurance program to reduce the risk on private capital.

Consider next the major argument that Eximbank financing is necessary to meet competition from foreign officially supported export loans. There would be little dispute over providing the Eximbank means to compete with easy credit terms abroad. However, the issue at this juncture is not the justification for the existence of the Eximbank, but whether the relative credit terms are such as to justify new and larger Eximbank programs.

On long-term export loans, there seems to be general agreement that the United States has a competitive advantage relative to foreign credit terms. In congressional hearings, Mr. Henry Kearns, president of the Eximbank, noted that:

> The terms and conditions of U.S. export credit in the medium and long-term cases are as good or better than those imposed by other countries, and this is particularly true of Eximbank's direct loans.[12]

[12] Mr. Henry Kearns, president of the Eximbank, testimony before Senate Committee on Banking, Housing, and Urban Affairs, Subcommittee on International Finance (March 1971) p. 42.

Moreover, Kearns goes on to argue that:

> One effect of some of the proposals (to negotiate reductions in official export financing) * * * might well be to curtail the real competitive advantage occurring to U.S. exporters from the direct lending activities of Eximbank. This lending facility for appropriately long credit terms for major export transactions is of a type not generally available to exporters in most other countries.[13]

There is no available data to show the full extent of the U.S. competitive advantage in long-term export loans. However, a partial view is provided by table 7, which shows relative volume and rates on loans of the United States and other development assistance countries to the less-developed countries. These are bilateral government loans, repayable in hard currencies, and generally tied to exports. Eximbank loans constitute only a part of the U.S. total, but the table serves to illustrate that U.S. Government loans to L.D.C.'s are in general as low or lower than those of other countries. Moreover, the United States accounts for over half of the total. This is particularly significant when compared to the fact that the United States accounted for only 16–17 percent of total world trade during this period.

TABLE 7.—OFFICIAL BILATERAL LOANS TO LESS-DEVELOPED COUNTRIES [1]

	1964	1965	1966	1967	1968
Loans, Total (millions of dollars)	2,274.6	2,806.3	2,084.9	3,487.3	3,929.6
U.S. percent of total	49.1	52.0	53.2	51.8	52.6
Weighted average interest rates:					
United States	2.5	3.3	3.0	3.6	3.6
Others	3.1	3.6	3.1	3.8	3.6

[1] On loans with maturities over 1 year. Includes all official loans repayable in hard currencies. Does not include "soft" currency loans of AID or multilateral loans through the World Bank Group of U.N. Source: OECD, The Flow of Financial Resources to Less-Developed Countries.

While Eximbank officials concede the competitive advantage of U.S. long-term credits, they have argued in recent congressional hearings for the need of a short-term discount loan program to offset a competitive disadvantage in short-term credits. The basis for this competitve disadvantage is alleged to arise from the foreign practice of extensive discounting of short-term export paper. There is some disagreement, however, on the extent to which foreign governments currently use the short-term discount facility. As pointed out by Federal Reserve Board Governor Robertson in a statement before House hearings:

> In France and Belgium preferential rediscount rates for export paper have been in effect until recently, but they are now wholly or largely eliminated. They have not been used by central banks in other major Western European countries for many years. The central bank of the Netherlands does rediscount export paper of longer maturity through other types of paper, but such rediscounts are practically nonexistent * * * The Bank of England does favor export credit in several ways, not involving discounting.[14]

Explicit mention should also be made of Germany and Japan, both of which discount only long-term export paper. This is the principal means by which both countries support long-term export credits.

[13] Ibid.
[14] J. L. Robertson, Statement before House Committee on Banking and Currency, Subcommittee on International Trade (May 1971) p. 194–95.

Moreover, in a recent study prepared for the British National Export Council, it is pointed out that:

> A new international situation may arise if American plans for further great expansion of export credit facilities are fully realized * * *. Up to this point, I would regard the American changes as "catching up" with competition * * *. But if the new legislation is passed the scene would be transformed in a year or two.
>
> The question how far the U.S. will go is already causing anxious discussion among expert observers. It is usually admitted that American credit terms do not yet outweigh the comparatively high level of American prices for capital goods and plant. But the efforts to improve them further come at a time when other industrial countries are trying to restrain the softening of export credit terms—Japan, Britain, France among others.[15]

In view of these remarks, it is important for U.S. policymakers to recognize the danger of expanding Eximbank activities out of line with the rest of the world. Any significant increase in the Eximbank program would be interpreted as having an adverse effect on other country's exports and would induce retaliation. As pointed out earlier, the consequence of a general expansion of official export credit subsidies is higher cost to the lending countries, with little or no corresponding increase in benefits. If other countries are currently seeking to tighten their export credit programs, the United States should not seek a further expansion.

It may be argued that the United States requires a credit advantage in order to offset a price disadvantage in world markets. In effect, the overall discounted cost of U.S. exports would be reduced relative to that abroad. This practice implies an increase in the opportunity cost of Eximbank loans, so it is important to consider the extent to which exports might be affected.

Suppose, for example, that Eximbank rates are as much as 2 percent below foreign rates for the same debt obligations, and that the entire difference is passed on to buyers in the form of a lower overall final cost. For short-term transactions, involving an average maturity of about 4 months, a 2-percent differential would reduce the final cost of the product by less than two-thirds of 1 percent. The cost reduction on long-term transactions could be more sizable. Since Eximbank direct loans have averaged about 7 years' maturity,[16] a 2-percent cost reduction over 7 years, discounted back to the present (using a 9-percent discount rate) yields a reduction in the final cost of exports on the order of 5 percent. A rough estimate of the effect that these implied price reductions may have on exports can be provided by using recent estimates of price elasticities for American exports.[17] The average price elasticity for U.S. exports is estimated at about 1.5 (i.e., 1-percent reduction in price will increase export demand by 1.5 percent), although there is significant variation in the estimate for different commodities and for different importing countries.

Combining the cost reduction estimates with the average price elasticity estimates, the implication is that a $1 billion increase in the short-term loan program would increase exports by 1 percent of the total, or $10 million, while a $1 billion increase in the long-term loan program would increase exports by 7.5 percent of the total, or $75 million. These estimates are small in relation to total U.S. exports

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[15] Richard Fry, "Finance for Exports," British National Export Council (1971).
[16] "Annual Report of the Export-Import Bank of the United States."
[17] H. S. Houthakker and S. P. Magee, "Income and Price Elasticities in World Trade," Review of Economics and Statistics (May 1969).

($45 billion), but are nevertheless optimistic. For one thing, a 2-percent differential between United States and foreign official credit terms is extremely large. In addition, the analysis assumes that U.S. exporters will accommodate a billion-dollar increase in demand at no increase in prices (i.e., there exists a perfectly elastic supply curve for exports). The analysis does suggest, however, that significant increases in exports could be achieved through the long-term loan program if the loans are concentrated on exports for which the price elasticities are significantly larger than 1.5. In general, these would be products in which the United States faces considerable foreign competition.

Eximbank Activity and U.S. Exports

The discussion in the preceding section suggests that incremental changes in Eximbank lending activity may not have an important influence on the pattern of U.S. exports. Private export financing does not appear to be a serious constraint on the demand for U.S. exports relative to foreign exports, and the Eximbank has already offset any competitive disadvantage resulting from foreign subsidized credits. The implication is that Eximbank credits are not an effective way to promote U.S. exports.

The effectiveness of Eximbank credits is under any circumstances limited by the relative importance of other economic factors that determine a country's export performance. The cost of credit is only one part of the total cost, and is based on the selling price of the product. The price of the export, on the other hand, is determined by a complex combination of several supply and demand factors. On the supply side, there are two major considerations important to a country's relative advantage in world markets. First, relative cost of production is determined by the productivity of labor and capital used in the production process. The more productive these inputs, the greater the amount of output achieved per unit of inputs and, therefore, the lower the average cost of production. American labor may be twice as expensive as foreign labor, but if American labor is more than twice as productive, the average cost of the final product will will be lower in the United States despite the higher wage bill. In other words, the United States will tend to have a competitive advantage in world markets in those goods which are produced most efficiently in the United States. Previous research has confirmed this proposition.[18] The volume of U.S. exports relative to foreign competition is consistently higher for commodities in which the United States has a productive advantage, and lower for commodities in which the United States has a productive disadvantage.

A second major factor in determining a cost advantage in international trade involves the relative abundance of labor, capital, and natural resources in different countries. Certain commodities require an intensive use of one or more of these inputs to production. Countries with a relative abundance of the required inputs will tend to possess a comparative cost advantage in the production of those commodities. Previous investigations of the composition of U.S. exports and imports

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[18] See, for example, G. D. A. MacDougall, "British and American Exports: A Study Suggested by the Theory of Comparative Costs," Economic Journal, vol. LXI, No. 244 (December 1951); R. M. Stern, "British and American Productivity and Comparative Costs in International Trade," Oxford Economic Papers, N.S., vol. 14 (October 1962); and, B. Balassa, "An Empirical Demonstration of Classical Comparative Cost Theory," Review of Economics and Statistics, vol. 45 (August 1963).

reveal that there is a tendency to export commodities requiring inputs that are abundant in the United States and import commodities requiring inputs that are relatively scarce in the United States.[19] A related element is the amount of research and development engaged in by different countries, and the consequent rate of technological progress. The United States is a world leader in the development of certain new products and in improving the means of producing old products. As a result, the United States often has a comparative advantage in the sale of these products in world markets. [20]

The factors just described are important elements in relative production costs. They play a major role in establishing a country's basic competitive position in world trade. Characteristics of demand for traded commodities, on the other hand, are of primary importance in producing changes in the direction of trade over time. Different commodities respond in varying degrees to given changes in income and prices. This response is referred to as "elasticity" of demand. An increase in income will produce a stronger increase in quantity demanded for commodities with high income elasticities than for other commodities with low income elasticities. Thus, a country with a higher income elasticity of demand for its imports than for its exports will, for a given change in income at home and abroad, experience a greater increase in demand for imports than for exports, and thus a deterioration of its trade balance. According to recent estimates for the United States, the income elasticity for imports is higher than that for exports.[21] Consequently, the U.S. trade balance tends to worsen over time as world income grows.

Price elasticity estimates for U.S. exports and imports are relatively small, however, implying that overall exports and imports respond little to changes in prices.[22] Furthermore, income changes appear to be of greater importance to U.S. trade than price changes.[23] Thus, the use of exceptionally low credit terms to achieve lower overall export prices may be offset by the effect of income changes.

The importance of export credit must, therefore, be gaged in relation to a number of other factors that operate on the trade balance. These other factors establish a limit on the ability of Eximbank credits to expand exports, and may overwhelm and offset the effect of Eximbank support of U.S. exports. In addition, to the extent that Eximbank credits merely substitute for private financing, the importance of these credits on exports is reduced even further.

Using recent historical evidence, we may test explicitly the effectiveness of Eximbank activity in promoting U.S. exports. First, if Eximbank activity has had a significant influence on exports, then a relationship between changes in exports and Eximbank authorizations to different countries should exist. Yet, on the basis of a sample of 33 trading areas for 1968 through 1970, it was concluded that there is no significant relationship between changes in Eximbank authorizations and changes in U.S. exports to different countries. (See regressions (1) through (4) in the appendix.) The only instances

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[19] J. Vanek, "The Natural Resources Content of Foreign Trade, 1870–1955, and the Relative Abundance of Natural Resources in the United States," Review of Economics and Statistics, vol. 41 (May 1959); see also, I. B. Kravis, "Availability and Other Influences on the Commodity Composition of Trade," Journal of Political Economy, vol. 64 (April 1956).

[20] See D. Keesing, "The Impact of Research and Development on U.S. Trade," Journal of Political Economy, vol. 75 (February 1969).

[21] H. S. Houthakker and S. P. Magee, op. cit.

[22] Ibid.

[23] Ibid. See also, F. M. Adler, "The Relationship Between Increase and Price Elasticities of Demand for U.S. Exports," Review of Economics and Statistics, vol. LII (August 1970).

where a consistent relationship did appear, increases in authorizations were associated with reductions in exports, and vice versa. However, since there is no logical reason to argue that Eximbank activity would reduce exports, a proper conclusion is that there is no relationship between the two.

In a second test of the relationship between authorizations and exports, it is supposed that Eximbank authorizations are linked more with the expansion of U.S. exports by type of commodity than by country of destination. A sample of 12 commodity classes of U.S. exports for 1966 through 1969 was obtained, accounting for approximately 15 percent of total U.S. exports during these years. Eximbank loan authorizations were broken down into the same 12 categories, accounting for 53.4 percent to 68.6 percent of total Eximbank credits for the 1966–69 period. On the basis of this sample, it was concluded again that there is no significant relationship between changes in authorizations and changes in U.S. exports. (See regressions (5) through (7) in the appendix.)

Since Eximbank loans do not appear to affect the pattern of exports, it may be possible that changes in the pattern of exports influence the distribution of Eximbank loans. It may be that Eximbank activity is compensatory in the sense that loans would be shifted away from countries or commodities where U.S. exports are rising and toward countries or commodities where U.S. exports are falling. The data on loans and exports by country do not support this hypothesis. (See regression (8) in the appendix.) On the other hand, the data on loans and exports by type of commodity does support the hypothesis that the Eximbank may be attempting to improve the U.S. trade balance by concentrating on decling export commodities. (See regressions (9) and (10) in the appendix.) The previous results suggest, however, that the Eximbank has achieved no apparent success in spite of these efforts. It is likely that the economic forces of supply and demand described earlier are operating against the efforts of the Eximbank, and are more important in the outcome than low-cost credit terms.

Conclusions

The analysis of Eximbank lending activities presented in this paper suggests that an expansion of Eximbank credits will produce only a minimal influence on U.S. exports. The expansion may well be detrimental if it sets off another round in the escalation of official export credit programs. In view of the opportunity cost of directing private capital to the Eximbank, the Eximbank should seek to achieve its objective of promoting exports by concentrating on guarantees and insurance. This will help to reduce the risk burden or private capital, yet is least competitive with the private sector, requires a smaller budget outlay, and, therefore, on both counts produces a smaller diversion of private capital resources.

The United States is currently using a combination of three major programs to improve its trade balance: flexible dollar exchange rate, export promotion, and import control. While it is generally conceded that export promotion is preferable on economic grounds to import controls, concessional financing is but one incentive to exports, and is not necessarily the most efficient. However, the need for, and advisability of, either export incentives or import controls is directly dependent upon the willingness in the future to float the dollar.

Appendix. Relationship Between Eximbank Authorizations and U.S. Exports

The hypothesis that Eximbank authorizations have a significant influence on U.S. exports may be expressed formally as:

$$X = \alpha + \beta E + v$$

where X is the annual change in exports, E is the annual change in Eximbank authorizations, and v is an error term accounting for all other factors that may influence exports. The approach is to estimate the coefficients α and β using simple regression techniques and test whether they imply that Eximbank authorizations play a significant role in altering the pattern of U.S. exports. We should expect the sign of β to be positive, implying that increases (or decreases) in Eximbank authorizations produce increases (or decreases) in exports.

In the first test, exports and authorizations for the years 1968–70 were examined for 28 individual countries and five country groupings. Individual countries were considered in the sample if their receipt of Eximbank authorization exceeded $30 million in any one of the years 1968–70; otherwise, countries in each of five geographical areas were grouped together.[24] Changes in exports and Eximbank authorizations were then obtained for the periods from 1968 to 1969, and from 1969 to 1970.[25] Eximbank authorizations were considered on two levels—direct loans only, and the sum of direct loans, guarantees, and insurance—in order to determine the differential effect of guarantees and insurance. The following regression results were obtained from the data, where numbers in parentheses refer to t-statistics to be evaluated at 32 degrees of freedom.[26]

(1) $$X_{68-69} = 60.5 - 1.25 \underset{(-4.21)}{} EL_{68-69}$$
$$R^2 = 0.364$$

(2) $$X_{68-69} = 68.7 - 1.21 \underset{(-4.13)}{} ETA_{68-69}$$
$$R^2 = 0.355$$

(3) $$X_{69-70} = 133.6 + 0.536 \underset{(0.66)}{} EL_{69-70}$$
$$R^2 = 0.014$$

(4) $$X_{69-70} = 143.8 + 0.68 \underset{(0.97)}{} ETA_{69-70}$$
$$R^2 = 0.029$$

Equations (1) and (2) relate export variations for 1968–69 to changes in Eximbank direct loans (EL) and changes in Eximbank total authorizations (ETA), respectively, while equations (3) and (4) do the same for 1969–70 changes. Note first that equations (1) and (2) have the wrong sign for the coefficient of the Eximbank variable. A negative coefficient implies that increases in Eximbank authorizations lead to decreases in U.S. exports, while reductions in Eximbank authorizations lead to increases in exports. This is contrary to what should be expected, but there is no logical reason to believe that Eximbank activity should produce an adverse effect on exports. We are forced to conclude, therefore, that equations (1) and (2) imply no significant relationship between exports and Eximbank activity.

In equations (3) and (4) the sign of the coefficients are appropriate, but the t-statistics are so low as to conclude that the true relationship is not significantly different from zero. This implies again that there is no significant relationship between Eximbank authorizations and U.S. exports.

In a second test of the relationship between authorizations and exports, it is supposed that the Eximbank is concerned more with the expansion of U.S. exports

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[24] Twenty-eight individual countries are represented in the sample, including Ivory Coast, Argentina, Brazil, Chile, Columbia, Guatemala, Mexico, Panama, Peru, Venezuela, France, Germany, Italy, Netherlands, Spain, Switzerland, United Kingdom, Republic of China, Iran, Israel, Japan, Lebanon, India, Philippines, New Guinea, and Australia. The country grouping include other African, other I atin America, other Europe, other Asia, and other Oceania. The source of the Eximbank data is the Annual Report of the Export-Import Bank of the United States; while the source of the export data is IMF, Directions of Trade.

[25] The export data refer to calendar years while the Eximbank data refer to fiscal years. It is appropriate to relate calendar year exports to fiscal year authorization, since the actual exports financed will lag the authorizations. The lag was varied from 3 months to 18 months in the regressions, as a check, but the 6 months lag was considered most appropriate.

[26] For the number of degrees of freedom in this paper, a t-statistic greater than two implies that the true coefficient is different from zero with a probability of .95 or greater of being correct.

by commodity, rather than by country of destination. Twelve commodity classes of U.S. exports for 1966 through 1969 were obtained.[27] Altogether, these commodities accounted for 12.7 percent, 15 percent, 16 percent, and 14.0 percent of total U.S. exports for years 1966–69, respectively. Eximbank direct loan credits were broken down into the same 12 categories, accounting for 53.4 percent to 68.6 percent of total Eximbank credits during the 1966–69 period.[28] The following regressions were obtained from the data. The *t*-statistics in parentheses are to be evaluated at 11 degrees of freedom.

(5) $$X_{66-67}=92.0+0.373 \underset{(11.94)}{} EL_{66-67}$$

$$R^2=0.935$$

(6) $$X_{67-68}=1.84-1.38 \underset{(-10.38)}{} EL_{67-68}$$

$$R^2=0.061$$

(7) $$X_{68-69}=3.14-0.141 \underset{(-0.67)}{} EL_{68-69}$$

$$R^2=0.061$$

Equation (5) shows a highly significant positive relationship between Eximbank credits and commodity exports, implying that the Eximbank played a significant role in export performance by commodity class in 1967. Equation (6) suggests the opposite conclusion. The t-statistic is large, but the negative sign of the coefficient for Eximbank loans implies that these loans adversely affected exports in 1968. Equation (7) implies no significant relationship between Eximbank loans and exports for 1969. The results for 1966–67 would have to hold for the other two periods before we could conclude that Eximbank credits significantly affected U.S. exports by commodity class. In view of the diverse results, it would appear that the activities of the Eximbank do not significantly and consistently affect exports.

Consider next whether changes in the pattern of exports affect the distribution of Eximbank loans. The hypothesis is that Eximbank activity may be compensatory in the sense that loans would be shifted away from countries or commodities where exports are rising and toward countries or commodities where exports are declining. To test this hypothesis, we first consider changes in exports by country for the period 1968–69 for comparison with changes in Eximbank loans by country for the period 1969–70.[29] The following regression resulted.

(8) $$EL_{69-70}=14.2+0.014 \underset{(0.38)}{} X_{68-69}$$

$$R^2=0.005$$

Equation (8) implies that Eximbank activity is not compensatory by country. The relationship is not significant and the coefficient of the export variable should be negative (i.e., a decline (or increase) in exports should be associated with an increase (or decrease) in Eximbank loans).

The same hypothesis is tested again using changes in exports and loans by commodity class. In this case, two periods were considered, where exports for 1966–67 and 1967–68 were compared to loans for 1967–68 and 1968–69, respectively. The results are as follows:

(9) $$EL_{67-68}=10.2-1.245 \underset{(-8.31)}{} X_{66-67}$$

$$R^2=0.874$$

(10) $$EL_{68-69}=2.94-0.465 \underset{(-5.20)}{} X_{67-68}$$

$$R^2=0.729$$

This time the coefficients were significant and possessed the proper sign. The implication is that the Eximbank shifts its loans from commodities showing growth in world markets to commodities that are declining.

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[27] The 12 classes include cotton, power generating equipment, agricultural equipment, metal working equipment; textile machinery, paper industry machinery, printing machinery, construction and mining equipment, tire manufacturing, and aircraft. Source: U.S. Bureau of the Census, *Export Statistics*, schedules FT 410.

[28] Source: *Annual Report of the Export-Import Bank of the United States*.

[29] Note that this is not simply an inverse of one of the previous regressions because of the difference in the time-lag relationship.

TAX PREFERENCES TO FOREIGN INVESTMENT

By PEGGY B. MUSGRAVE [1]

SUMMARY AND CONCLUSIONS

Major tax concessions are provided U.S. investment abroad in the form of the foreign tax credit, tax deferral and various tax preferences given to Western Hemisphere trade corporations, less-developed country corporations and investment in the U.S. possessions. In all, the magnitude of the problem posed by the tax treatment of foreign investment is such as to make it a major issue of tax policy. It is estimated that total before-tax profits on U.S. direct investment abroad were about $17.5 billion in 1970 or about 20 percent of total corporate profits. U.S. taxes paid thereon were only 5 percent or $900 million. U.S. direct investments abroad are currently valued at $80 billion and produce at least $150 billion of output.

This investment is heavily concentrated in the largest U.S. corporations and more so than is domestic investment. Over 80 percent of taxable foreign-source income in 1966 accrued to a quite limited number of U.S. corporations with assets in excess of $250 million. Foreign investment is largely concentrated in manufacturing in Canada and Western Europe and in petroleum in Canada and the Middle East.

Taxes paid abroad are credited against U.S. corporation tax upon repatriation of profits. Such credits claimed in 1970 amounted to about $4.0 billion. The case for crediting is that it secures tax neutrality (provided the tax is not shifted) with respect to the choice between domestic and foreign investment. Indeed, our crediting provision overshoots the mark because the foreign tax credit applies to local as well as central taxes, whereas State business income taxes in the U.S. may only be deducted.

As a matter of tax equity, the credit may be defended by arguing that horizontal equity calls for equal total tax burdens including foreign as well as domestic taxes. But horizontal equity may also be interpreted to call for equal treatment in terms of U.S. taxes, with foreign taxes being treated as a cost of doing business and only a deduction permitted under the U.S. tax.

However this may be, neutrality in international capital flows and equity are not the only considerations. From the point of view of national productivity it may be argued that foreign profits taxes should be deducted rather than credited. By putting the foreign investment decision to this more demanding test, foreign investment would be limited so that returns net of foreign taxes would not fall below gross returns obtainable on investment made in the U.S. It may be argued that from the point of view of U.S. self-interest, this is the proper solution.

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[1] The author is associate professor of economics at Northeastern University, Boston, Mass.

Turning now to tax deferral, this provision permits the profits of foreign incorporated subsidiaries of U.S. corporations to enjoy a deferment of U.S. tax until remitted as dividends. Since most earnings retained abroad are reinvested in fixed assets this virtually amounts to a permanent exemption from U.S. tax. It is estimated that in 1970 such subsidiaries paid $0.9 billion less in foreign profits taxes than they would have paid under U.S. rates. Deferral clearly introduces a nonneutral incentive to invest abroad and is difficult to defend on both equity and efficiency grounds.

The effects on U.S. revenue of the deferral and credit provisions interact and are not easily summarized. If both provisions were to be eliminated—i.e., foreign taxes were made deductible only and U.S. taxes were applied when foreign income was earned—the U.S. revenue gain is estimated at $3.3 billion. This figure may be on the high side if allowance is made for the effects of such changes in raising the payout rate, thereby increasing foreign withholding taxes. If only deferral was to be terminated (while the credit was continued) the revenue gains may be estimated anywhere between $160 and $900 million, the precise amount again depending on payout behavior.

Western Hemisphere trade corporations are provided a 14-percentage point reduction in their U.S. tax liability, representing a tax preference worth some $115 million. Less-developed country corporations were permitted to retain a variety of dubious tax preferences which were eliminated for other corporations in the 1962 Revenue Act, preferences which account for another $50 million or so.

While it is believed that U.S. investment abroad has on the whole been economically beneficial to foreign host countries, its benefits to the U.S. economy are less obvious. The accumulated capital outflows of the last 20 years have generated a return flow of income which now (at $6 billion in 1970) exceeds the continuing capital outflow (at $4.4 billion in 1970). Yet, measured as a rate of return on the $80 billion stock of capital in place abroad, such income flows compare unfavorably with earnings on domestic capital in the U.S. While such income inflows have come over time to provide a helpful credit in the balance of payments the underlying trade effects are less obvious and more controversial.

It is possible that production by U.S. affiliates abroad, particularly in manufacturing, may serve to displace U.S. exports and even domestic sales in the United States. This displacement effect is the more likely since those corporations accounting for the bulk of manufacturing investment abroad are also major exporters. Moreover, sales of manufacturing subsidiaries abroad are now two to three times the level of U.S. exports of manufactured products. It should be recognized that the economic and political effects of maintaining a share of foreign markets via foreign production are very different from doing so via domestic production and export. The principal difference lies in the effects on labor productivity and shares in national income. Foreign investment may enhance the private profitability of U.S. capital but it is likely to reduce the real wage to U.S. labor as well as the Government's tax share in the profits.

There are sufficient doubts about the effects of foreign investment on the U.S. economy to lead to the conclusion that the U.S. tax treatment of foreign investment income should be reviewed and reevaluated. This applies especially to deferral, but consideration may

also be given to limiting the present credit for foreign taxes to less than 100 percent. Such measures would not be incompatible with opposition to trade restriction. Indeed, they might be supportive of free trade policy.

I. Introduction

Since the term "subsidy" has a somewhat pejorative flavor, it is not surprising that there should be differences of opinion as to what constitutes a subsidy. Recipients of preferential treatment of one kind or another do not readily accept the notion that they are "subsidized." This is nowhere truer than in the realm of foreign investment. Yet, even among professional economists the word "subsidy" is not without its ambiguities. Hence, this paper begins with a brief discussion of subsidies in general and tax-subsidies or preferences in particular before taking up the main topic of tax preferences to foreign investment.

Subsidies in General

The term "subsidy" connotes some form of preferential treatment given to selected groups of individuals, and in its ultimate sense a fiscal subsidy might be defined as any net benefit which accrues to any individual as a result of the taxing and spending activities of Government. Focus is thereby placed on the overall distributional effects of the Government budget. But this approach, while of academic interest, is of little help in matters of practical policy. It requires a knowledge of the ultimate incidence on each individual of the entire spectrum of Government taxes and expenditures. Moreover, for policy purposes, single expenditure components of the whole budget, or particular taxes which in isolation are seen to bestow benefits on particular groups of individuals, must be examined. Furthermore, some categories of payments and tax preferences by Government have as their primary purpose, not the redistribution of income but the reallocation of resources, or an adjustment in the level of spending in the economy. Indeed, some subsidies may arise as a result of historical accident, legislative oversight, or pressure from special interest groups, a not uncommon occurrence in the tax preference field. Thus, a subsidy cannot readily be defined in terms of policy intent or even in terms of economic effect.

It seems of greater practical usefulness to define as a subsidy any Government payment (in cash or kind) which confers its benefits in a selective way, based on particular sources or uses of income. Ordinary purchases of goods and services by Government in the market at market prices are excluded. Purchases at higher than market prices would be included to the extent of the price differential. Cost-reducing payments or services to producers and/or consumers of particular products likewise come under the rubric of subsidy. To be sure, in the latter case, such subsidies may be considered as quid pro quo payments by Government for the external social benefits involved in the particular activity which is subsidized. A subsidy to education is of this form. However, a subsidy to cover positive externalities differs from the payment for a good or service from the market in that the former is a by product of a private activity rather than the end product itself and involves a payment to a particular

class of consumers or producers, which is not part of their market calculations. Transfer payments in cash or kind, which are based solely on the level of income, may also be excluded from our definition. Similarly differentiation of tax rates by income levels is not to be considered as subsidies except insofar as this differentiation arises indirectly from variations in tax treatment by income source or use.

In an ideal world in which Government were to carry out its varied functions at maximum efficiency, subsidies would be used for only limited purposes. One purpose, as described above, would be to encourage those activities which produce social externalities—benefits which accrue to those beyond the particular consumer or producer who is to be subsidized. Such subsidies, however, carry distinct distributional implications, and these have to be considered when there are alternative ways of reaching the same objective. A subsidy to producers for use of antipollution techniques may be effective in securing a cleaner environment, but the same may be achieved through regulation, and the distribution of costs in each case will be very different. Another use for a subsidy would be to encourage the use or consumption of those goods which society considers to have especially meritorious qualities: Low-cost housing, hot school lunches, and so forth. In a free society, people cannot be made to consume such merit goods by regulation, although regulations can be used to prohibit consumption of what are deemed harmful products (drugs, etc.). Thus, a subsidy is used to lower the cost to consumers of the desired goods.

Subsidies conferred on particular groups to promote other general policy objectives would be more questionable, since other tools are at hand which do not disturb the distribution of income. Thus, subsidized interest rates or tax preferences to investment may be used to promote economic growth, but Government savings through a general increase in the level of taxation could achieve the same with the advantage of distributional neutrality. Subsidies to exports may be used to improve the balance of payments, but so may a general exchange rate devaluation or a set of controls on capital outflow. Thus, the efficiency of Government can be promoted by identifying those subsidies (explicit and concealed) which exist, quantifying them and exploring their implications for equity and other policy objectives. Some subsidies may serve a worthy objective; others may be more questionable in this regard. But almost all carry costs in terms of undesirable side effects or loss of equity in the distribution of Government benefits and costs. It is thus important to identify these costs so that proper evaluation can be made and alternative ways of achieving the same objectives may be compared.

Tax Preferences as Subsidies

Any provision which reduces the tax burden on particular sources or uses of income is equivalent to a tax refund and therefore to a cash subsidy. The Federal Income Tax Code is replete with such tax preferences, and in the domestic setting they are not difficult to identify. In public finance parlance, they are termed "departures from horizontal equity." In other words, such tax preferences result in an unequal tax treatment of persons with equal income. Furthermore, depending on the distribution of such favored income by income levels, vertical equity in the sense of an equitable tax treatment of individ-

uals at different income levels may also be adversely affected. Tax burdens vary depending on sources of income (e.g., capital gains, social security benefits, etc.) or on uses of income (housing, charitable contributions, etc.). Most of such preferences arise from the exclusion or deduction of favored categories of income from the tax base. A global, comprehensive concept of income must be established as the standard, with any departures therefrom considered as a tax preference. The well-known "accretion" principle serves as a guide in this task, and in principle the concept is clear. In practice, there are certain difficulties of implementation—the inclusion of unrealized capital gains on a current basis, for instance. When foreign-source income is involved, there are additional problems of both a conceptual and practical nature.

The equity implications of any tax-preference form of subsidy depends on the incidence of the tax, for the concept of equity is only meaningful as it applies to individuals who bear the ultimate burden of the tax or receive the benefit of the preference. Thus, the equity of the corporation income tax must be seen in terms of the distribution of the additional burden which the tax imposes on the ultimate recipients of corporate-source income. As a matter of analytical convenience, however, one can consider the tax in isolation, setting as an intermediate equity requirement that the same effective tax rate apply to the profits of all U.S. corporations whatever their form of business, source of profits, or other characteristics. This approach abstracts from the question of whether a tax of uniform rate applied to corporate profits is itself equitable when seen in relation to the individual income tax with which it interacts.

Tax Preferences to Foreign Investment

The purpose of this paper is to examine the existence and extent of fiscal subsidies (qua tax preferences) to foreign investment. The first task is to define and identify such tax preferences. This may be done by comparing the tax treatment given to investors who invest abroad with those who invest at home in the United States. Consider first a U.S. corporation investing and earning profits entirely within the United States and subject to the U.S. corporate income tax. Taxable income is defined as gross receipts less all costs (including capital costs) of doing business. Among these cost deductions are included State and local business income taxes, just as State and local taxes are deductible for purposes of the Federal individual income tax. Thus, with a State corporation income tax of 10 percent, each $100 of corporate profits incurs a Federal tax liability of $43.20, equal to 48 percent of $90 (profits after the State tax). So far as the Federal Government is concerned, its corporate tax is applied to profits after payment of State and local business income taxes. This is not the only solution which might be applied in such a case of multilevel taxation. The Federal Government might, for instance, disregard the State tax and apply its own corporate income tax to profits before payment of State income taxes. In that case the Federal tax liability would be $48. Indeed, on equity grounds there is much to be said for the latter course, especially to the extent that lower level business income taxes serve the role of quid pro quo tax payments for benefits received. Yet

another approach is based on the view that State business income taxes are not to be regarded as costs of doing business which raise the product price thus calling for their deductibility from gross receipts. Rather, they serve to reduce profits and should be allowed for in determining the Federal tax liability. Taking this approach, State income taxes would be treated as credits against the Federal tax on grossed-up profits. This being the case, the Federal tax would be $38 in the above example (=$48−$10). Of the three examples given, in the second case the Federal Government omits the taxes of lower level jurisdictions from its calculations, in the third (credit) case it gives full recognition to them while in the first (deduction) case a form of compromise is applied.

Let us turn now to a U.S. corporation which earns its profits through a branch operating in a foreign country to which it pays a corporation profits tax. Let us suppose $100 of profits are earned abroad on which a 30-percent foreign profits tax is paid. The question now arises, how are the $30 of foreign taxes to be treated for purposes of the U.S. tax? How are we to define "equal treatment" in this case? The answer is not clearcut and will depend on what equity norm is chosen. The range of alternatives are analogous to those discussed with respect to the treatment of State and local taxes. If a national concept of equity is applied to foreign investment then a case could be made for treating foreign taxes as are domestic state and local taxes—namely as deductions from taxable income. On the other hand, if an international concept of equity is applied, then foreign profit taxes would be considered as equivalent to the U.S. corporate tax and allowed as credits. Yet a third alternative might be to ignore the foreign tax altogether as being not relevant to the equity of a domestic tax.

The U.S. tax liability and therefore the total tax burden per $100 of gross profits will differ considerably in each case as table 1(a) shows. It is evident that only the foreign tax credit is reasonably consistent with standards of tax neutrality.[2] Since the foreign tax credit is permitted up to the level of U.S. tax as applied to the same income, this assumes that foreign profits bear the higher of the United States or foreign rate. Thus, use of the foreign tax credit eliminates much of the tax deterrent to foreign investment arising from multi: national taxation. (See table 1(b).) However, as will be explained in section VII, the deduction method has much to recommend it in terms of national interest so that the choice of credit method is not an entirely compelling one. Indeed, in the U.S. case, the credit treatment for foreign profits taxes is given only to branch income and to income from foreign incorporated subsidiaries with substantial U.S. ownership,[3] but not to dividends earned by corporations on their foreign portfolio investments. Some countries allow a credit for foreign profits taxes only for branch profits with credits on dividends limited to the foreign withholding tax (as in the portfolio case for the United States). The Carter Commission in Canada recommended that foreign profits taxes be given only a one-half credit against the Canadian tax.

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[2] Tax neutrality is met if the investor faces the same tax burden on profits whether the investment is made at home or in any foreign country.

[3] The so-called indirect credit for the foreign tax on profits underlying dividends paid to the parent corporations is available only where a minimum 10-percent ownership relationship is involved.

TABLE 1(a).—U.S. TAX ON $100 OF FOREIGN PROFITS UNDER ALTERNATIVE TREATMENT FOR FOREIGN TAX [1]

Rate of foreign tax	Treatment of foreign taxes		
	Deduction	Credit	No allowance
	U.S. tax as percent of gross profits		
60	19.2	----------	48.0
50	24.0	----------	48.0
48	25.0	----------	48.0
40	28.8	8.0	48.0
30	33.6	18.8	48.0
20	38.4	28.0	48.0
10	43.2	38.0	48.0
0	48.0	48.0	48.0

[1] U.S. corporate income tax taken at 48 percent.

TABLE 1(b).—TOTAL TAX DIFFERENTIALS BETWEEN DOMESTIC AND FOREIGN SOURCE INCOME UNDER DIFFERENT TREATMENT FOR AND RATES OF FOREIGN TAX [1]

Rate of foreign tax	Treatment of foreign taxes		
	Deduction	Credit	No allowance
	Tax differentials as percent of gross profits [2]		
60	31.2	12.0	60.0
50	26.0	2.0	50.0
48	25.0	----------	48.0
40	20.8	----------	40.0
30	15.6	----------	30.0
20	10.4	----------	20.0
10	5.2	----------	10.0
0			

[1] U.S. corporate income tax taken at 48 percent.
[2] Equals U.S. tax shown in table 1(a) plus foreign tax minus 48 percent (the tax on domestic source profits).

Thus, the definition of a tax preference to foreign investment depends first on how we define the norm, in other words on what we characterize as equal treatment for foreign and domestic investment in the presence of foreign taxes. If the deduction method is chosen as the standard, the foreign tax credit must be seen as conferring substantial tax preferences on foreign source profits. This is even more so if we should decide that equal treatment means equal U.S. treatment, regardless of the foreign tax and that column 4 in table 1(a) should be taken as the norm.

A tax preference to foreign investment is defined as the differential between the tax rate on foreign and domestic source income and whether the tax on foreign income is defined to include or exclude the foreign tax depends on which equity norm is chosen as well as other nonequity considerations. Another question arises with respect to what tax rate on domestic income should be used for the comparison. Is allowance to be made for the investment credit, or accelerated depreciation which are not available to foreign investment? Should State and local business income taxes be added to the Federal tax? Since the investment credit has not been a permanent feature of the U.S. tax scene but has been applied on a temporary basis primarily for stabilization purposes, it is not included in the calculations here. Neither are lower level taxes added since concern is with tax preferences afforded by the Federal corporation income tax and the tax treatment of foreign income at the State level differs among States.

U.S. Tax Treatment of Foreign-Source Profits

The corporation income tax applies to global income of U.S. corporations and a credit for the foreign tax directly applied to that income is allowed up to the limit of the total U.S. tax due on that income. Thus, foreign taxes on foreign profits earned by branches of U.S. corporations abroad may be credited as may foreign withholding taxes on dividends paid to U.S. corporations. In addition, an indirect credit for foreign taxes on the profits underlying the dividend is permitted where the U.S. corporation has at least a 10-percent ownership in the foreign corporation. Thus, the U.S. tax treatment of branch earnings and remitted dividends from foreign incorporated subsidiaries is broadly similar with the corporate tax applied to grossed-up profits and a credit allowed for foreign taxes. The only difference lies in the fact that certain tax preferences such as depletion available to domestic source income also apply to foreign branch earnings but not to the profits of foreign incorporated subsidiaries. Foreign losses may be set off against domestic income in the branch case but not for the foreign subsidiary. The indirect credit for foreign profits tax is not available for dividends received from portfolio investments abroad. Thus, in effect the deduction treatment is applied to the foreign tax on profits underlying dividends received from those foreign corporations in which there is a less than 10-percent interest and there is in consequence a large disparity of tax treatment between the two types of investment.[4] As suggested above the foreign tax credit may, if the "national equity" concept is accepted, be regarded as a tax preference to foreign investment and is so treated in section II.

While the amount of foreign tax which is creditable is limited to the equivalent U.S. tax which would be due on the same foreign income, the taxpayer may choose between the so-called per-country and overall limitations in determining the amount of foreign tax credit. Under the per-country limitation the foreign tax credit is estimated on a country-by-country basis and any "excess" credit arising from operations in one country may not be set off against U.S. tax due on income earned in others. The overall limitation, on the other hand, provides that foreign income from all countries be combined, and all foreign taxes paid be creditable up to the limit of U.S. tax on the combined income. In this way, excess tax credits on income earned in countries with rates in excess of the U.S. rate may be used to reduce the U.S. tax on income earned in countries with rates less than that in the United States. In other words, an averaging of foreign rates is permitted, thus increasing the amount of foreign tax which is eligible for the credit. While this method seems to be in practice preferred, substantial amounts of foreign income remain under the per-country limitation.[5] This is due to the fact that under the overall limitation, losses in one country must be deducted from net income in others. Since this reduces the overall credit limit, it may

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[4] In practice, this disparity has little significance since very little foreign investment is carried out in the corporate portfolio form—a situation which may itself be a consequence of the tax treatment.

[5] In 1964, $2,078 million of taxable income from foreign sources (branch profits and dividends from foreign corporations) was subject to the per-country limitation while $3,509 million was attributed to the overal limitation.

be advantageous to the taxpayer with losses in some countries to use the per-country limitation.[6]

While global income received by U.S. corporations is subject to tax, only U.S. source income of foreign corporations is so taxed. In consequence, the foreign profits of foreign corporations are not taxed unless, as dividends, they become part of global income of their U.S. parent corporations. As a result, the U.S. tax is deferred on profits earned by foreign corporations and accruing to U.S. parent corporations. Foreign incorporated affiliates may thus act as shelters from the U.S. tax, for reinvestment abroad makes unlimited tax deferment possible. The tax advantage exists whenever the effective rate of foreign tax falls short of the U.S. rate and increases as the differential widens. Therefore, to the extent that profits are retained abroad, deferral provides a tax preference to foreign investment in the foreign incorporated form as against both domestic investment and foreign investment in the branch form. Furthermore, there would seem to be a certain logical inconsistency between deferral and the indirect foreign tax credit. Deferral arises from the rule under which the United States does not tax the foreign income of foreign corporations (whatever the degree of U.S. ownership and control). Yet when this income is remitted as dividends, a credit against U.S. tax is given for the foreign taxes which the foreign corporation has paid. If deferral is allowed, surely the indirect tax credit should be abolished and the latter retained only if deferral is terminated. The revenue costs of deferral are considered in section III.

Other tax preferences given to certain forms of foreign investment include the Western Hemisphere Trade Corporation provisions, the provisions for less developed country corporations and the special tax treatment given to investment in the U.S. possessions. They are evaluated in section IV but quantitatively are of less importance.

Measurement of Tax Preferences

Tax preferences to foreign investment may be measured in terms of their revenue cost on the basis of recent income flows. The revenue cost is estimated as the difference between actual U.S. corporate income tax collection on foreign investment income and what it would be under an alternative and more equitable system. While these measures are useful, it should be noted that breaches in tax equity need not necessarily be ranked in terms of their revenue cost. A tax preference which costs relatively little in revenue but which is bestowed on very few taxpayers may be as objectionable as one of greater cost but the benefits of which are more widely distributed.

The cost of the foreign tax credit is measured as the difference between current tax collected on foreign investment and what it

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[6] Consider a U.S. corporation with 1,000 units of income earned in country A and 1,000 units of income in country B. Country A's tax rate is 60 percent and country B's is 30 percent, while the U.S. rate is 48 percent. The U.S. tax liability before foreign tax credit is 960 (=48 percent of 2,000). Under the per-country limitation the maximum amount of foreign tax which can be currently credited is 780 (=480 in country A plus 300 in country B). Thus the U.S. tax due will be 180 (=960 −780) and the excess credit is 120 (=900 −780). Under the overall limitation, however, the credit limitation will be 960 (=48 percent of 2,000) and thus the entire 900 of foreign tax is creditable. Therefore, the net U.S. tax due will be 60 (=960 −900) and there will be no excess credit. The overall limitation is in this case preferred.

But now suppose the U.S. corporation has branch operations in country C with 1,000 units of losses. Since these losses may be set off against domestic income, the U.S. tax liability on the foreign income before credit is now 480 (=48 percent of 1,000). Under the per-country limitation the foreign tax credit is again 780, thus yielding an excess credit of 300 (=780 −480). Using the overall limitation, however, the maximum credit allowable is 480 (=48 percent of 1,000), leaving no excess credit. Therefore, in this case the per-country limitation would be more advantageous.

would be under a deduction treatment of foreign taxes. The cost of deferral is estimated as the additional revenue which would be collected were profits of foreign incorporated subsidiaries taxed on an accrual basis. The cost of the foreign tax credit is estimated both with and without deferral and similarly the cost of deferral is estimated under both the credit and deduction methods. While this is the most straightforward approach to measuring the order of magnitude of tax preferences, it does not allow for responses to the alternative tax provisions. Thus abolition of deferral might result in larger dividend remittances and in turn larger revenue gains than those estimated on the basis of unchanged dividend behavior. On the other hand, a less favorable tax treatment to foreign investment income could result in reduced capital outflow and ultimately in reduced income flows which would reduce the revenue gain correspondingly. It should also be borne in mind that the revenue cost, while a reasonable measure of the gain to U.S. investors abroad, does not allow for economic gains or losses to the U.S. economy or to foreign economies. Thus the effects on the U.S. economy of the investment outflow induced by the present tax treatment should also be considered in their ultimate equity implications. The revenue cost represents a redistribution from all taxpayers to U.S. investors abroad in particular. The effects on income levels and factor shares of the foreign investment itself may serve to enhance or mitigate this tax burden redistribution, a matter considered in section VII.

The revenue cost estimates are largely based on material provided in the Internal Revenue Service's Supplemental Reports to the Statistics of Income on Foreign Income and Taxes Reported on Corporation Income Tax Returns. The last published issues were for the 1961–62 period although a later issue including material up to 1966 is in preparation and was made available to the author. While this material is of considerable value in providing statistics on the volume and characteristics of U.S. investment abroad as well as its tax treatment, there is room for improvement in terms of the timelag before publication (the last published material is 10 years old) and the coverage of the material itself. While the Statistics of Income give flows and taxes paid, statistics on capital flows and asset values abroad must be obtained from the Department of Commerce series on Direct Investment Abroad. While the former are derived from tax returns, the latter are derived from questionnaires submitted on a regular basis to a sample of U.S. corporations with foreign investments. Again, the material is not as comprehensive as students of foreign investment would like, and it is difficult to reconcile the two sets of statistics where they overlap. Since the book value of U.S. private investments abroad is now estimated as of the order of $120 billion, it would seem desirable to have a full and detailed reporting on a current published basis.[7]

II. The Foreign Tax Credit

Description and Legislative History

Prior to the adoption by the United States of the foreign tax credit in 1918, foreign taxes were treated as deductible expenses for purposes of the corporation and individual income taxes. The credit was introduced in response to the high wartime tax rates in the United

[7] See app. D for suggested improvements in published material.

States and abroad at that time.[8] Under the crediting provisions [9] foreign income is grossed up by the amount of foreign income tax paid, the U.S. tax applied, and the foreign tax credited against the U.S. tax bill. No refunds are given, and the credit is thus permitted only up to the limit of the U.S. tax due on the foreign income. However, under the so-called overall limitation, a firm may pool its foreign income earned in different countries and "excess credits" earned in the high foreign tax jurisdictions thereby be credited against the U.S. tax due on income from the low-tax countries.[10] Any excess credit, furthermore, may be carried forward for 5 years and back for 2 years. The credit is limited to foreign income taxes but includes taxes paid to potitical subdivisions of the foreign country such as States and cities. The foreign income base is defined in terms of U.S. source rules and concepts of taxable income. The "direct" foreign tax credit is given for foreign taxes on profits of foreign branches of U.S. corporations and for foreign withholding taxes on dividends paid out by foreign corporations whether in a subsidiary relationship to the U.S. corporate shareholder or not. The "indirect" foreign tax credit in addition is permitted for foreign taxes on the profits of foreign subsidiaries (and sub-subsidiaries) underlying dividends paid to the U.S. parent. The test for eligibility for the indirect credit is that the U.S. corporation own 10 percent or more of the voting stock of the subsidiary and in turn that the subsidiary own at least 50 percent of the voting stock of the sub-subsidiary.

Revenue Cost

The revenue cost of the foreign tax credit is estimated as the additional tax revenue which would be collected on foreign investment income if foreign taxes were deductible rather than creditable. One estimate is based on the deferment of U.S. tax on the undistributed earnings of foreign incorporated affiliates and the other on the assumption that all income is sooner or later distributed and subject to U.S. tax. The derivation of the estimates is shown in appendix A. In 1966 the foreign tax credit claimed against U.S. tax liability was $2.8 billion. This falls short of the actual foreign taxes paid of nearly $3.6 billion owing to the fact that excess credits (carried over to future years) exceeded the carryovers from previous years which were included in the actual credit claimed. Had foreign taxes been treated as deductions rather than credits the full $3.6 billion would have been deducted from gross income but U.S. tax revenue from branch earnings and dividends would have increased by $1.1 billion. Assuming deferral to be terminated and thus including the undistributed profits of controlled foreign corporations in taxable income, after allowing for foreign withholding taxes thereon, adds a further $1 billion to the revenue loss giving a total of $2.1 billion for all foreign income accuring to U.S. corporations. A rough estimate of the value of the foreign tax credit (over the deduction method) for 1970 made by extrapolating the 1966 figures in proportion to the increase in foreign

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[8] See Elisabeth A. Owens, "The Foreign Tax Credit," International Program in Taxation, Harvard Law School, 1961.

[9] Primarily secs. 901–905 of the Internal Revenue Code with numerous other references. See Owens, *Ibid*, p. 4.

[10] Taxpayers have the option of choosing the "overall" or "per-country" limitation. Although in the latter case the credit is limited to the U.S. tax due on income as computed separately for each country, the "per-country" limitation may be more favorable to the taxpayer with losses in some countries.

See footnote 6, p. 184.

earnings on direct investment between those years gives an overall figure of $3.3 billion.

This figure, the reader should again be reminded, is based on the "national" concept of equity which would require the taxation of foreign income net of foreign taxes, without credit. On the other hand, if the "international" equity concept is preferred, then the present crediting system is appropriate and no preference is involved in its application.

It was noted above that availability of the overall limitation makes it possible for corporations to credit foreign taxes where the latter exceed the U.S. rate by combining them with taxes paid in relatively low-tax jurisdictions. This provision thus goes some way toward a "full credit" system under which credit is not only given for foreign taxes up to the level of the equivalent U.S. tax on the same income but a refund provided to the extent the foreign tax exceeds the U.S. tax.

Most foreign-source income is in fact subject to the overall rather than the per-country limitation and IRS data suggest that it tends to be used more by the relatively large U.S. corporations as indicated in table 2(a), where we see that the largest firms more frequently use the overall limitations.

TABLE 2(a).—NUMBER AND PERCENTAGE OF TAX RETURNS USING PER COUNTRY AND OVERALL LIMITATIONS BY SIZE OF ASSETS, 1964

Size of assets	Returns using—			
	Per country limitation		Overall limitation	
	Number	Percent	Number	Percent
Less than $100,000	313	8.6	117	7.4
$100,000 to $1,000,000	1,037	28.3	224	14.2
$1,000,000 to $10,000,000	1,317	36,0	513	32.5
$10,000 000 to $100,000,000	702	19.2	408	25.9
$100,000,000 to $250,000,000	126	3.4	132	8.4
Over $250,000,000	163	4.5	184	11.7
Total	3,658	100.0	1,578	100.0

Source: Statistics of Income, Supplemental Report, 1964, 1965, and 1966, Foreign Income and Taxes reported on Income Tax Returns, IRS, Treasury Department (forthcoming), table 10.

Whereas less than 10 percent of corporate taxpayers which utilize the per-country limitation have assets in excess of $100 million, 20 percent of those choosing the overall limitation are in this largest size class. This reflects the facts that (1) the per-country limitation may be more favorable to the firm with foreign losses (generally from the smaller and newer foreign operations) and (2) the larger firms are in a better position to take advantage of the overall limitation by spreading their income-earning activities into low tax jurisdictions.

Table 2(b) shows the foreign income and tax position for taxpayers using the two limitations. It is clear from comparing the "deemed paid" foreign taxes (foreign profits taxes on foreign incorporated subsidiary profits) with other foreign taxes paid or accrued (foreign profits taxes on branch earnings and foreign withholding taxes on remitted dividends), that those U.S. corporations using the overall limitation tend to do more of their foreign business in the foreign incorporated form than do those which use the per-country limitation. The lower effective foreign tax rate in the "overall" case suggests operations in low tax jurisdictions to permit spreading of the credit. It is very evident that those corporations using the

overall limitation are able to credit a much larger proportion of their foreign taxes. Excess credits carried over from previous years were only 8 percent of total creditable taxes for these corporations as against over 30 percent for those under the per-country limitation.

TABLE 2(b).—FOREIGN-SOURCE INCOME AND FOREIGN TAXES OF U.S. CORPORATIONS BY PER COUNTRY AND OVERALL LIMITATIONS 1964

[Dollar amounts in millions]

	Type of limitation—	
	Per country	Overall
Taxable income fromf oreign sources	$2,078	$3,509
Foreign taxes paid or accrued	969	757
Foreign taxes deemed paid	244	760
Total foreign taxes paid or accrued	1,213	1,517
Excess credit carryover	559	138
Foreign taxes paid as percent of income	58.4	43.2
Excess credit as percent of total creditable taxes	31.5	8.3

Source: As table 2(a).

The estimated revenue cost of the foreign tax credit of course reflects the added cost of the overall limitation. A rough estimate of what this may be is made in appendix B and shows the cost to be currently of the order of $230 million. This revenue cost relates only to branch profits and dividends from foreign-incorporated subsidiaries, excluding undistributed profits of the latter.

III. Tax Deferral for Foreign Income

Description

Although the U.S. income taxes in principle provide for the taxation of U.S. citizens and corporations on their income from all sources, certain provisions constitute an important departure from this principle as it applies to foreign source income. Under sections 881–883 of the Code, foreign source income earned by foreign corporations is exempt from U.S. taxation unless distributed to shareholders who are U.S. nationals (individual citizens or U.S. corporations). Thus, as this provision applies to the U.S. corporation income tax, the tax is deferred on profits earned by foreign-incorporated subsidiaries of U.S. corporations until such time as the profits are remitted to the parent corporation. The same rule applies to a U.S. corporation's accrued share in the undistributed profits of a foreign corporation in which it has only a portfolio interest and to income earned by individuals on their equity shares in foreign corporations. Just as in the domestic context the individual income tax applies only to dividends paid and not to the taxpayer's share in the undistributed profits, so in the foreign context the corporation income tax is only applied to dividends paid to the U.S. corporate investor by the foreign corporation and not to its share in the undistributed profits.[11] Tax deferral arises from the U.S. source rule which provides that the U.S. tax apply only to U.S. source income of foreign corporations.

The consequences of tax deferral are far reaching owing to the differentials between United States and foreign profits tax rates.

[11] With certain exceptions described below.

Since profits earned by a foreign-incorporated subsidiary and held or reinvested abroad are subject only to the foreign rate of tax, considerable tax advantage may be had by earning such income in relatively low tax jurisdictions. Thus, a U.S. corporation operating through a foreign-incorporated subsidiary in a country with, say, an effective tax rate of 30 percent has 70 cents out of every dollar for reinvestment purposes, whereas if the same investment had taken place in the United States only 52 cents of each dollar of profit would be so available. So long as profits are kept abroad, and the foreign tax rate is below that in the United States, there is a tax incentive given to foreign investment through the deferral provision. Furthermore, the incentive is greater, the lower is the foreign rate, thus making for differential investment incentives among foreign countries. Moreover, the deferral advantage is not available to profits earned by foreign branches of U.S. corporations since they do not come under the foreign corporation exemption.[12] This serious departure from tax equity and neutrality exists apart from the question, discussed above, as to whether taxpayer equity considerations call for a credit or deduction treatment for foreign taxes.

The first serious attempt to tax foreign income of U.S.-controlled subsidiaries abroad on an "as earned" rather than remitted basis was made by the U.S. Treasury in 1961. The proposal was vigorously resisted particularly by U.S. corporations operating through subsidiaries abroad and lawyers in the international tax field.[13] Eventually certain provisions were passed in the Revenue Act of 1962 placing some restrictions on those forms of foreign income eligible for deferral. The intent of the legislation was to place restrictions on the so-called abuse of the deferral privilege by the use of tax-haven operations abroad. It had been customary for U.S. corporations with extensive investments abroad to set up subsidiaries in countries with low tax rates or other liberal tax features. Such subsidiaries could act as sales agents or as general clearinghouses for income earned in other foreign countries, permitting very large tax advantages particularly where profits could be shifted onto the books of the tax haven subsidiaries. Thus the Act precluded so-called subpart F or "base company" income from deferral where substantial tax advantages are gained through the base-company operation.[14] The result was an extremely intricate piece of legislation with which few are satisfied.

At the same time deferral continues for any income earned in the foreign-incorporated form of business provided it does not qualify as "Subpart F" income. In effect this means that the following forms of foreign income are still eligible for deferral:

1. Income earned by a controlled foreign corporation that is engaged in the manufacture of goods or some other form of production and has no tax-saving branches outside its country of incorporation.

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[12] Nevertheless, a considerable part of U.S. investment abroad takes place in the branch form even though deferral is not available. Thus, in 1969 net earnings (after foreign taxes) of foreign branches of U.S. corporations have been estimated at $2.6 billion as against $5.4 billion net earnings of foreign incorporated affiliates. A number of factors explain the use of the branch form of business abroad. For instance, U.S. depletion allowances for natural resource industries are available only to the foreign branch form, thus explaining the widespread use of the branch form in foreign petroleum operations by U.S. corporations. Foreign branch losses may also be set off against domestic income, whereas the losses of foreign incorporated subsidiaries may not.

[13] Their testimony is presented in U.S. Congress, House of Representatives, Committee on Ways and Means, "Hearings on the President's 1961 Tax Recommendations," 4 volumes.

[14] Thus, exceptions such as the "30-percent rule," the "substantial reduction in taxes rule" and the "minimum distribution rule" permit deferral for base-company income so long as the tax advantage is not excessive.

2. Income earned by a controlled foreign sales or service corporation engaged only in selling goods or services for use in its country of incorporation.

3. Income earned by a controlled foreign sales or service corporation that neither buys from nor sells goods or services to a related person and has no tax-saving branches outside its country of incorporation.

4. All income earned by a noncontrolled foreign corporation.

A foreign corporation is considered noncontrolled under any of the circumstances described below:

1. When 50 percent or more of its voting stock is owned by persons who each own less than 10 percent of the voting stock.

2. When 50 percent or more of its voting stock is owned by persons who are not U.S. citizens or corporations.

3. When 50 percent or more of its voting stock is owned by any combination of persons who are not U.S. persons or who each own less than 10 percent of the voting stock.

The degree of tax advantage to the U.S. corporation obtainable from deferral may be measured as the difference between the effective tax rates of the foreign country where the income is earned and that in the United States. There is some question whether the revenue cost to the Treasury should allow for the crediting of foreign withholding taxes imputed to undistributed profits. Suppose, for instance, that undistributed foreign profits are 100, the foreign profits tax 20 percent, the foreign withholding tax 15 percent, and the U.S. corporation tax 50 percent. Then the tax advantage from deferral may be shown as 30 (equals the difference between the U.S. tax of 50 and the foreign tax of 20). Yet this should not be thought of entirely as a revenue cost to the U.S. Treasury. For if the income is to be distributed (as well it might if deferral were eliminated) there would be a further tax credit of 12 (equals 15 percent of profits net of foreign tax of 80) and the revenue cost would be 18.

Unfortunately, the most recent available data on the earnings of, and foreign profits taxes paid by, U.S.-controlled foreign corporations on a country-by-country basis are for 1962. There also seem to be no plans for updating the country-by-country statistics in the next Supplementary Report to the Statistics of Income. Without this information it is not possible to assess the foreign tax liabilities of U.S. investment abroad on a country-by-country basis and consequently to determine how the benefits of deferral are distributed. In 1962, the average effective rate of foreign tax on profits of U.S.-controlled subsidiaries abroad was 36 percent, and approximately the same in 1966. In table 3, countries which together accounted for nearly 90 percent of after-tax earnings on U.S. direct investment abroad in 1970 are ranked in descending order of these earnings (shown in column 1). The effective rates of tax as estimated from the tax returns for 1962 (the last year for which collations on a country basis were made) are shown in column 2. Although the situation may have changed substantially in some cases during the last 8 years, it is not believed that the general picture of rather widely dispersed rates, has altered greatly. The average rate of tax for all such subsidiaries was unchanged, at 36 percent, as late as 1966.

There are substantial tax advantages to be gained from U.S. tax deferral. It should be noted that these effective rates reflect not only the normal rate of foreign tax but also special deductions, exemptions,

and incentive provisions which may be available in these countries.[15] It should also be emphasized that the earnings figures are for 1970 and therefore reflect a situation 7 years after the subpart F provisions went into effect.

TABLE 3.—ESTIMATED EFFECTIVE FOREIGN TAX RATES, 1962 AND U.S. DIRECT INVESTMENT EARNINGS 1970, SELECTED COUNTRIES

Country and region[1]	Earnings,[2] after tax, 1970 (millions)	Effective[3 4] foreign tax rate, 1962 (percent)
	(1)	(2)
Canada	$1,622	40.5
Middle East[5]	1,176	43.3
West Germany	623	35.3
United Kingdom	592	40.9
Venezuela	557	n.a.
Venezuela	422	22.3
Australia	302	38.4
Switzerland	300	12.3
Assorted, Western Hemisphere[6]	252	20.5
France	235	42.8
Japan	218	52.0
Brazil	206	45.4
Belgium and Luxembourg	171	31.0
Netherlands	151	28.2
South Africa	141	22.0
Mexico	133	46.1
Panama	121	7.5
Argentina	108	28.7
Chile	84	22.7
Peru	82	36.2
Italy	65	45.3
Spain	52	31.0
Total	7,613	36.3
Total all countries	8,733	35.9

[1] Countries are ranked in descending order of net direct investment earnings in 1970.
[2] Source: Preliminary figures on earnings on U.S. direct investment abroad after foreign income taxes (excluding withholding taxes) for 1970. Survey of Current Business, October 1971, p. 34.
[3] Foreign income taxes as percent of profits before tax of U.S. controlled foreign corporations and their subsidiaries. Statistics of Income, Supplemental Report on Foreign Income and Taxes reported on Corporation Income Tax Returns for 1962, U.S. Treasury Department, Internal Revenue Service, 1969.
[4] The effective tax rate in some cases reflects the fact that income from foreign sources is not taxed and in others the inclusion of foreign taxes paid on the income received from abroad. See Statistics of Income, ibid., p. 82.
[5] Includes Iran, Iraq, Israel, Kuwait, Lebanon, Jordan, Syria and other Arabian States.
[6] Includes Bahamas, Bermuda, Netherlands Antilles and British West Indies.

In table 4, the undistributed profits of controlled foreign corporations in 1962 are grouped according to the effective rate of tax in the country of investment. It shows that nearly one-half of retained earnings arose in countries where the effective rate of tax was below 40 percent and well over one-quarter where the rate was less than 30 percent.

TABLE 4.—UNDISTRIBUTED PROFITS OF U.S. CONTROLLED FOREIGN CORPORATIONS BY EFFECTIVE RATE OF FOREIGN TAX, 1962

Foreign tax rate	Undistributed profits	
	Amount (millions)	As percent of total
Less than 20 percent	$348	19.8
20 percent and under 30 percent	154	8.7
30 percent and under 40 percent	332	18.9
40 percent and over	927	52.6
All	1,761	100.0

Source: Derived from Statistics of Income, op. cit. table 22.

[15] This would not be so, however, if reported taxable income is defined under foreign rather than U.S. rules.

Revenue Cost

The revenue cost of deferral to the U.S. Treasury may be estimated as the additional amount of corporation income tax which would be due if all foreign income were taxed currently on an as-earned basis. This figure exaggerates the loss to the extent that income is ultimately repatriated and the tax collection is merely deferred to a later time. However, it is clear that most income retained abroad is reinvested in physical assets for plant expansion purposes.[16] If the U.S. tax is deferred until liquidation of the operation this is tantamount to a permanent deferral.[17] In making the estimate, there is also some question as to whether the tax deferral for noncontrolled foreign corporations should be included. Inasmuch as the latter account for only a small part of undistributed profits, not much is lost by omitting this form of income.[18] The estimate is made on the assumption that foreign taxes are credited rather than deducted. On the latter basis, of course, the revenue cost of deferral would be considerably higher, as noted in the previous section.

Again, it is difficult to make an accurate estimate of the value of deferral to the investor in the absence of recent IRS data on a country-by-country basis. The amount of before- and after-tax profits of U.S.-controlled foreign corporations as well as their distributions are available by industry and size of asset of the parent corporations. But one needs to know the actual effective foreign rates applied to profits on a per-country basis since there is some evidence that payout ratios are positively correlated with the foreign rate of tax.[19] The value of deferral depends on the distribution of retained earnings by effective rate of foreign tax and for this a country breakdown is needed. Since country data for controlled foreign corporations is only available for 1962, the aggregate data for 1966 is used in the revenue cost estimate given in appendix C. This may result in some understatement of the cost since presumably some part of the foreign taxes on undistributed profits would be noncreditable, while here the U.S. tax take is based on the assumption that the entire foreign tax would be eligible for the credit. Undistributed profits were estimated on a grossed-up basis and the differential between the U.S. and effective foreign rates applied. The result was extrapolated in relation to the growth of undistributed earnings of foreign affiliates between 1966 to 1970. This suggests that U.S. corporations with investments abroad in the foreign-incorporated subsidiary form are currently able to enjoy tax savings of approximately $900 million through tax deferral.

The tax cost to the Treasury is greatly reduced if (as noted earlier), we make allowance for crediting of foreign withholding taxes estimated at 15 percent of foreign profits net of foreign tax. Were deferral to be terminated, it is possible that all earnings of foreign controlled

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[16] See "Sources and Uses of Funds of Foreign Affiliates of U.S. Firms, 1967–8" *Survey of Current Business*, November 1970.

[17] If the retention of earnings abroad were only temporary the tax deferrment should be seen as an interest-free loan by government and only the interest cost over the period of deferrment included.

[18] Dividends from "unrelated" foreign corporations were approximately 6.7 percent of dividends from all foreign corporations in 1966. Figures are not available on undistributed profits of non-controlled corporations but the proportion would probably be somewhat less.

[19] In 1962, dividends paid out as a percent of after-tax profits were on the average 15.6 percent for U.S.-controlled foreign corporations operating in countries with tax rates under 20 percent, rose to 30.6 percent where tax rates were 20 percent and under 30 percent, to over 40 percent where the foreign rate of tax exceeded 30 percent.

See also George F. Kopits, *Dividend Remittance Behavior Within the International Firm: A Theoretical and Empirical Analysis*, June 1971 (Unpublished doctoral dissertation submitted to Georgetown University). This paper demonstrates the sensitivity of dividend pay-outs by the controlled foreign corporation to tax factors.

corporations would be distributed before reinvestment abroad in order to claim credit for the withholding tax. In this case the 1970 revenue cost of deferral is estimated at little more than $160 million.[20] However, it is submitted here that the $900 million figure above is more appropriate to the concept of tax preference since it measures the gain to the taxpayer obtained from reinvesting abroad. The reader is cautioned that only some 20 percent should be considered a Treasury cost if termination of deferral were followed by full distribution of profits, the remainder being a postponement of foreign withholding taxes. In view of the fact that undistributed profits of foreign affiliates are largely used for fixed investment purposes, however, the assumption of full distribution is somewhat questionable.

IV. Other Tax Preferences

It remains to discuss briefly certain other provisions of the corporate income tax which give preferential treatment to limited categories of investors. The special treatment for Western Hemisphere trade corporations, China trade act corporations, and U.S. corporations operating in the U.S. possessions originated in legislation before and during World War II. Special treatment for the so-called "less developed country corporation" arose in the Revenue Act of 1962. Designed to give tax preferences to limited categories of U.S. investment abroad, these provisions are not widely used because of the restrictions on eligibility. Nevertheless, from an equity standpoint they deserve mention even though they apparently impose modest costs in terms of tax revenue.

Western Hemisphere Trade Corporations

Certain U.S. corporations doing business in the Western Hemisphere are given a special deduction from taxable income under section 922 of the code. In effect, the provision amounts to a reduction of 14 percentage points in the U.S. corporation income tax rate. To be eligible, a corporation must be a domestic corporation, do all of its business in the countries of the Western Hemisphere, at least 95 percent of its gross income for the preceding 3-year period must be derived from sources outside the United States, and 90 percent of its gross income in that same period must be derived from the active conduct of a trade or business. Such a corporation cannot do its business through a foreign subsidiary since dividends therefrom would not be considered as derived from the active conduct of a trade or business. A WHTC is therefore not eligible for deferral and its income is subject to U.S. tax as accrued. A WHTC may, however, be in a subsidiary relationship to another U.S. parent corporation and files consolidated returns without penalty. It is also eligible for the foreign tax credit.

The apparent intent of the original (1942) legislation was to relieve U.S. investors in the Western Hemisphere from any competitive disadvantage resulting from the wartime U.S. corporate surtax.[21] Since the relief was aimed at the surtax, it is doubtful whether the legisla-

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[20] This conforms with the figure of $165 million given in the Treasury's submission to the committee on "Effect of Selected Tax Provisions," May 12, 1971.

[21] There is some evidence that the WHTC provision was introduced in response to the financial problems of a very few corporations doing business in Latin America. See "Hearings Before the Subcommittee on Tax Policy of the Joint Committee on the Economic Report," 84th Congress, 1st session, 624 (1965).

tion was intended as the enduring feature of the tax law which it seems to have become.

The WHTC provision has not been as widely used as might be thought, because tax deferral through foreign incorporation may offer greater benefits, and also because little is gained if the foreign rate of tax exceeds the U.S. rate applicable to WHTCs (currently 34 percent plus the additional tax on intercorporate dividends). A small number of very large corporations are responsible for the bulk of WHTC deductions. Since percentage depletion is available to the WHTC subsidiary, firms operating in extractive industries outside the U.S. but within the Western Hemisphere may benefit from both depletion and the WHTC deduction. WHTCs are also used to a considerable degree as selling subsidiaries both because foreign taxes are apt to be less on such sales from the United States and also because exporting activities can be readily separated off to meet the WHTC requirements.

WHTC deductions amounted to about $400 million in 1966. This corresponded to gross profits of approximately $1,380 million.[22] There is not sufficient information to show how much foreign tax was paid on this income and therefore how much of the U.S. tax reduction of 14 percentage points actually served to reduce the U.S. tax rather than to result in an excess foreign tax credit.[23] Furthermore, one does not know how much of the resulting excess credit was set off against other sources of income. If the entire $400 million deduction had resulted in reduction in U.S. tax due, the revenue loss would have been of the order of $190 million. Such an outcome would have required the foreign rate of tax on WHTC profits not to have exceeded 34 percent (=the U.S. rate of 48 percent less the 14 percentage point preference). If the average rate of foreign tax were, say, 40 percent the value of the provision to investors would have been approximately $100 million. Since most WHTC's operate in Canada, Mexico and other countries where the tax rate is of this order, $100 million seems a reasonable estimate. Moreover, if the WHTC acts as a selling subsidiary, it may incur very little in foreign tax and the full 14 percentage point reduction in U.S. tax would be applicable. Since earnings from foreign investment in the Western Hemisphere have increased by about 16 percent between 1966 and 1970, the revenue loss today could be put at roughly $115 million. Treasury estimates, however, put the loss at roughly half this level.[24]

Less Developed Country Corporations

The Revenue Act of 1962 eliminated or restricted some tax benefits to foreign investment but specifically excluded the so-called less developed country corporations from some of the new rules. These include exclusions from the full gross-up procedure for determining the foreign tax credit, the subpart F provisions for restricting deferral, and the taxation of repatriated capital gains from tax-deferred reinvestments as ordinary income.

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[22] The deduction equals 14/48 of gross profits.

[23] The IRS does not publish data on foreign taxes paid by the WHTC's or the countries in which WHTC's earn their income.

[24] See the Treasury submission, op. cit.

NON-GROSS-UP

Prior to the 1962 Revenue Act the U.S. tax liability on foreign income was estimated on the basis of foreign income net of foreign taxes. Yet the foreign tax at the same time could be credited against the U.S. tax. Thus the combined tax on one unit of remitted profits (gross of tax) under the pre-1962 formula was t_u-t_f (t_u-t_f) where t_u and t_f are the U.S. and foreign corporate tax rates respectively. The 1962 act eliminated this more favorable method of calculating the foreign tax credit by requiring full gross-up for all income other than that earned by the so-called "less-developed corporation." [25] Thus income earned by all other (non-LDC) corporations is grossed up by the amount of foreign taxes paid, the U.S. tax then applied and the foreign tax credited. In consequence the higher of the U.S. or foreign rate in effect paid.[26]

Retention of the non-gross-up procedure for income earned by the LDC corporations, however, means that a tax advantage results where the foreign tax rate is less than the U.S. rate. As the table below shows, the tax advantage is greatest when the foreign rate is one-half of the U.S. rate—with a U.S. rate of 48 percent and a foreign rate of 24 percent the combined tax rate is 42 percent.

Combined (U.S. and foreign) tax on 100 units of profits

Foreign tax rate (percent):	*Percent*
48	48.0
40	44.8
30	42.6
24	42.2
20	42.4
10	45.0
0	48.0

Although the nongross-up preference was retained for LDC corporations to encourage private investment in the less developed countries, there is little to recommend it. The value of the provision varies with the rate of foreign tax and becomes effective only when profits are remitted (deferral of the U.S. tax is available for undistributed profits). Thus, the provision encourages repatriation of earnings rather than reinvestment in plant and equipment which would be in the LDC's own interests. Although no statistics are available, it appears that the loss of tax revenue arising from this form of tax preference is limited. If all dividends received from related corporations in the less developed countries had been eligible for nongross-up, the revenue loss for 1964 would have been about $25 million. The Treasury estimate for 1970 is $55 million.

SUBPART F EXCEPTIONS

Under section 954 (b)(1), controlled foreign corporations may exclude from their subpart F income (i.e., certain income classified

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[25] The LDC corporation is defined as a foreign subsidiary engaged in trade or business in a less developed country, deriving 80 percent or more of its income from less developed countries and with 80 percent or more of its assets located in such countries. Under an executive order all countries other than the following were designated less developed: Sino-Soviet bloc, Australia, Austria, Belgium, Canada, Denmark, France, Germany (Federal Republic), Hong Kong, Italy, Japan, Liechtenstein, Luxembourg, Monaco, Netherlands, New Zealand, Norway, South Africa, San Monaco, Sweden, Switzerland, and the United Kingdom.

[26] Except where the overall limitation is used, as explained in sec. II.

as ineligible for deferral) [27] that income earned on qualified investments in the less developed countries provided it is reinvested in an LDC. Such qualified investments include the obligations of LDC's as well as the stock or debt obligations of an LDC corporation which is at least 10 percent owned. In effect, this means that investment income earned in one LDC may be transferred to and reinvested in another LDC without incurring U.S. tax.

This limited exception to an already highly complex set of tax rules with respect to subpart F income, creates further tax loopholes and encouragement to tax haven operations with little real incentive to productive investment in the LDC's. The most that may be said on its behalf is that it permits greater flexibility in the choice of location for reinvestment purposes, removing some of the locking-in effects arising from the subpart F provisions.

REPATRIATED CAPITAL GAINS EXCEPTION

A further tightening up of the tax law in 1962 with respect to foreign investment was designed to prevent the conversion of tax-deferred reinvestments abroad into capital gains by sale or liquidation of the assets. Under section 1248, such gains are now taxed as ordinary income, except with respect to LDC corporations if the seller has owned the stock for at least 10 years prior to sale. In the latter case, tax advantage is gained by reinvestment and subequent sale if the foreign rate of tax is relatively low. [28] However, it is unlikely that this loophole is an effective incentive. Although it encourages the retention of profits in the LDC's, the 10 years required before liquidation might be expected largely to neutralize any incentive effects on new investment. Moreover, it is highly questionable whether tax incentives to investment in the LDC's should take the form of such circuitous tax avoidance.

Investment in U.S. Possessions

Under section 931 of the Internal Revenue Code, U.S. corporations deriving 80 percent or more of their gross income for the 3-year period immediately preceding the taxable year within a U.S. possession, and deriving 50 percent of such income from the conduct of an active business within the possession, are treated as foreign corporations for purposes of the U.S. tax. [29] As a result, these corporations are subject to U.S. tax only on their income earned within the United States. Thus their income earned within the possessions becomes subject to U.S. tax only when paid out as dividends to another U.S. parent corporation or individual shareholders. In the former case. the parent corporation may claim a credit for taxes paid to the possessions. The value of the preference is the deferred U.S. tax which may be permanently foregone if dividends are distributed directly to individual shareholders. The value of the preference again is greater the lower the rate of tax in the possessions. Puerto Rico,

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[27] See sec. III.

[28] The effective tax rate equals $t_f + \frac{t_u}{2}(1 - t_f)$, where t_f is the foreign rate and t_u the U.S. tax rate. Thus with tax exemption in the foreign country, the effective rate on the capital gains would be 24 percent. The tax advantage declines as the foreign rate increases and disappears when the latter is 35 percent, assuming the U.S. rate to be 48 percent.

[29] U.S. possessions are here defined as the Virgin Islands, Guam, Panama, Canal Zone, American Samoa, Wake and Midway Islands. The exception for corporations also applies to Puerto Rico but not for individuals.

which is by far the largest source of such exempt income,[30] has had very liberal tax incentive schemes and presumably section 931 has conferred substantial tax benefits on U.S. corporations doing business in Puerto Rico.[31] Information is not available on the volume of earnings by U.S. corporations doing business in Puerto Rico and the possessions and qualifying for the section 931 concession. However, the Treasury estimates the revenue cost at $85 million.

Treatment of China Trade Act Corporations

A special exemption from the U.S. tax is given under sections 941 to 943 for the so-called China Trade Act Corporations. These are U.S. corporations earning income in Taiwan and Hong Kong and incorporated under Federal law as authorized by the China Trade Act of 1922. The exemption from U.S. tax is restricted to income derived from Taiwan and Hong Kong and the proportion of this income accruing to shareholders who are residents of these countries and either citizens or residents of the United States. Moreover, the tax savings must be distributed exclusively to this group.

V. Summary of Tax Preferences

To summarize the discussion thus far, the U.S. corporation income tax as it applies to foreign source income is not only highly complex but contains many inconsistencies and preferences. Deferral of tax on undistributed profits of foreign incorporated subsidiaries is by all standards of equity the most significant of these preferences and now involves an investor gain of about $900 million assuming foreign taxes to be credited. Since tax-deferred foreign income is generally used for reinvestment in physical assets, this deferrment may be considered virtually permanent. The Revenue Act of 1962 went some way toward closing some of the more striking benefits of deferral through operations by U.S. corporations in tax haven jurisdictions, but did so at the cost of greatly complicating the tax law and with doubtful effectiveness. The basic incentive toward investment in relatively low tax countries remains as well as the even more serious departure from taxpayer equity.

As to the foreign tax credit itself, the amount claimed against the U.S. corporation income tax was $2.8 billion in 1966 and is now probably of the order of $4 billion. Of this, perhaps $230 million is attributable to the overall limitation which permits averaging of high foreign tax rates with relatively low foreign tax rates to maximize the total foreign tax which is creditable. If it is argued that foreign taxes should be deductible (under the national equity concept discussed above), as are State and local taxes for the domestic investor, then the foreign tax credit should be seen as a tax preference which represents a current revenue loss of $1.7 billion. If the tax-deferred undistributed earnings of foreign incorporated subsidiaries are included the cost may be estimated at $3.3 billion. Thus if the termination of deferral were combined with the conversion from foreign tax

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[30] In 1964, $55 million of taxable income was reported by U.S. corporations from investments in Puerto Rico and the U.S. possessions, of which $51 million was from Puerto Rico. This includes only that income transmitted to the U.S. parent corporation.

[31] Since such a corporation is a domestic corporation, it may be liquidated by a U.S. corporate 80 percent owner free of tax under section 332. I owe this point to Allan G. Choate, "Federal Tax Policy for Foreign Income and Foreign Taxpayers—History, Analysis and Prospects," Temple Law Quarterly, Vol. 44, No. 4, 1971.

to foreign tax deduction, the Treasury might be expected to collect, say, $3.4 billion in additional revenue. It should also be added that the deduction method would greatly simplify compliance and administrative aspects of taxation of foreign income.

Other preferences, while important in particular cases of taxpayer equity, involve much smaller revenue costs. Of these, the Western Hemisphere Trade Corp. provision is the most significant involving a revenue loss of the order of $100 million.

The significance of tax preferences as a whole in quantitative terms may be put in better perspective when it is remembered that the benefits accrue to a relatively small number of very large corporations. The revenue cost might further be seen in relation to the similar amounts made available by the U.S. Government to the AID program, which were $1.7 billion in 1970. But a larger question arises as to whether it is still in the best interests of the United States (politically and economically) to foster through liberal tax treatment, U.S. investment abroad. It is to these questions that we now turn, first by looking at some of the major characteristics of U.S. direct investment abroad and in section VII by consideration of the effects of these tax subsidies on foreign investment and, in turn, the economic aspects of the investment itself.

VI. Profile of U.S. Investment Abroad

The book value of privately held U.S. investments abroad was $120 billion at year end 1970. As seen in table 5, $105 billion of this was long-term investment and in turn, nearly 75 percent of this, or $78 billion, was direct investment involving a minimum 10 percent ownership by a single U.S. corporation or individual and/or 50 percent or more collective ownership by U.S. citizens. The tax preferences under discussion apply to this direct form of investment. It may be seen that U.S. direct investment abroad tripled during the decade of the fifties and much more than doubled during the sixties.

TABLE 5.—PRIVATE FOREIGN INVESTMENT POSITION OF THE UNITED STATES

[Dollars in billions]

	1950	1960	1970
Direct investment	$11.8	$31.9	$78.1
Long-term portfolio investment	5.7	12.7	26.6
Short-term assets and claims	1.5	4.7	15.2
Total	19.0	49.3	119.9

Source: SCB, vol. 47, No. 9, September 1967, p. 40, and vol. 51, No. 10, October 1971, p. 21.

A notable feature of U.S. direct investment abroad is its concentration in the industrially advanced countries of the world (Canada and Western Europe in particular). As seen in table 6, two-thirds of direct investment abroad is located in the developed countries and one-half of this is in manufacturing industries. On the other hand, the crude petroleum industry accounted for the largest part (or about 40 percent) of investment in the developing countries.

TABLE 6.—U.S. DIRECT INVESTMENT ABROAD, YEAREND 1970, BY AREA, COUNTRY, AND MAJOR INDUSTRY

[In billions of dollars]

	Total	Manufacturing	Petroleum	Other
All areas	78.1	32.2	21.8	24.1
Developed countries	53.1	26.7	11.7	14.7
Canada	22.8	10.1	4.8	7.9
Europe	24.5	13.7	5.5	5.3
Australia, New Zealand, and Union of South Africa	4.3	2.2	.9	1.2
Japan	1.5	.8	.5	.2
Less-developed countries	21.4	5.5	8.4	6.5
Latin America [1]	14.7	4.6	3.9	6.2
Other Africa [2]	2.6	.1	1.9	.6
Middle East	1.6	.1	1.5	1.0
Asia and Pacific [3]	2.5	.7	1.1	.7
Unallocated	3.6			3.6

[1] Includes other Western Hemisphere.
[2] Includes United Arab Republic and all other countries in Africa except for the Union of South Africa.
[3] Excludes Australia and New Zealand.

Source: SCB, vol. 51, No. 10, October 1971, p. 32.

It is also clear that the vast bulk of these investments exist in the form of wholly or largely owned foreign affiliates of U.S. corporations. Thus a Department of Commerce benchmark survey [32] shows that over 80 percent of net earnings (after foreign tax) of U.S. direct investments abroad in 1966 accrued to foreign branches of U.S. corporations or to foreign incorporated subsidiaries, the assets of which were over 95 percent U.S.-owned. (See table 7.) Approximately one-third of all foreign earnings (net of foreign tax) emanate from the foreign branch rather than foreign incorporated form.[33] The branch form of foreign business, moreover, it heavily concentrated in the extractive industries. As noted before, this is largely a consequence of the tax laws.

TABLE 7.—NET EARNINGS ON U.S. DIRECT INVESTMENT ABROAD, BY DEGREE OF U.S. OWNERSHIP OF FOREIGN AFFILIATES, 1966

	Net earnings	
	Amount (millions)	Percent of total
U.S. ownership as percentage of total assets:		
95 to 100	$4,584	82
50 to 94	735	13
25 to 49	188	3
10 to 24	92	2
1 to 9	15	
All	5,614	100

Source: "Survey of Current Business," Aug., 1971, p. 15.

The great majority of foreign direct investments also appear to be made by a limited number of large U.S. corporations. Thus, the IRS Statistics of Income for 1966 reveal that over 80 percent of taxable income which U.S. corporations received from foreign sources (includ-

[32] SCB, August 1971, p. 15.
[33] 1969 net earnings of foreign corporations, $5,381, million; net earnings of foreign branches, $2,574, million; total net earnings, $7,955 million. Source: SCB, October 1970, p. 37.

ing foreign branch profits and dividends from foreign subsidiaries) went to 430 corporations with asset size in excess of $250 million. This is shown in table 8. It appears that foreign investment is very largely the province of a few giant corporations.[34] Indeed ownership of foreign enterprises appears to be considerably more concentrated than that of domestic operations. Thus, 28 percent of all net income in the corporate sector accrued to corporations with assets in excess of $100 million in 1967.[35] Yet in 1966, 90 percent of taxable income from foreign sources accrued to U.S. corporations with assets in excess of $100 million. If earnings of controlled foreign corporations alone are considered, 78 percent of such earnings were imputable to U.S. corporations in this large size class.[36]

TABLE 8.—TAXABLE INCOME FROM FOREIGN SOURCES BY SIZE OF ASSETS OF RECIPIENT U.S. CORPORATIONS, 1966

Size of total assets	Taxable income from foreign sources	
	Amount (thousands)	Percent of total
Under $100,000	$15,947	0.2
$100,000 under $500,000	15,545	.2
$500,000 under $1,000,000	14,771	.2
$1,000,000 under $5,000,000	70,685	1.0
$5,000,000 under $10,000,000	69,184	1.0
$10,000,000 under $25,000,000	139,552	1.9
$25,000,000 under $50,000,000	153,062	2.1
$50,000,000 under $100,000,000	250,858	3.5
$100,000,000 under $250,000,000	695,410	9.7
$250,000,000 or more[1]	5,752,699	80.2

[1] No breakdown is available for corporations with assets in excess of $250,000,000.
Source: Statistics of Income, Supplemental Report, op. cit.

VII. Appraisal of Tax Preferences

Tax preferences conferred on particular sources and uses of income involve revenue costs to the Treasury which are borne by taxpayers at large and involve departures from tax equity. Horizontal equity is breached since taxpayers of equal income are treated unequally depending on the sources of their income or the uses to which it is put. Vertical equity is usually also violated since the composition of income and its allocation by use is generally systematically related to the level of income itself. The intended progressivity of the tax structure is then thwarted. Nevertheless, there may be other overriding reasons why tax preferences or incentives are justified as an instrument of economic policy. It is therefore important that the economic effects of tax preferences be examined to see if they are consistent with policy objectives and, if so, how effective they are in this respect.

Tax preferences to foreign investment involve a broader range of considerations than do subsidies to purely domestic activities in a closed economy. To the interests of the favored taxpayer and the interests of the country at large are added those of the foreign country which imports U.S. capital. Even in a no-tax, no-subsidy world, the

[34] See Stephen Hymer and Robert Rowthorn, "Multinational Corporations and International Oligopoly: the Non-American Challenge," in the International Corporation edited by Charles P. Kindleberger, the MIT Press, 1970, p. 75.
[35] Statistics of Income, Corporation Income Tax Returns, 1967, IRS, Department of the Treasury, page 68.
[36] Statistics of Income, Supplemental Report, 1964, 1965 and 1966, Tables 21 and 30, op. cit.

export of capital carries implications for the level of combined output in the capital exporting and importing countries, as well as its distribution between countries, and for the income shares of labor and capital of each country. The presence of taxes serves to sharpen the conflicts of interest.

Equity Aspects

We have seen that since foreign investment involves the payment of income taxes to the foreign country wherein the investment is located, another dimension is added to the more straightforward concept of tax equity applicable in the domestic context. Taxpayer equity may now be interpreted to include both foreign and domestic tax burdens (the international equity concept) or merely the domestic tax (national equity concept).

Taking the international approach to taxpayer equity, the U.S. foreign tax credit may be judged equitable because it treats foreign taxes on a par with the Federal income tax and allows such foreign taxes to be credited against (or subtracted from) the U.S. tax applied to foreign income before tax. Under this concept the foreign tax credit provides no special preference and therefore involves no subsidy element. Indeed, application of the international concept of tax equity in its purest form would require the United States to go even further and allow full credit via tax rebates where the foreign rate of tax exceeds the U.S. rate. To some extent this is achieved through such ancillary provisions as the overall limitation and the carryforward and carryback provisions for excess credits.

Under the alternative national approach to taxpayer equity, the U.S. tax would be applied to foreign income net of foreign taxes. If this concept is accepted, the foreign tax credit must be judged to give a tax preference to foreign investors which is not available to domestic investors, who must pay the Federal corporation tax on profits net of any lower level State and local income taxes without benefit of credit. By comparing the U.S. tax revenue under the two methods (foreign taxes as credits or as deductions) it may be estimated that the foreign tax credit provides an annual tax preference to foreign investment currently of the order of $3.3 billion. This estimate includes all foreign direct investments whether in branch or subsidiary form and includes both remitted and unremitted income. Excluding currently tax-deferred foreign income (i.e., undistributed profits of foreign-incorporated subsidiaries), the estimate is reduced to $1.7 billion. Under this national concept of equity it may be noted that the rate of subsidy per dollar of foreign profits before tax depends on the foreign profits tax rate, as the following table shows.[37a]

Rate of subsidy implicit in foreign tax credit per dollar of gross foreign profits

Foreign tax rate:	*Amount*
.00	0. 00
.10	$. 05
.20	. 10
.30	. 16
.40	. 21
.48	. 25
.60	. 19

[37a] Let t_f=foreign profits tax rate, t_u=U.S. corporate income tax rate. If $t_f<t_u$, U.S. tax revenue per $ of foreign profits under the credit system=t_u-t_f, and under the deduction method=$t_u(1-t_f)$. The rate of subsidy per $ of foreign profits therefore equals $t_u(1-t_f)-(t_u-t_,)=t_f(1-t_u)$. If $t_f>t_u$, U.S. tax revenue under the credit method=0 and the rate of subsidy=$t_u(1-t_f)$.

Table 9 shows the distribution of 1964 taxable income from foreign sources according to the effective foreign tax rate. The reader should be reminded that such taxable income includes all branch earnings and dividends from foreign incorporated affiliates but excludes earnings retained abroad by the latter. The effective rate of tax includes both foreign profits and withholding taxes and thus differs from tables 3 and 4 which excluded the latter. Were undistributed profits included (thus raising the total income figure by roughly 40 percent) there would be a somewhat heavier distribution towards the lower foreign tax rate categories partly because there is a tendency for payout ratios to be lower in low-tax countries (See table 4, section III and table 10, section VII.). In view of this distribution of foreign income and under the national concept of equity, it would thus appear that U.S. investment abroad derives a tax subsidy via the foreign tax credit at an average rate of 24 cents per dollar of foreign income, if the cost is based on all income, and 13 cents if based only on dividends and branch earnings (currently subject to U.S. tax).[37b]

TABLE 9.—DISTRIBUTION OF TAXABLE INCOME FROM FOREIGN SOURCES BY EFFECTIVE RATE OF FOREIGN TAXES, 1964

Effective rate of foreign tax	Taxable income from foreign sources	
	Amount (millions)	Percent of total
Total (48.9 percent average)	$5,586.8	100.0
Under 20 percent	642.5	11.5
20 under 40 percent	1,006.6	18.0
40 under 60 percent	1,891.6	33.8
60 under 80 percent	1,842.6	33.0
80 percent or more	208.0	3.7

NOTES

This material was compiled from those returns with form 1118 filed in support of foreign tax credit claimed but which account for the vast bulk of foreign branch earnings and remitted dividends of foreign corporations.

Taxable income includes foreign branch earnings and dividends from foreign corporations grossed up by foreign taxes but excludes undistributed profits of foreign incorporated affiliates.

Foreign taxes reported exclude the excess foreign tax credit carryover but include foreign profits and withholding taxes paid on reported taxable income.

Source: Derived from Statistics of Income, Supplemental Report, 1964, 1965, and 1966, op. cit.

The subsidy rate arising from deferral may be either based on the credit or the deduction treatment for the foreign tax. In the former case the subsidy amounts to 7 cents per dollar of gross foreign profits of which 1.3 cents may be charged to the U.S. Treasury. In the latter case the deferral cost amounts to 14 cents per dollar of foreign profits.[38]

Combining both the foreign tax credit and deferral effects the following picture merges: On the basis of the international equity norm (where the foreign tax credit is the appropriate treatment) the average subsidy rate equals the deferral-credit estimate of 7 cents per dollar of gross-foreign profits. If the national equity norm is applied, then the

[37b] Total net earnings of U.S. investment abroad was $8.7 billion in 1970 (S.C.B., October 1971, page 38). It was seen that the average foreign rate of tax applied to profits of U.S. controlled subsidiaries was about 36 percent in 1966. Thus total foreign earnings grossed up at this foreign tax rate may be estimated at $13.6 billion. The foreign tax credit cost was estimated at $3.3 billion if applied to all earnings and $1.7 billion if applied only to dividends and branch earnings. The subsidy rate is then 24 cents and 13 cents respectively per dollar of gross foreign profits.

[38] The revenue cost of deferral (based on crediting of foreign taxes) was estimated at approximately $0.9 billion in relation to estimated foreign earnings (grossed up by foreign tax) of $13.6 billion, thus giving a subsidy of 7 cents per dollar. The cost of deferral based on the deduction treatment may be estimated at $2 billion, i.e., 14 cents per dollar of profit.

current combined subsidy is equal to 27 cents per dollar (13 cents for currently taxed income plus 14 cents for currently tax-deferred income).

Tax treatment given foreign investment income also has certain inconsistencies embedded in it. For instance, deferral arises from the practice of taxing only U.S. source income of foreign corporations. So long as foreign-source income of controlled foreign subsidiaries is held by them and not distributed as dividends to the United States, there is no U.S. tax and no foreign tax credit. However, when distributed, the foreign tax paid by these foreign corporations on their foreign income is permitted as an "indirect" credit to the U.S. parent. It would seem that if the United States chooses not to bring foreign-source income of foreign corporations within its tax jurisdiction, it should not recognize the foreign taxes they pay when earnings are distributed. In other words, deferral and the indirect foreign tax credit are inconsistent with each other and one or the other should be eliminated.

Effects on Business Organization

The U.S. corporation income tax applies to foreign source income in ways which differ depending on the form of business organization in which the foreign investment takes place and the degree of U.S. ownership. There are basic differences between the tax treatment afforded income earned by the foreign branch and that earned in the foreign corporation. Thus, foreign branch profits are taxed currently as they accrue while profits earned in the foreign incorporated affiliate are taxed only when remitted to the U.S. corporate investor. While it would appear more equitable to impute the undistributed profits of the foreign incorporated subsidiary to the U.S. parent and tax on a current basis (thus, to eliminate deferral), there have instead been efforts made in the past to extend the benefit of deferral to the foreign branch,[39] just as recent legislation extends deferral from U.S. tax to U.S. corporations engaged in exporting (the DISC proposal).

The advantage of deferral has undoubtedly contributed to the heavy concentration of foreign investment in the foreign incorporated form. The fact that perhaps 25 percent of foreign direct investment exists in the branch form is attributable to other aspects of the tax law. A foreign branch in the extractive industries, for instance, is eligible for the depletion allowance under the U.S. corporate income tax and its losses may be set off against domestic income. In most cases, furthermore, foreign countries do not impose withholding taxes on remitted branch profits as they generally do on dividends. This may also render the branch form of business more attractive in some instances, particularly where the foreign profits tax is high.

The indirect credit for the foreign profits tax is available only to a U.S. corporation owning at least 10 percent of the foreign corporation's stock. Portfolio investment involving less than 10-percent ownership, while sharing the benefits of deferral, is penalized with regard to remitted dividends which are taxed net of foreign taxes without an indirect credit for the latter. There is therefore a substantial differential in total taxes paid in the two cases. For instance, if the foreign profits tax rate is 30 percent and the withholding tax is 10 percent, 100 units of gross foreign profits will pay 37 units of foreign taxes

[39] See, for example, the Foreign Investment Incentive Act proposed but not enacted in 1959. Hearings on H.R. 5. Before the House Committee on Ways and Means, 86th Congress first sess., 1959.

if fully remitted to the U.S. corporation (=30+ (10 percent of 70)). If there is a larger than 10-percent ownership there will be another 11 units of U.S. tax to pay (=48 percent of 100 (gross-up profits)—30 (indirect credit) —7 (direct credit)). If there is a less than 10 percent interest, the additional U.S. tax amounts to 26.6 units (=48 percent of 70 (dividends grossed-up by 71) —7 (direct credit for withholding tax)). Only 6 percent of private long-term investment abroad is in the form of foreign corporate stock involving less than 10-percent ownership.

Effects on Investment Flows

Substantial revenue concessions are made (via the foreign tax credit) in the interests of tax neutrality.[40] Thus, it may be estimated that in 1966, total foreign earnings (before tax) of U.S. corporations were of the order of $12.2 billion ($7.2 billion of grossed-up remitted income and $5 billion of grossed-up undistributed profits).[41] On this income the U.S. corporate tax liability was less than $0.6 billion compared with $5.9 billion if it had been domestic-source income.[42]

However, in allowing deferral, the United States goes beyond the tax neutrality which is served by the foreign tax credit and provides a tax preference to foreign investment. It is not possible to know to what extent this has served to increase the volume of investment made abroad. Taxes are but one element in the total investment environment and other considerations may be governing. Yet, few would deny that on the assumption that corporate income taxes fall on profits and that capital markets are reasonably competitive, investment decisions at the margin are affected by tax rate differentials. If, on the other hand, opportunities for further expansion at home are limited, foreign investment may provide a preferred alternative to larger distributions to shareholders. Thus, foreign investment may provide an outlet for the corporation's capital and technology which would not otherwise exist. In such an extreme situation, a tax differential in favor of investment abroad would be immaterial to the investment decision.[43]

In the more general case, however, relative rates of profits taxes must be considered in conjunction with the level of tariffs in foreign markets. Rather than producing in the United States and exporting to foreign countries, in which case the foreign tariff must be paid on the final product, the firm may find it more profitable to produce abroad thus paying the foreign tariff only on imported inputs. This is especially so for those multinational corporations which have a certain amount of discretionary power in their internal transfer pricing policies and thus in the overall amount of tariffs and profits

[40] Tax neutrality in the foreign investment context is here defined as an equal (total) effective rate of tax on investment income received by U.S. corporations whether from abroad or domestic sources.

[41] See app. A.

[42] It should also be borne in mind that the United States (as the country of source) collects tax revenue from the income earned by foreign direct investment in the United States. In 1970, earnings (after U.S. tax) on such investments were $854 million and the U.S. corporate tax on these earnings approximately $700 million. Substitution of taxation by the country of incorporation (or residence) for the present taxation by source and residence (with foreign tax credit) would thus result in a $5.9 less $0.7, or $5.2 billion, revenue gain to the United States, again on the assumption of no deferral.

[43] This pattern of investment behavior might explain the puzzling fact that average net returns on investments abroad appear to have been lower than on those in the United States for much of the postwar period. See "Survey of Current Business," October 1971, page 31. The fact that heavy foreign investment took place might merely reflect a highly imperfect capital market, and the rigidities of corporate finance.

taxes which they pay.[44] The vast majority of U.S. direct investments made abroad are foreign-market oriented. Thus in 1965 about 90 percent of total sales of foreign affiliates of U.S. corporations in manufacturing and mining were made in foreign markets, the remaining 10 percent being sold in the United States.[45] This being the case, it would appear that foreign tariffs and the pattern of profits tax differentials which, because of deferral, favor U.S. investment abroad, both act in the same direction, namely to encourage U.S. production abroad.

Although there is no decisive evidence on the effects of tax preferences to U.S. investment abroad on investment flows, there is some indication that deferral may have resulted in a higher degree of profit retention and reinvestment abroad. Table10 shows the distribution of profits of U.S.-controlled foreign corporations according to the foreign rate of tax and the average payout ratio for each foreign tax rate interval. Unfortunately, the latest available data is for 1962 and does not reflect the effects of the 1962 Revenue Act which reduced some of the tax benefits of deferral. The data indicate a positive relationship between payout and the foreign rate of tax. Furthermore, the average payout ratio (from foreign profits after tax) at 39 percent was much lower than that for domestic profits which in 1962 was 50 percent and is now even higher.[46]

TABLE 10.—PROFITS OF CONTROLLED FOREIGN CORPORATIONS BY EFFECTIVE RATE OF FOREIGN TAX AND PAYOUT RATIOS, 1962

Effective foreign tax rate	Profits before taxes		Dividend as percent of profits after tax
	Amount (billion)	Percent of total	
Under 20 percent	$466.4	10.3	15.6
20 under 30 percent	296.4	6.6	30.6
30 under 40 percent	1,001.8	22.2	48.5
40 under 50 percent	2,751.2	60.9	42.6
Total (35.9 percent average)	4,516.2	100.0	39.1

Note: The calculations were made by grouping foreign countries which are major sources of income according to their effective rates of tax. The remainder, together accounting for about 10 percent of profits before tax were included in the 30–40 percent tax rate category since they had an average effective rate of 36 percent, even though some individual countries may have fallen outside those limits.

Source: Derived from Statistics of Income, Supplemental Report, 1962, op. cit.

While there is at least an associative relationship between average payout ratios and the tax advantages made available by deferral, this does not necessarily mean that total foreign investment levels (new capital plus reinvested earnings) were higher because of deferral. In fact, reinvested earnings may have served as a substitute for new outflows. Nevertheless, the overall effect of deferral in raising after-tax profits and increasing the attractiveness of foreign investment must be presumed a positive one on the amount of such investment.

If the U.S. tax treatment of foreign investment income has not had any effect on the decision to locate abroad, then the loss of revenue

[44] The so-called arms-length pricing rule is subject to some ambiguity and is not uniformly applied by all countries in which the multinational corporation may do business. For a theoretical treatment of the combined effects of profits taxes and tariffs on the location decision of firms, see Thomas Horst, "The Theory of the Multinational Firm: Optimal Behavior under Different Tariff and Tax Rates," "Journal of Political Economy," vol. 79, No. 5, September/October 1971, and P. B. Musgrave "International Division of Tax Base and the Less-Developed Countries," unpublished manuscript.

[45] "Survey of Current Business," November 1966, pp. 9–10.

[46] Economic Report of the President, 1971, p. 282.

and taxpayer equity seems uncalled for. If, on the other hand, tax preferences have at least a marginal effect on the volume of investment made abroad, it would seem appropriate to examine the economic role which this investment may play and its benefits and costs to the average U.S. taxpayer. This is a subject the study of which is in its early infancy and the intent here is merely to raise some of the issues without exploring them in any depth at either the theoretical or empirical level.[47]

Economic Role of U.S. Investment Abroad

The economic role of foreign investment is determined by the interaction of many complex factors and rests on the choice of a number of assumptions. First, does foreign investment displace domestic investment or domestic consumption or does it supplement these two? Further, does foreign investment supplement or displace investment in the host country? Here we will make the fairly reasonable assumptions the U.S. investment abroad serves to reduce investment at home but to supplement, or add to, investment in the foreign country. Second, are foreign investment and income flows matched in financial terms, by a transfer of real resources in the form of increased exports or imports as the case may be? In the discussion of longer run comparative effects on national and international productivity and on internal income distribution, it is assumed that these transfers take place via income, price, exchange rate or other policy adjustments. However, the balance-of-payments aspects of foreign investment include the process of adjustment itself—how long it takes and what underlying structural changes affecting international payments relationships are involved.

Differences of opinion on U.S. tax policy for foreign investment are related to the benefits and costs of foreign investment itself, both to the Nation as a whole and to particular groups and sectors within the national economy. Among these costs are the shortrun costs of adjustments, particularly in the balance of payments. Benefits for one group may be costs to another and either net gains or net losses may result for the country as a whole. The picture is further complicated when the interests of the foreign capital-importing countries are considered. These many aspects of international, national and sectional interests must nevertheless all be weighed in specifying the economic role of U.S. investment abroad.

INTERNATIONAL EFFICIENCY ASPECTS

The movement of capital from less to more productive uses both within a country and among countries is generally thought to result in efficiency gains. This usually implies an outflow of capital from those countries with relatively high capital-to-labor ratios to those where the capital-to-labor ratios are lower. Another important factor may also be the more advanced technology which accompanies the capital export, contributing to its superior profitability. In the interests of world productivity it is thus desirable that taxes on foreign investment income be neutral and neither serve to encourage or discourage

[47] For a fuller discussion, see P.B. Musgrave, "United States Taxation of Foreign Investment Income" Harvard Law School, International Program in Taxation, 1969. L. Krause and K. Dam. "Federal Tax Treatment Foreign Income, Washington, D.C., The Brookings Institution, 1964.

capital outflow. In other words, investors should be subject to the same effective rate of tax whether their investments are made at home or abroad. As noted earlier, the U.S. foreign tax credit is consistent with this criterion while deferral and other tax preferences to foreign investment are not. This view of the matter, it should also be noted, proceeds from two assumptions: (*a*) that profits taxes are not shifted via price changes and (*b*) that Government-provided benefits do not offset the reduction in profits consequent on the tax.[48]

The foregoing view of efficient capital flows which serve to increase world output must be modified in such cases where the foreign investment displaces domestic investment abroad. This is particularly apt to happen where the investment from abroad, with its superior technology, management, marketing facilities, and so forth, puts local enterprise out of business and, by reducing local returns, results in reduced local investment. There may still be net gains to the capital-importing country from such a development but world productivity is likely to decline since the losses to the capital-exporting country exceed the gains to the capital importer. It seems likely that U.S. investment abroad has on the whole been helpful to the economies of the host countries, especially insofar as it has been the vehicle of technology transmission. On the other hand, there may be instances where U.S. technology and management combined with local capital in joint venture forms would be preferable in terms of world efficiency standards than the movement of U.S.-owned capital itself. In this way the productivity of local capital is enhanced and its supply thereby increased rather than being displaced by foreign source capital. In this case, tax neutrality for capital income would not be called for; tax penalties on foreign investment combined with tax neutrality for income from licenses, royalties, and management fees and other returns to business knowledge being more consistent with the world efficiency criterion.

NATIONAL EFFICIENCY ASPECTS

Even if it is assumed that foreign investment increases world output, it may nevertheless be detrimental to the capital-exporting country, representing as it does a rearrangement of world resources. As capital moves out, there is little doubt that domestic labor productivity will be less than if the capital had stayed at home. Thus, to be advantageous from a national point of view, the increase in returns to capital must outweigh the losses to labor. This is most unlikely to be the case in view of the foreign tax share in the investment income. Thus, in terms of national interest, the relevant comparison is that between returns on investment made abroad after foreign tax and returns on investment made at home before tax. The former must exceed the latter by more than the loss to labor productivity to justify the foreign investment from the capital-exporting country's point of view. In addition, foreign investment is also likely to generate basic structural changes in the two economies of a kind which may worsen the trade balance of the capital exporter, as discussed in a subsequent section. This being the case, the terms of trade may have to change to the detriment of the capital-exporting country, thus adding to the income loss.

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[48] For a discussion of alternative assumptions, see P. B. Musgrave, op. cit.

The reader should distinguish between three separate and distinct criteria for the profitability of foreign investment. For the investor, the relevant comparison is between net-of-tax returns abroad with net-of-tax returns at home. Presumably, foreign investment will not be undertaken unless the former exceeds the latter. In terms of world efficiency of resource use, the comparison should be made between gross returns abroad and gross returns at home. Foreign investment is efficient so long as the former exceeds the latter. Yet, national productivity considerations suggest a comparison between net returns abroad with gross returns at home.

Comparison of rates of return on U.S. investments abroad with those on domestic investment suggest that net rates abroad have generally fallen short of gross rates in the United States.[49] While rates of return at home and abroad show considerable cyclical variation, if we take the period of the 1960's as a whole, the average rate of return on U.S. investments abroad in manufacturing industries was 11.8 percent after foreign profits taxes but before withholding taxes.[50] Allowance for the latter would further reduce the return to, say, 11 percent. Over the same period, the average rate of return on domestic corporate investment in manufacturing after payment of U.S. Federal tax was approximately 11.2 percent.[51] There is some evidence in recent years of an upward trend in the rate of return on foreign investment, which may be partly attributed to a maturing of those investments which are of young vintage relative to those in the United States. Nevertheless, after making allowance for these factors and for a wide margin of error, it is clear that the rate of return on foreign investment net of foreign tax is likely to be substantially below the domestic return gross of tax. These national losses of capital income must be added to the income losses to domestic labor and from possible deteriorating terms of trade consequent on the capital outflow.

In order to bring the investor's decision in line with the national interest therefore, the United States should apply its corporate income tax to foreign investment income net of foreign taxes; that is, allowing foreign taxes as deductions rather than credits, and without benefit of deferral.[52]

INTERNATIONAL REDISTRIBUTION ASPECTS

Even if it is concluded that foreign investment is detrimental to the U.S. economy as a whole, this need not suggest that such investment be actively discouraged if the economic well-being of the capital-importing countries is taken into consideration. The interests of the less developed countries should carry particular weight here.

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[49] "Survey of Current Business," October 1971, p. 31; and P. B. Musgrave, op. cit., p. 28.

[50] U.S. share in foreign earnings net of foreign profits taxes expressed as a percentage of book value direct investment abroad at beginning of year.

[51] Ratio of profits after tax to stockholder's equity. See "Economic Report of the President," February 1971, p. 284.

[52] The investor will invest abroad under the following conditions:

$$r_f(1-t_f-t_{uf}) \geq r_u(1-t_{uu})$$

where r_f and r_u=gross returns on foreign and U.S. investment respectively, t_f is the foreign rate of tax, t_{uf} the effective rate of U.S. tax on foreign income and t_{uu} the U.S. tax rate on domestic income. World efficiency conditions require that foreign investment be undertaken if $r_f \geq r_u$. To meet this condition, $1-t_f-t_{uf}=1-t_{uu}$ or $t_{uf}=t_{uu}-t_f$, i.e., a foreign tax credit is needed. National efficiency conditions require that $r_f(1-t_f) \vee r_u$ which will be met if $\frac{r_u(1-t_{uu})}{1-tf-t_{uf}}=\frac{r_u}{1-t_f}$ i.e., if $(1-t_f)(1-t_{uu})=1-t_f-t_{uf}$ or $t_{uf}=t_{uu}(1-t_f)$. That is, the tax applied to foreign investment income should equal the domestic rate applied to income net of the foreign tax.

There is considerable ambivalence abroad in official and unofficial attitudes toward U.S. private investment. The economic benefits are generally acknowledged and welcomed, particularly those that come through the transfer and application of superior U.S. techniques, yet uneasiness is also often expressed as to the loss of national economic control which a large degree of foreign capital ownership implies. Most capital-importing countries would prefer to have U.S. capital enter as joint ventures with local capital. This might suggest that any tax preferences given to foreign investment and justified in terms of their contribution to foreign development, should be confined to investment in the less developed countries and that in joint venture form of a type welcomed by the host country. Furthermore, tax preferences to investment should be weighed against preferences given to imports from the less developed countries. It makes little sense to encourage U.S. private investment in these countries while there are trade barriers erected against their sales to this country. Outright hostility toward foreign ownership and enterprise has been expressed in some countries, resulting in some cases in expropriations of U.S. investments. No good purpose is served for either country by foreign investment which leads to such political tensions and economic losses. Alternative ways of assisting the developing countries through official loans, grants, or technical assistance should be considered.

As was shown in an earlier section, most U.S. investment abroad flows to Canada, Europe, and other developed regions of the world. U.S. capital, both private and official, has made important contributions in the post-World War II period to the growth of these economies. The recent depreciation of the dollar against the stronger currencies of many of these countries, representing a decline in the U.S. terms of trade, is a manifestation of the improved economic position of these countries relative to that of the United States, in no small part attributable to the role of U.S. capital abroad. So long as this outcome is accepted by the United States as a desirable redistribution of international resources, little further can be said about tax preferences to foreign investment. However, if the changing economic balances brought about by this capital outflow were to be resisted by the United States through the imposition of trade controls and other autarchic trade and payments policies, then it is suggested here that a more critical evaluation of our tax policies for foreign investment is in order. If a choice has to be made between free trade and tax-favored foreign investment, it is rather clear that the former should be preferred.

NATIONAL INCOME DISTRIBUTION ASPECTS

Foreign investment carries significant implications for the shares of capital and labor in national income but conclusions depend on the form of empirical growth model which is used for the purpose.

Whatever the precise form of production function, a reduction in the absolute level of labor income below what it would be were the capital to be invested in the United States may be expected. At the same time, investment abroad would not take place unless its net return there exceeded its net return at home. Thus, the absolute income level of capital (including that earned abroad) increases. Combining the two, the share of labor in total income, including capital earnings abroad,

declines. Furthermore the Treasury experiences a revenue loss which, if recouped via higher tax rates on domestic source income, is unlikely to offset this change. On the other hand, the flow of foreign capital into the United States raises U.S. labor income and depresses that of U.S. capital. Since outflow of U.S. capital exceeds the inflow of foreign capital, attention is focused on the labor income implications of the net outflow.

Various methodologies may be used to make a first approximation to the order of magnitude involved. Thus, Denison[53a] argues that a 1-percent increase in capital input would give rise to a 0.2-percent increase in national income, 77 percent of which would accrue to labor. Between yearend 1965 and yearend 1970, the U.S. direct investment position abroad increased by $28.6 billion, while foreign direct investment in the United States increased by $4.4 billion.[53b] Together these changes made for a reduction of net investment in the U.S. economy of $24.2 billion over this period. Looking at the average year for the 1966–69 period, let us assume the relevant capital input stock figure for the U.S. domestic economy to be $1,000 billion.[53c] The average annual investment forgone would thus have been one-fifth of $24.2 billion or $4.8 billion, equal to 0.48 percent of capital input. This would account for a national income loss of 0.96 percent, approximately $700 million, and a labor income loss of approximately $550 million. This, however, would be the loss corresponding to the forgone capital input for 1 year only. To judge the policy implications we should ask what would be the rate of annual loss to labor if the $4.8 billion reduction in capital input should continue over the years? The answer is that, assuming straight-line depreciation over 20 years, it would equal $5.8 billion as the steady state loss in 20 years with a loss of $4.3 billion reached in the 10th year.[53d]

An alternative way of looking at the matter follows Solow's methodology, by which a 10-percent increase in gross investment would raise the growth rate of gross national product by approximately one-half of 1 percentage point.[53e] The net loss of capital to the U.S. economy of $24.4 billion over the period 1966–70 represents a 20.6-percent reduction in net private nonfarn nonresidential fixed investment in the United States of $117.8 billion.[54] This reduction would thus lower the growth of GNP by 1.05 percentage points. With an annual GNP of $863.4 billion (average for 1966–70), this average reduction would have amounted to $9.1 billion at the steady state stage. If the wage and salary share were 70 percent, the gain might have been divided into about $6.4 billion in wages and salaries and $2.7 billion in other capital income. Thus, it would follow that the net loss of capital to the U.S. economy (after allowing for capital inflow from abroad) over the

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[53a] Edward F. Denison, "How to Raise the High-Employment Growth Rate by One Percentage Point," American Economic Review, vol. LII, No. 2, May 1962, and "The Sources of Economic Growth in the United States and the Alternatives Before Us," Committee for Economic Development, 1962.

[53b] Survey of Current Business, vol. 51, No. 10, October 1971, pp. 32-38.

[53c] A rough estimate of this amount may be obtained by using a depreciation figure of $50 billion (capital consumption allowances of nonfarm, nonfinancial corporate business—Survey of Current Business, August 1971, p. 42—adjusted to include noncorporate depreciation). Assuming an average useful life of 20 years, the depreciation is thus multiplied by 20 to give $1,000 billion.

[53d] The results differ depending on the depreciation formula used. Thus, using a 20-year single declining balance formula gives a labor income loss of $7.1 billion after 20 years and $4.4 billion after 10 years. These figures also follow on the assumption that the domestic capital stock remains constant. If the capital stock rises, then the percentage loss due to the outflow falls, but is in turn applied to a rising national income. Due to the fixed nature of the coefficients involved it is difficult to translate this methodology into a growth model.

[53e] Robert Solow, "Technical Progress, Capital Formation and Economic Growth," American Economic Review, vol. LII, No. 2, May 1962.

[54] Gross nonresidential fixed investment less capital consumption allowances of nonfarm, nonfinancial corporations. Survey of Current Business, August 1971, page 42.

1966–70 period, if continued at that annual rate would reduce labor income by an annual steady-state rate of $6.4 billion, but would leave capital income after tax at worst unchanged (net income earned on investment abroad may be assumed to exceed the losses due to the capital inflow from abroad).

Either of these methods is speculative in nature and the results have to be interpreted accordingly. Moreover, whether an annual rate reduction in labor income of around $6 billion (equal to 1.3 percent of 1968 levels) should be considered large or small is a matter of judgment but in any case is an interesting aspect of the problem which should not be omitted when appraising the effects of net capital outflow

BALANCE-OF-PAYMENTS ASPECTS

Most of the interest by policymakers and economists in U.S. investment abroad has centered on its role in the balance of payments. The overall effects are made up of many different strands and the analysis is too complex to be spelled out in detail here.[55] The explicit and measurable capital outflow—a debit in the balance of payments—and income inflows, credits, which include profits, dividends, and interest payments earned on the investment are straightforward. Predictably, the balance on these investment-and-return income flows has improved in recent years as the income inflow earned on accumulating past investment begins to overtake the continuing capital outflow, as seen in the following table.[56] It may be seen that the rate of capital outflow declined significantly between 1967 and 1970, reflecting the voluntary, then mandatory, foreign investment guidelines laid down by the Government's foreign direct investment program. The net favorable balance, however, declined during 1970 as a result of the strong upsurge in capital outflow.

TABLE 11.—U.S. DIRECT INVESTMENT ABROAD: NET CAPITAL OUTFLOWS AND INCOME REMITTANCES

[In millions of dollars]

	Net capital outflow	Interest, dividends and branch earnings	Net balance (debit—)
Year:			
1963	1,976	3,129	1,153
1964	2,328	3,674	1,346
1965	3,468	3,963	495
1966	3,661	4,045	384
1967	3,137	4,518	1,381
1968	3,209	4,973	1,764
1969	3,254	5,658	2,404
1970	4,403	6,026	1,623

Source: SCB, October 1971, p. 28.

It is important to realize that after allowing for foreign taxes and the relatively high rate of reinvestment for foreign profits of U.S.

[55] See Musgrave, *op. cit.*; Krause and Dam, *op cit.*; Hufbauer and Adler, *op. cit.*

[56] This paper omits allowance for licensing and management fees, royalties, rentals and other service payments for U.S. technology which were earned by U.S. corporations doing business abroad. These receipts (credit items in the balance of payments) amounted to $1.4 billion in 1969. They have not been attributed to the foreign investment by inclusion with dividends and profits since they are payments for separate and specific services rendered, services which to some degree are separable from the capital investment itself. Presumably U.S. parent corporations could continue to receive this income even if their investments abroad were reduced.

investments abroad, that the period over which any given unit of capital invested abroad is "returned," for balance-of-payments purposes, in the form of remitted earnings, may be quite extended. Various estimates have placed this payoff period at between 7 and 14 years. Thus the short run consequences of a slowdown in capital outflow—including reinvested earnings—would represent a clear gain to the U.S. balance of payments. Eventually, of course, this would have the delayed effect of reducing income inflows.

However this may be, the capital and income flows represent only a part, and it may well be the smallest part, of the effects of foreign investment on the balance of payments. More important is the intriguing question of its indirect effects on the trade balance and in particular on U.S. exports. This is especially relevant to U.S. manufacturing investment abroad, sales of which in 1968 were two and one-half times the value of U.S. manufactured exports and over most of the 1960's have been growing at a more rapid rate than have domestic manufactured exports. (See table 12.)

TABLE 12.—U.S. EXPORTS OF MANUFACTURED PRODUCTS AND SALES OF FOREIGN MANUFACTURING AFFILIATES OF U.S. FIRMS

[Dollars in millions]

	U.S. exports of manufactured products [1]		Sales of foreign manufacturing affiliates	
	Amount	Annual increase (percent)	Amount	Annual increase (percent)
Year:				
1961	12,784	----------	25,961	----------
1962	13,668	6.9	27,923	11.4
1963	14,297	4.6	31,809	13.9
1964	16,529	15.6	37,438	17.7
1965	17,439	5.5	42,317	13.0
1966	19,218	10.2	(2)	[3] (12.8)
1967	20,844	8.5	53,151	[3] (12.8)
1968	23,844	14.3	59,676	12.3
1969	26,785	12.5	(2)	(2)
1970	29,340	9.5	(2)	(2)

[1] Includes military grant-aid shipments.
[2] Not available.
[3] Equals ½ the percentage increase between 1965 and 1967.

Source: SCB, October 1970, p. 18. Economic Report of the President, February 1971, p. 300.

Most manufactured exports and most foreign investments in manufacturing industries are undertaken by large corporations and primarily by the same corporations. Spokesmen for these corporations have asserted that selling of exports abroad is frequently merely a prelude to foreign investment. That is to say, manufacturing operations are shifted abroad once the foreign market is explored and established via exports. Production abroad may be chosen in order to take advantage of lower labor and transportation costs, to escape tariffs, to benefit from lower taxes or for other reasons. The important question to be answered for the balance of payments is whether and to what extent U.S. exports would have been larger had the producing operations not been shifted abroad—not whether producing abroad is more profitable than producing exports in the United States, which it evidently is. Some businessmen argue that without production abroad, U.S. sales of manufactured products in foreign countries would not be possible; indeed, it is sometimes argued that foreign

investment facilitates rather than displaces exports from the United States.

Any meaningful assessment of the effects of foreign investment on the U.S. trade balance must allow for alternative uses of the capital and other resources. For instance, investment at home rather than abroad may result in modernized or lower cost operations or the development of new products for export. The capital might even be encouraged through Government policies into such socially needed purposes as urban reconstruction, environmental improvement and so on. Or, as an alternative to foreign investment (to the extent needed to keep foreign markets in U.S. hands) an effective system of export subsidies might be devised.

Empirical evidence, although not conclusive, suggests that any positive effects on net exports arising from foreign investments are not large. U.S.-produced machinery and equipment, for instance, furnished only some 27 percent of the affiliates total plant and equipment expenditures in 1962–64.[57] Purchases of intermediate goods and of finished goods for resale from the United States also represented only 7 percent of sales of foreign manufacturing subsidiaries. There is as yet no final answer as to whether foriegn-produced manufactures displace U.S. exports, although one empirical study suggests that this is so.[58] But it should be borne in mind that since sales of affiliates abroad are so large relative to U.S. exports, it would take only a small displacement effect to cause a very substantial absolute reduction in U.S. exports. Thus if only 2 percent of sales of foreign manufacturing affiliates (currently running at nearly $70 billion) were to displace U.S. products (either in the United States or foreign markets), the entire excess of remitted income over capital outflow would be offset. Any displacement beyond that low level would represent a net debit on foreign investment account.

Of course, it is important to distinguish between different forms of investment abroad, particularly by industrial classification. For instance, investments which serve to increase and cheapen the supply of raw materials may improve the U.S. terms of trade even though some displacement of domestic production may be involved, thus "repaying" the U.S. economy for the loss of capital. The effects are likely to be different in the case of manufacturing investment where competition with U.S. exports is involved.

Alternative Views

Some writers have attributed a more positive role to U.S. investment abroad in its effects on the U.S. economy and in turn suggested a more liberal tax treatment than has been proposed in this paper. These views, which are shared by most business representatives, hinge on the implicit assumptions that (*a*) in the absence of such investment, domestic investment would not have been correspondingly higher but that investments of foreigners would have been higher, due to the absence of competition from U.S. affiliates and that (*b*) the increased investment by foreigners would have displaced U.S. exports. It is acknowledged that U.S. investment abroad, particularly in manu-

[57] See P. B. Musgrave, op. cit., p. 36.
[58] Hufbauer & F. Adler, *Overseas Manufacturing Investment and the Balance of Payments*, Washington, D.C., U.S. Treasury Department, 1968, Tax Policy Research Study No. 1.

facturing, to a large degree represents a moving abroad of U.S. production which previously served export markets. However, it is asserted that had it not done so, foreigners would in any case have competed away such exports. Indeed it is suggested that some increase in exports may result from the investment due to purchases of intermediate and capital goods from the United States. Such increased exports, arising from purchases by subsidiaries abroad, it is claimed, increase employment in the United States to a level above what it would have been in the absence of the investment.

In evaluating this conclusion, it is difficult to see why there would be no alternative opportunities for such investments in the United States, especially under an assumption of a fully employed economy secured by appropriate stabilization policies. It can hardly be claimed that the U.S. economy has run out of socially and privately beneficial investment opportunities. It is nevertheless true that rechanneling of such capital into alternative domestic uses may be needed through larger distributions of dividends and reallocation via the capital market. If private domestic investment opportunities are limited, i.e. if the stagnation thesis of the thirties is validated, stabilization policy has to be adjusted accordingly by encouraging consumption and public investment expenditures. Furthermore, if U.S. investment abroad should indeed displace that of the foreign countries themselves and hence have no effect on relative levels of capital formation among countries, there would seem to be little economic rationale in encouraging it.

As to the export argument, it should be emphasized that sales by U.S. subsidiaries abroad do not correspond, in their effects on the U.S. economy and balance of payments, to exports by firms producing in the United States. It is surely not "share of foreign markets" by U.S. capital which is the relevant objective but "share of foreign markets" by U.S. value-added, including both that contributed by American capital and labor. The former objective may have some political significance but little of an economic nature. If we are interested in the share of American value-added in world markets, then export subsidies might well be preferable to foreign investment, and combined with restraints on capital outflow.

Unless it is assumed that the funds invested abroad would not in any case have been invested at home, the effects on U.S. employment must be negative for the loss of investment (and reinvestment) at home exceeds the additional exports to U.S. affiliates abroad; and both are subject to the same multiplier. Furthermore, such exports to U.S. affiliates must be compared with exports to foreign-owned companies, which, it is held, are displaced by the investment from the United States.

Another argument advanced in defense of foreign investment from the U.S. standpoint is that it provides an income-earning outlet for management and technology.[59] This view coincides with the proposition that the comparative advantage of the United States in world trade has been moving in the direction of highly sophisticated technological services and away from the traditional merchandise and services. The question may be raised, however, whether the capital outflow is needed as a *sine qua non* for the export of such services. Licensing and management fees and royalty payments may surely

[59] See for instance, Raymond Vernon, "The R & D Factor in International Trade and International Investment of United States Industries," Journal of Political Economy, February 1967.

be procured through sale of such services to foreign enterprises without setting up U.S. producing operations abroad.

The proposition has also been made that the rapid increases in U.S. investment abroad in recent decades is a manifestation of a normal evolutionary process in which technological advances (embracing both more efficient methods of producing old products as well as the development of new products) are first exploited in the domestic market, then through exports in foreign markets, which in turn generate transmission to foreign competitors. Finally production moves abroad to meet this foreign competition.[60] Acceptance of this reasonable hypothesis, however, need not lead to the further conclusion that policies (including tax policy) which affect the magnitude of this movement of production facilities abroad need be favorable, unfavorable, or neutral. The foregoing is a description of a historical process rather than a prescription for tax policy which can intervene to hasten or delay this process depending on where the best interest of the United States are judged to be.

With regard to appropriate U.S. tax treatment of foreign investment, those favoring the present system (or a liberalized version of it) argue that since such investment is favorable to the U.S. economy, it should at least not be taxed at higher rates than applies to its competitors in the foreign countries. Indeed, those who take this view have often suggested that the exemption of foreign source investment income would be the wiser policy to follow. But if foreign investment is taxed only by foreign governments and at rates lower than in the United States, it gets more favorable treatment than does investment in the United States, which is nonneutral and inequitable. It is true that heavier taxation on U.S. investors abroad than on their foreign competitors there reduces their net profitability by more than that of the foreigner, but this need not affect their price competitiveness. While expansion out of internal funds may be reduced below what it would have been under the exemption approach this is the desired result if it is concluded that the latter is too high. Since foreign enterprises usually argue that U.S. subsidiaries abroad have other competitive advantages (such as access to a larger capital market), the tax differential is seen by them as an equalizing rather than distorting element. Be that as it may, taxpayer equity and general economic interests of the United States should be the paramount considerations in tax policy toward foreign investment, rather than the equalization of profits taxes on U.S. business abroad and domestic enterprises in the countries where U.S. investment is located.

As for deferral in particular, it has also been argued [61] that the U.S. Treasury would gain little by eliminating deferral because the tax revenue gained would be greatly reduced by credit claims for foreign withholding taxes. This may be true, as the revenue estimates above indicated, but the subsidy cannot in this case be measured entirely in terms of revenue cost to the United States. The fact is, that deferral of U.S. tax confers a substantial tax advantage on foreign investors since by reinvesting abroad they may avoid both the U.S. corporate tax and the foreign withholding tax. Ending deferral would result in increases in both U.S. and foreign revenues but the economic and equity gains go beyond the revenue effects.

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[60] See Raymond Vernon, "International Investment and International Trade in the Product Life Cycle," *Quarterly Journal of Economics*, May 1966.

[61] See President's Commission on International Trade and Investment Policy, op. cit.

Conclusion

In conclusion, it is evident that the economic role of foreign investment is complex and controversial. This is so because it involves more than one economy, more than one Treasury and many groups of interested parties. While this report would not conclude that foreign investment should be banned or even controlled, it is submitted that there are enough serious doubts about its effects on the economic well-being of the United States (including distributional considerations) to call current tax preferences such as deferral into question. Indeed, it may well be that a less generous tax treatment, including deductibility rather than crediting of foreign taxes, or a reduction in the foreign tax credit limit, may be called for. Furthermore, termination of deferral is consistent with both neutrality and equity criteria. Continuation of such benefits if at all, should be limited to particular categories of investment such as that in the less developed countries. But even in case that, as with almost all tax-type subsidies, explicit investment grants could achieve the purpose more effectively and efficiently.

Appendix A

DERIVATION OF ESTIMATED REVENUE COST OF FOREIGN TAX CREDIT IN 1970

[Dollars in millions]

Year and item	Amount	Sources [1]
1966:		
1. Foreign tax credit claimed	$2,843.2	SIFIT, 1964-66, table 21
2. Taxable income from foreign sources (gross)	7,176.7	Ibid., table 20.
3. Foreign taxes paid or accrued and deemed paid	3,580.2	Do.
4. Estimated U.S. tax before credit	(3,444.8)	48 percent of line 2.
5. Estimated U.S. tax after credit	(583.5)	Line 4 minus line 1.
6. Estimated U.S. tax, foreign taxes deducted	(1,726.3)	48 percent of line 2 minus line 3.
7. Revenue cost of tax credit for distributed earnings	(1,142.8)	Line 6 minus line 5.
8. Estimated grossed-up undistributed profits of controlled foreign corporations.	(4,269.1)	See line 7, app. C.
9. Foreign profits taxes	(1,548.2)	Line 7 minus line 6, app. C.
10. Withholding tax on undistributed profits, if distributed.	(408.1)	15 percent of line 6, app. C.
11. U.S. tax liability with foreign tax credit assuming distribution.	(91.4)	48 percent of (line 8 minus line 9, minus line 10).
12. U.S. tax liability if foreign taxes deducted, assuming distribution.	(1,110.1)	48 percent of (line 8 minus line 9, minus line 10).
13. Revenue cost assuming distribution	(1,018.7)	Line 12 minus line 11.
14. Combined revenue cost on all profits, assuming distribution.	(2,161.5)	Line 7 plus line 13.
1970:		
15. Net earnings on foreign investment, 1966	5,720.0	SCB, October 1971, p. 28.
16. Net earnings on foreign investment, 1970	8,733.0	Do.
17. Revenue cost of foreign tax credit assuming all earnings distributed.	(3,311.4)	Line 14 times line 16 divided by line 15.

[1] Statistics of Income, Supplementary Report on Foreign Income and Taxes on Corporation Tax Returns, Internal Revenue Service referred to as SIFIT. Survey of Current Business, Department of Commerce referred to as SCB.

Appendix B

ESTIMATED REVENUE COST OF OVERALL LIMITATION

Year and item	Using per-country limitation	Using overall limitation	Source
1964:			
1. Taxable income from foreign sources, millions of dollars	2,078	3,509	SIFIT, 1964-66.
2. Total creditable foreign taxes, millions of dollars	1,772	1,656	Table 10.
3. Foreign tax credit claimed, millions of dollars	883	1,384	Do.
4. Carryover of foreign taxes, millions of dollars	559	138	Do.
5. Foreign taxes paid, accrued and deemed paid, millions of dollars.	1,213	1,517	
6. Current foreign tax as percent of taxable income	58.4	43.2	Line 5 as percent of line 1.
7. Foreign tax credit claimed as percent of taxes paid	72.8	91.2	Line 3 as percent of line 5.

If foreign income under the per-country limitation had been subject to the 43.2 percent foreign tax rate (as in the "overall" case), taxes paid (line 5) would have been $898 million. At the same time assume that excess credits (out of taxes currently paid) which were $330 million ($1,213-$883) would be reduced by 8 percent of taxable income, or $166 million (the difference between the foreign rate of 58 percent and the U.S. rate of 50 percent). The foreign tax credit claimed would then be $734 million (=898−330+166) or 81.7 percent of taxes paid. The difference between this proportion and the 91.2 percent claimed by corporations using the overall limitation may then be attributed to the latter provision. Thus it may be concluded that had corporations under the overall limitation been subject to the per-country limitation, their foreign tax credit claim would have been less by 10 percent of their foreign taxes paid and accrued, or about $150 million. Extrapolated to 1970, this figure might be of the order of $230 million.

ESTIMATED REVENUE COST OF TAX DEFERRAL IN 1970

[Dollars in millions]

Year and item	Amount	Source
1966:		
1. Net current earnings and profits (after foreign profits taxes) of controlled foreign corporations.	$4,453.3	SIFIT, 1966, table 29.
2. Foreign income and profits taxes	2,533.2	Do.
3. Before-tax earnings and profits	6,986.5	Line 1 plus line 2.
4. Distributions out of current earnings (assumed net of profits taxes).	1,732.4	SIFIT, 1966, table 29, includes 1st and 2d tier CFCs.
5. Estimated wthholding tax	(259.9)	Estimated at 15 percent of line 4.
6. Estimated undistributed profits of controlled foreign corporations.	(2,720.9)	Line 1 minus line 4.
7. Estimated undistributed profits grossed up by foreign profits tax.	(4,269.1)	Line 6 times line 3 line 1.
8. Estimated U.S. tax due if taxed currently:		
(a) Without distribution	(499.5)	U.S. tax of 48 percent less credit for foreign profits tax of 36.3 percent times line 7.
(b) With distribution	(91.4)	Line 8(a) less credit for withholding tax (15 percent of line 6).
1970:		
9. Reinvested earnings of foreign subsidiaries, 1965-66 average.	1,640.0	SCB, October 1971, p. 28.
10. Reinvested earnings of foreign subsidiaries, 1970	2,885.0	Do.
11. Estimated cost of deferral:		
(a) Without distribution	(878.6)	Line 8(a) times line 10 line 9.
(b) With distribution	(160.8)	Line 8(b) times line 10 line 9.

Appendix D

Suggestions for Improving Published Material on U.S. Investment Abroad

The principle sources for published material on income and capital flows, balance sheet data and tax liabilities for U.S. investment abroad are the Treasury, IRS Statistics of Income, and the Department of Commerce Survey of Current Business.

Statistics of Income

The Internal Revenue Service is a fruitful source of statistical information on investment abroad by U.S. corporations and on the foreign and domestic taxes which they pay. This material is derived from three tax return forms: (1) Form 1120 "U.S. Corporation Income Tax Returns," (2) Form 1118 "Statement in Support of Credit Claimed by Domestic Corporation for Taxes Paid or Accrued to Foreign Countries or Possessions of the United States" and (3) Form 2952, "Information Return by a Domestic Corporation with Respect to Controlled Foreign Corporations." The IRS published much of this material for the first time in 1969 as a Supplemental Report on Foreign Income and Taxes reported on Corporation Income Tax Returns covering the 1961/2 accounting period. A second supplemental report to cover the 1964 period and with summaries for 1965 and 1966 is now in preparation. Apart from the long delay in publication and the infrequency of coverage, the reports have a number of deficiencies for the student of foreign investment and taxation. These shortcomings might be met in some cases by a more detailed presentation of the material and in others by adjustments to the information requested on the tax returns themselves. The following suggestions are presented as indicative of needed improvements rather than as an exhaustive catalog thereof:

1. Certain balance sheet data should be requested for foreign investment in the branch form as it is for the controlled foreign corporation. This might be limited to physical assets (both at original cost and present undepreciated value). Since these foreign branches must produce such data for purposes of foreign taxes, it should be possible for the IRS to obtain it. At the present time, the tax returns are deficient in providing this minimal data on the asset position of this important component of U.S. business abroad.
2. All data shown in the supplementary reports should be shown by country where taxes were paid. The forthcoming report for the 1964–66 accounting years does not show the material in as much detail in this respect as did the earlier report for 1962. In particular, the separate data for Western Hemisphere trade corporations and for controlled foreign corporations should be presented on a country-where-taxes-paid basis.
3. Foreign taxes paid and credited should be subdivided into profits taxes and withholding taxes and shown as such in the tables.
4. Footnotes should clearly specify and define the magnitudes shown. Thus it should be made clear in all cases whether profits, dividends, and other income items are net of foreign taxes or whether they are grossed up and if so by what foreign taxes and by how much.
5. The distribution of foreign income and taxes paid etc., by size of total assets of the U.S. parent corporation (e.g. as in table 14 of the supplementary report for 1964) is inadequate. The breakdown is not advanced beyond the $250 million dollars size class, although the vast bulk of foreign income accrues to corporations in size classes above this level. In other cases, the breakdown is even less adequate with asset size classes of $100 million or even $50 million being the upper limit.
6. It would be helpful to request and publish the same degree of detail for the controlled foreign corporation as for the domestic U.S. corporation with respect to both income statements and balance sheet data. In particular, it is desirable to know their assets in total and by component, their debt position as well as gross receipts so that profit margins may be calculated.
7. At present the industrial classification for foreign income and taxes appears to be based on the industry to which the parent company belongs. Classification according to the nature of the foreign affiliate's activity would provide useful additional information.

Survey of Current Business

Annual estimates are made by the Office of Business Economics in the Department of Commerce and published in the "Survey of Current Business" of U.S. direct investments abroad. These statistics include capital outflows and income inflows as they appear in the balance of payments as well as net earnings (the U.S. share in profits of controlled foreign corporations and foreign branch profits after payment of foreign profits taxes) and reinvested earnings (U.S. owners share in the reinvested earnings of foreign corporations). In addition estimates are made of the book value of U.S. direct investment abroad which essentially represents a cumulation of additions to such U.S.-owned assets via capital outflows and rein-

vestments. The material is broken down by region, country, and industries. The latter corresponds to a 1-digit SIC classification in most cases but for manufacturing some series are presented in 2-digit detail. The annual estimates made for balance-of-payments pruposes are blown up from a sample of about 1,000 companies reporting quarterly on their transactions with foreign affiliates. In addition, comprehensive benchmark surveys have been made for the years 1950, 1957, and most recently for 1966, results of which are currently in process of publication. Additional useful information is published annually on plant and equipment expenditures (actual and projected) of foreign affiliates and sources and uses of funds. Trading transactions of such affiliates showing imports from and exports to the U.S. as well as sales abroad have also been published for some years but not recently. The following suggestions for improvement from the point of view of the student of foreign investment might be noted:

1. The balance-of-payments data on income received from U.S. direct investment abroad includes all branch profits (after foreign tax), whether reinvested abroad or not. Such reinvested branch earnings are then entered as offsetting capital outflow. It would be helpful to show what is the magnitude of these reinvested branch earnings which now are obscured by inclusion with the capital outflow.

2. Earnings figures should be separated into net earnings of foreign corporations and that of foreign branches.

3. The regional and country breakdowns are inadequate in some instances. For instance, "other Western Hemisphere" accounted for $2.5 billion of investment in 1970 yet there is no country breakdown shown. Similarly, it might be helpful to show a few of the major countries included under the "Middle East" classification.

4. It would be helpful to show (perhaps in a separate note) the relationship of the statistics as currently presented, which are net of foreign taxes, to gross figures which include the foreign tax.

5. Comparison of rates of return on U.S. direct investments abroad with those on manufacturing in the United States are shown annually in graphical form as computed by the First National City Bank of New York. These estimates should be made by the OBE itself and presented in tabular form with careful explanation of their derivation. Moreover, returns should be shown for domestic investment and foreign investment both gross of all taxes, net of foreign taxes, and net of both foreign and domestic taxes. This is an important aspect of the "national" rather than "private" profitability of foreign investment about which more information should be made available.

6. The OBE should make a study of the rather large apparent discrepancies between their data and that presented in the "Statistics of Income" and explanations for these differences should be discussed in the "Survey of Current Business," including the extent they arise from differences of timing, definition, and so forth.

7. Statistics showing sales of foreign affiliates abroad (in the country of investment and to third countries) and to the United States as well as their transactions with U.S. parent companies should be published on a more regular basis. There seems to be a lag of several years before this data becomes available.

8. An attempt should be made to request information so that the relationships between (*a*) total sales of U.S. affiliates, (*b*) export sales from the U.S. parent to the subsidiary, (*c*) other export sales of the U.S. parent, and (*d*) similar exports of U.S. corporations without investments abroad, may be examined over a period of years for the same subsidiaries. This would help shed some light on the relationship between sales of foreign affiliates and U.S. exports of certain major products.

THE SUBSIDY ASPECTS OF A "BUY AMERICAN" POLICY IN GOVERNMENT PURCHASING

By J. David Richardson*

Summary and Conclusions

"Buy American" policy refers to the systematic practice of discriminating against foreign suppliers and in favor of domestic suppliers in U.S. government (Federal, State, and local) purchasing. The policy can be broken down basically into two practices. Statutory "price favoritism" lays down a set of price differentials for government purchasing agents to use in determining whether a foreign or domestic source of supply is preferable. It is only when the domestic price exceeds the foreign price by more than the differential that the agent can turn to imports. "General favoritism," by comparison, is ill-defined, ranging from "unofficial policy to discourage use of foreign goods," through selective and single-tender bidding schemes, through residence requirements, technical and financial specifications, foreign-content ceilings on successful bids, and ultimately to a simple ban on foreign purchases of any kind.

The goals of "Buy American" policy are varied, and have assumed different relative importance during the history of the policy. The principal goals have been subsidizing domestic producers, stimulating employment, and improving the balance of trade.

Regardless of the goal of "Buy American" policy, however, and regardless of whether the policy takes the form of "price favoritism" or "general favoritism," the central conclusion of the analysis of this study is that the policy is always in part self-defeating and may under some circumstances be perverse in its effects. The reason is that "Buy American" policy is not applied across all sectors of the U.S. economy, but is directed only to the Government sector. When domestically produced and foreign commodities are at all competitive (substitutable in consumption or use), the same policy which discriminates against foreign suppliers in the Government sector discriminates in favor of foreign suppliers in the private sector. The mechanism underlying this conclusion is that decreased purchases of imports and increased purchases of domestic goods by the Government sector tends to lower import prices and raise domestic prices, leading the private sector to substitute away from domestic suppliers and toward imports. The upshot is that economywide imports are discouraged less than Government imports alone, and if incomes of domestic producers are subsidized at all, the extent of subsidization is less than would be indicated by focusing on Government purchases alone.

In fact, the possibility that "Buy American" policy actually reduces the incomes of domestic producers is shown to exist. This unusual case, in which "Buy American" policy is actually a negative subsidy,

*Assistant professor of economics, University of Wisconsin. This paper has benefited materially from discussions with Robert E. Baldwin, and is an expansion of an earlier collaborative effort (2). Responsibility for remaining errors, however, is of course mine.

occurs when the shift from foreign to domestic suppliers in the Government sector is outweighed by the opposite shift in the private sector. It depends on the assumption that Government purchasing agents are less sensitive than private economic units to the opportunities of substituting imports for domestically produced goods. The assumption is of course consistent both with the idea of "general favoritism" under "Buy American," and with the observation that Government must be most responsive to its constituents, who are domestic.

By contrast, when imported and domestically produced goods are for all purposes identical (e.g., a Chevrolet Vega produced in Quebec and one produced in Ohio), there can be no difference between the the Government and the private sector in their view of the substitutability of the goods. They are perfect substitutes. Although the Government can still discriminate against foreign suppliers via "Buy American" policy, it can be shown that the policy in general has absolutely no effects in the aggregate, either on economy-wide imports, prices, or the incomes of domestic producers. The only exception to this generalization occurs for both "general favoritism" and "price favoritism" when the size of Government demand alone exceeds available domestic supplies.

The conclusions of the analysis must be modified to some degree when attention is given to a number of possible extensions: including the effects of "Buy American" policy on aggregate private disposable income; including the effects on resource allocation, especially as it influences exports; and allowing for the possibility of noncompetitive market organization, unemployment, and inflexible prices.

Because of uncertainty about the size and direction of these secondary effects, caused in part by the uncertainty about the size and direction of the primary effects of "Buy American," a case can be made that the policy is inferior to others which have the same goals. Even without these uncertainties, it is suggested that "Buy American" is a distinctly "second best" policy.

Finally, some effort is made to assess the quantitative impact of "Buy American" policy on imports and domestic incomes for the year 1963. It is shown that, depending on the commodity group under consideration, Government imports in the absence of "Buy American" policy would have been 2 to 25 times as large as they actually were. Yet economywide imports would have increased as a result only $76 to $110 million, representing one-half a percent or less of total U.S. imports in 1963. Moreover, the subsidy effect of the policy is estimated to have ranged from a small stimulus to domestic incomes of around $1 million to a possible negative subsidy of several hundred million dollars, reflecting the unusual case in which "Buy American" policy actually reduces the incomes of domestic producers.

These quantitative estimates were computed for what was believed to be a reasonable set of assumptions. Among the most important in terms of modifying the results, however, was that the budgets of Government branches and agencies were not directly affected by the policy. That is, no case for larger budgets or for budget overruns was assumed to be made on the grounds of having to pay more for domestic suppliers under "Buy American" policy. To the extent that in fact larger budgets and budget overruns are defended by reference to "Buy American" policy, the subsidy effects of the policy are much more likely to be positive; that is, favorable to domestic incomes. To

this extent also, however, the public pays a price. A budgetary cost is introduced, taking the form of higher current taxes or a higher rate of increase in Government debt.

"Buy American" policy refers to the systematic practice of discriminating against foreign suppliers and in favor of domestic suppliers in U.S. Government (Federal, State, and local) purchasing. This type of discrimination, while almost universally employed by all governments, has a long history in the United States. It has been especially characteristic of U.S. military procurement since the mid-nineteenth century. And the United States, at least on a Federal level, has probably been more explicit than any other country in legislatively outlining the forms and degrees of discrimination.

The subsidy aspect of "Buy American" policy is indirect, arising from Government purchases of goods and services from domestic producers above market (world) price. Thus it is an example of what the Joint Economic Committee subsidy staff study calls a "purchase subsidy," and classifies under the heading of "fiscal subsidies." In contrast to other subsidies, no direct cash transfers, tax remissions, low-cost loans, or other direct forms of assistance are involved.

I. The Policy [1]

The motivation for "Buy American" policy has varied over time, with different degrees of several objectives. Its early purpose in U.S. military purchasing seems to have been to foster the economic growth of domestic armaments industries and therefore to promote a militarily self-sufficient country. The Buy American Act of 1933, however, was a product of the depression and was chiefly designed to increase domestic employment and to raise the incomes of domestic producers. More recently, in the 1960's, the tightening of the provisions of the basic Buy American Act (especially by the Department of Defense) has been defended mainly on balance-of-trade and balance-of-payments lines. Finally, implicit to some extent in Federal "Buy American" policy, but probably most prominent in State and local "Buy American" policies, is the feeling that it would be unpatriotic for a representative governing body not to support those whom it represents by purchasing internally.

Specific "Buy American" Policy: Price Favoritism

At least at the Federal level, the United States is almost alone in systematically spelling out a set of price differentials for Government purchasing agents to use in determining whether a foreign or domestic source of supply is preferable. It is only when the domestic price exceeds the foreign price by more than the differential that the agent can turn to imports. This policy will be referred to throughout this paper as "price favoritism."

The specific differential implied by the Buy American Act of 1933 was unclear. But a particular figure was quickly established by the Defense Department and generally followed by all agencies until 1954.

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[1] The best nongovernmental sources for both a history and description of the program are (1), (4), (5), (7), (8). (9), and (10). Most of the descriptive material in this section is drawn from these sources.

This differential was 25 percent of the delivered, tariff-inclusive price of the imported product. An Executive order of 1954 reduced the stringency of this differential, however, establishing 6 percent of the landed, tariff-inclusive price as a minimum differential. The order was modified a year later to allow a 12-percent differential when the domestic supplier in question was a small business or a firm in a depressed area. The Department of Defense in 1962, however, took advantage of the discretion granted by the "minimum" provision, and raised the differential to 50 percent, although the 50 percent referred to the landed tariff-exclusive price.

The Executive order of 1954 had also clarified the definition of an imported good: a good was considered to be of foreign origin whenever 50 percent or more of the total materials cost of such goods originated outside the United States.[2]

Presently the statutory price differentials can be ignored only in exceptional circumstances, such as in cases which conflict with the "national interest" (for example, petroleum imports are not subject to "Buy American"). And both Canada and Panama have sought and obtained exceptions for purchases by certain U.S. agencies. Moreover, all Government purchases for use abroad were excepted from the Buy American Act and the Executive order of 1954. However, this exception disappeared in 1960 when the Defense Department introduced a 25-percent preference in favor of U.S. producers of goods for use abroad. In 1962 this overseas—use differential was raised to 50 percent by the Defense Department and in 1963 it was extended to all Federal agencies except the Agency for International Development.

Specific "Buy American" Policy: General Favoritism [3]

A much more prevalent form of discrimination has nothing to do with prices. It ranges from tacit admission on the part of governments that "unofficial policy is to discourage use of foreign goods," through selective and single-tender bidding schemes, through residence requirement, technical and financial specifications, and foreign-content ceilings on successful bids, and ultimately to a simple ban on foreign purchases of any kind. This policy will be referred to throughout this paper as "general favoritism."

The U.S. Federal Government, in administering Government procurement, tends to favor public tender bidding schemes, and public disclosure of successful bids. It also tends to rely less on administrative discretion than on explicit procedures, often embodied in legislation. For this reason, it is probably less guilty of the examples of general favoritism given above than are foreign governments and U. S. State and local authorities.[4] Yet even on the Federal level, these practices are widespread. And it must be admitted that administrators and legislators are more sensitive to domestic interest groups which swing votes than they are to foreign interest groups who do not.

It is quite likely that general favoritism of these sorts is a more potent form of discrimination than price favoritism. And among its other effects, general favoritism undoubtedly reduces the purchas-

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[2] [9, p. 98.]

[3] The best reference on the subject of general favoritism is (1). See also (10).

[4] Useful compiations of State "Buy American" policies are found in (4), (7), and in (11). (1) and (10) discusses foreign procurement policies, which tend to be of the general-favoritism type.

ing agent's responsiveness to the price of foreign goods. It may also make foreign goods appear less substitutable for domestic goods than they appear to the private sector.

In what follows, we will consider both discrimination on the basis of price (price favortism) and the more informal discrimination through other means (general favoritism).

II. Analysis

The central conclusion of the analysis which follows is striking: "Buy American" policy is always at least in part self-defeating, whether it is designed to stimulate employment, to serve as a subsidy to domestic suppliers, or to aid the balance of trade. The reason is that "Buy American" policy is not applied across all sectors of the U.S. economy, but is directed only to the Government sector. Given any substitutability at all between domestically produced and foreign commodities, the same policy which discriminates against foreign suppliers in the Government sector discriminates in favor of foreign suppliers in the private sector. In the aggregate, for the country as a whole, "Buy American" policy can potentially have opposite effects to those which are desired and which presumably do take place in the Government sector alone.

This conclusion will become clearer below, where the effects of "Buy American" policy are outlined first for the polar case in which domestically produced and imported goods are identical in every respect; that is, they are perfect substitutes for each other. Considerable space is devoted to this polar case, since its conclusions remain qualitatively valid for the more realistic case in which domestically produced and imported goods are imperfectly substitutable. The following section discusses this more realistic case, and even suggests the possibility that "Buy American" policy may not only be self-defeating, but may in some cases actually tax domestic producers. The analysis of "Buy American" policy is extended in the last section by considering the existence of intermediate goods, noncompetitive market organization, and general unemployment. Some closing remarks suggest that "Buy American" policy is a distinctly "second best" policy in the sense that other policies could achieve the same results with lower social cost.

The Case of Perfect Substitutability [5]

When imported goods are highly substitutable for domestically produced goods, and competitive conditions prevail, their prices will tend to converge. Any wide divergence would lead to an almost universal preference for the goods whose price is lower, since their other characteristics are very similar. If the goods are identical in every way, then their prices will necessarily be equal. Under these conditions, imports of a commodity take place only when the domestic supply is insufficient to meet the total demand. Thus imports would be equal to the excess demand for the good over domestic supply.

Let us now impose a "Buy American" policy. Initially, because it is easier to work with, let us assume that the policy is one of general

[5] The following two sections and app. A of this paper are based on a similar discussion in (2). App. A of the present paper furnishes a graphical exposition of the material in the following two sections.

(nonprice) favoritism, and that discrimination is total. That is, imports by the Government are banned.

The important conclusion from this case is that under the most likely set of assumptions, absolutely nothing will change as a result of the discriminatory policy—neither total imports, nor income of domestic producers, nor prices, nor total Government expenditure will be affected. The explanation for this paradoxical conclusion highlights an important feature of Government discrimination in purchasing even under much weaker assumptions than those of identical foreign and domestic goods: The application of this policy always produces exactly opposite results in the private sector to those it produces for the Government. Specifically, for imports, although Government imports fall to zero, the private sector's imports rise. To see this, consider the implications of the assumption of identical goods and its corollary that prices of imports and domestically produced goods cannot diverge. The effort by the Government to ban Government imports tends to bid down the price of imports, as the supplies formerly bought by the Government are thrust onto the private market. At the same time, the price of domestic substitutes will tend to be bid up as the Government shifts entirely to domestic suppliers in its purchasing. These price movements lead the private sector to exactly the opposite changes of those made by government—the private sector will substitute imports for domestic goods, and will do so to exactly the extent necessary to restore equality between the two prices. In fact, under these assumptions, the Government succeeds only in bidding away domestically produced goods from the private sector, and stimulating the private sector to increase its purchases of imports by exactly the same amount as the Government reduces its own purchases. The final result is that nothing happens to total imports, or to total expenditure on domestic goods or to prices. Because prices do not change, Government expenditure remains the same, although its distribution is shifted toward domestic suppliers. Thus there is no adverse budget effect of the policy, just as there is no subsidy or import effect.

There is, however, one case in which these conclusions do not follow.[6] In particular, if at the price ruling prior to the ban on Government imports, total Government demand exceeds total domestic supply, then there are effects on both imports, price, and the income of domestic producers of a government ban on its own imports. In this case, the additional Government demand for domestically produced goods cannot be satisfied by bidding them away from the private sector at an unchanged price—the private sector does not purchase enough domestically produced goods to make this possible. Thus the additional Government demand can only be satisfied by an expansion of domestic supply, induced by a rise in the price of domestically produced goods. Total income of domestic producers will in this case rise because of the expansionary effect of the policy on both domestic price and quantity produced. In this case there is some subsidy effect.

Total imports will in this case fall, since the former amount of Government imports must exceed the private sector's former purchases of domestic goods under these assumptions. At the old prices, the Government's ban effectively generates excess supply of imports to the private sector, which can only be absorbed when the import price falls.

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[6] This special case is demonstrated graphically in app. A.

Total economywide imports will fall since the lower import price discourages some foreign suppliers. It should be pointed out, however, that the total imports still fall by less than the amount by which Government imports fall. There is still an offsetting effect in the private sector of the market.

Finally, if Government demand is relatively unresponsive to price, Government expenditure as a result of this policy will increase, thus implying either an additional tax burden or an additional debt burden from the "Buy American" policy.

The improbability of this special case in which "Buy American" policy is at all successful for a world of perfect substitutes is worth noticing. Government demand must exceed domestic supply, implying either that the Government dominates the private sector as a purchaser or that domestic supplies are very small. Although this would be true for a number of narrowly defined commodity classes, these classes would be a distinct minority at any level of commodity aggregation.

Now let us assume that the discriminatory Government purchasing policy takes the form of granting a statutory price preference (price favoritism) to domestic producers. Imports in this case are not entirely banned, but our conclusions are very similar to those for the more extreme policy. In particular, the same rule applies in determining whether or not the price preference policy will be to any degree successful: if total Government demand falls short of total domestic supply at the price ruling prior to discrimination, the policy will have no effects on any aggregate quantity or price. It is only when Government demand exceeds total domestic supply at the nondiscrimination price that the policy will reduce imports and the price of imports, and raise the price and output of domestic goods. Even then, however, the total income of domestic producers rises by less than the additional Government expenditure on domestically produced goods. And the policy reduces total imports to a smaller degree than it reduces Government imports. So in both its subsidy role and balance-of-trade role, the effectiveness of "Buy American" policy will be overstated if policymakers do not take into account the reverse incentives given to the private sector to shift toward imports and away from domestic production.

That the "Buy American" policy is necessarily undermined by focusing on only one sector of the economy can be made clear by an analogy: it makes no difference at all to the overall wheat market if one buyer is told that he cannot buy wheat from Kansas. The Kansas wheat would be sold anyway—to some other buyer—and there will be no (or very small) price or quantity adjustments of any kind. In particular, purchases of Kansas wheat in the market taken as a whole will not decline, nor will income of non-Kansas wheat farmers grow. What could cause these changes to occur, however, would be a policy which instructed all buyers in the wheat market to cease or reduce purchases of Kansas wheat. In the case of "Buy American" policy, what would lead to both the expected subsidy and balance-of-trade effects is a policy which affected all buyers, for example, the extension of the price preference aspect of "Buy American" to the entire economy. (This statement, of course, presupposes the desireability of the policy as a means of reaching its stated goals. This presupposition is criticized below.)

The Case of Imperfect Substitutability [7]

Considerable attention has been devoted to the analysis of the extreme case of identical imports and domestically produced goods because the results there hold to a smaller degree in the realistic case in which imports and domestically produced goods are only imperfectly substitutable. The term "imperfectly substitutable" describes a situation simply where an imported commodity is not exactly identical to a domestically produced commodity, but shares enough of its attributes to be considered a competitor. An imported diesel engine has somewhat different dimensions and performance characteristics than one which is domestically produced. Yet for a large number of intended uses, either might be purchased by a buyer of diesel engines. By this description, imperfect substitutability is the rule realistically, but a "Buy American" policy still suffers from the offsetting incentives introduced in the private sector of the economy.

To demonstrate these offsetting incentives, consider the case of general favoritism. As the Government shifts its purchases away from foreign suppliers toward domestic suppliers, the most reasonable expectation is that the price of imports will fall and the price of the domestic goods will be bid up. (Since the goods are no longer identical, there is no necessity for their prices to remain equal.) However, since the imports and domestically produced goods are still in some measure substitutes, the price movements will lead the private sector to shift its purchases away from domestic suppliers and toward foreign suppliers. Thus, any intended reduction in imports and the provision of a subsidy to domestic producers are partially frustrated by changes in the private sector of the economy.

Furthermore, the interesting possibility arises in the case of imperfect substitutability that a policy of general favoritism, while reducing imports, may actually reduce the income of domestic producers. In other words, the overall subsidy effect of "Buy American" policy could in fact be negative. The quantitative results of part III, moreover, demonstrate that this seemingly strange possibility is not at all unlikely. It arises when the private sector's perceived substitutability of imported for domestic goods is stronger than that of the Government. And it has already been argued in part I that a policy of general favoritism does just this, reducing simultaneously the Government purchasing agent's responsiveness to price, and his perception that the imported good can in fact take the place of the domestically produced good. Because of discrimination, the government purchasing agent is more responsive to the political satisfaction of the domestic interests that the government represents, and less responsive to narrowly economic criteria which determine whether given actions involve minimum cost.

The mechanism whereby "Buy American" policy functions as a negative subsidy is this: "Buy American" policy induces the government to reduce purchases of imported goods and replace them with purchases of domestic goods. To the extent that the Government reduces purchases of imported goods, the supply of these imported goods to the private sector is increased. Briefly, the government switches out of imports and into domestic purchases for policy reasons; the private sector switches out of domestic purchases and

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[7] An algebraic model describing an economy under these assumptions is outlined in app. B.

into imports for economic reasons. If the private sector finds the two types of goods much more substitutable than the government, it is entirely possible that the government's switch *toward* domestic purchases will not be as large as the private sector's switch *away*. In this case, total government and private demand for domestically produced goods will fall, reducing the price received by domestic producers, and their incomes as well. On the other hand, if the difference between the government's and the private sector's perceived substitutability of the two types of goods is not large, the government's switch toward domestic producers may exceed the private sector's switch away. Total government and private demand for domestically produced goods will rise, raising the price received by domestic producers and their incomes. In this more intuitively appealing case, "Buy American" policy does function as a subsidy.

In the unusual case where the subsidy effect of "Buy American" is negative, it is probable in the short run that government expenditure actually falls as the degree of general favoritism rises. Since both prices fall, and since quantity demanded by the Government is relatively unresponsive to price, total expenditure will decline. This result may even occur in the more intuitively appealing case where domestic prices are bid up by "Buy American" policy. Since the goods are not identical, the Government will presumably not replace every unit of the imported good with a unit of the domestic substitute, and the reduced Government import expenditure may dominate the increased domestic expenditure. In either event, the budgetary cost of the program to the taxpayer is small or negative.

On the other hand, if the policy is sufficiently successful at bidding up domestic prices and in serving as a subsidy, government expenditure will rise, inflicting some budgetary cost to the taxpayer in the form of higher present taxes or higher future taxes to finance the larger present debt. This cost will presumably be more prominent in the longer run, over a period of several years, since government expenditure is then less constrained by any one year's budget. There is thus a not unexpected positive relation between "Buy American's" success as a subsidy and its cost to the taxpayer. Quantitatively, the results of part III of this paper suggest that just as "Buy American" frequently has negative effects on domestic incomes, it frequently *reduces* government expenditure as the degree of discrimination rises. Although these quantitative results are conditional on a short-run assumption that the government can exceed budgeted expenditure only if prices change, they do suggest the possibility that "Buy American" does *not* in fact impose any additional tax or debt burden on the private sector.

The price favoritism form of "Buy American" policy is, in a world of imperfect substitutability, subject to the same offsets and possible reversals in its subsidy effects as is general favoritism. To the extent that the price differential introduced in favor of domestic suppliers does in fact divert Government purchasing away from imports, there are inducements for the private sector to buy more imports and fewer domestically produced goods. Import and subsidy effects are frustrated again. There is even the same possibility that the price of domestic goods may fall if the degree of substitutability is sufficiently less for the Government than for the private sector. Imports would be reduced, but the subsidy effect would actually be negative.

Price favoritism, however, suffers one further drawback when imports and domestically produced goods are imperfect substitutes. There is no guarantee that it will in fact divert Government purchases in the desired way. The implementation of a price preference of 6 percent for domestic producers would have no effect on any variable in the system if all domestic prices exceeded import prices by more than 6 percent. And since the competing commodities are not identical the existence of such a price differential is indeed possible. On the other hand, if no domestic price exceeded the import price by 6 percent or more, then the price favoritism policy would essentially amount to a ban on Government imports. No imports would be possible. Thus the effects of a price favoritism policy are very difficult to assess, requiring in the world of imperfect substitutes not only that price-responsiveness parameters be known, but actually all the price levels in the system as well. It is these characteristics which invalidate the analogy which is sometimes drawn between price favoritism and a tariff.[8]

Secondary Impacts of "Buy American" Policy

The analysis up to this point has been based upon a fairly simple supply-and-demand framework, in which supply and demand have been dependent only on price. If a more sophisticated framework is introduced, there are some further implications for the import and subsidy effects of "Buy American" policy.

First, to the extent that the subsidy effect of "Buy American" policy materializes, and domestic incomes are raised, the import effect of the policy will be less successful. Higher domestic incomes generate larger imports, other things being equal, and these offset whatever initially favorable import effects are directly produced by the policy. By contrast, in the unusual case where "Buy American" policy actually reduces domestic incomes, imports go down even further than they would have as a direct result of the policy. The balance-of-trade effects are strengthened at the expense of the subsidy goal.

Second, in a similar vein, if output of domestic goods is actually stimulated by "Buy American" policy, imports of intermediate inputs into domestic production processes may also be stimulated.[9] This again serves as an offset to any favorable direct import effects of the policy. However, if domestic output is not stimulated imports are reduced even further than they would have been under a positive subsidy effect of the policy. Conversely, of course, to the extent that the reduced imports had a domestic-goods content, both the incomes of some domestic producers and U.S. exports suffer to some degree.

Third, it is possible that if the subsidy effect of the policy is positive, the expansion of production in the import-competing sector will draw resources out of the export sector.[10] Since exports are reduced, an offset to the favorable balance-of-trade effects of the policy is introduced.

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[8] [9, pp. 101–02] and [4, pp. 13–14] incorrectly draw this analogy. An ad valorem tariff rotates the demand curve for imports counterclockwise through its horizontal intercept; a specific tariff shifts the whole curve down. By contrast, a price-favoritism policy such as "Buy American" does not alter the demand curve for imports at import prices below the domestic price less the differential. For import prices higher than this, demands are zero. Thus price favoritism produces a kink and a horizontal segment to the demand curve for imports.

[9] [1, p. 71n]

[10] This is the key point raised by Fieleke [4], who actually tries to measure the overall balance-of-trade effects of "Buy American" policy. Part III of this paper attempts to measure only the import effects.

Fourth, both the import goal and the subsidy goal of "Buy American" policy may be aided by the definition of an import as a good for which materials of foreign origin make up 50 percent or more of value. Manufacturers and distributors who come close to qualifying as domestic suppliers have an incentive to substitute domestic inputs for foreign inputs and thereby creep below the 50 percent threshold.[11] This substitution has favorable effects both on imports and on the incomes of domestic producers.

Fifth, noncompetitive market organization may reduce or eliminate the reflection of "Buy American" policy in price changes for imports and domestic goods. The initial increased demand for domestic goods by the Government may lead to a simple expansion in the rate of domestic capacity utilization, with no increase (or decrease) in domestic price. Furthermore, the response of foreign suppliers to their losses in the Government sector may not be to try to increase sales to the private sector: head-to-head competition is to be avoided, and import prices may be maintained, rather than reduced. If neither domestic prices nor import prices change, however, there are no offsetting effects of "Buy American" in the private sector. The private sector will not have any motivation to switch into imports and away from domestically produced goods. The policy is then successful in the aggregate to exactly the same degree that it is successful in the Government sector.

Sixth, in a point similar to the previous one, if wages and prices are inflexible in a downward direction, the economy will potentially be characterized by some unemployment. But with unemployment, there may again be no tendency for domestic prices to rise as a result of "Buy American" policy. And similarly, since wages and prices are inflexible downward, there may be no tendency for import prices to fall. There would again be no offsetting effects in the private sector, and "Buy American" policy would be more successful at attaining both its subsidy and balance-of-trade goals.

The "Second-Best" Aspects of "Buy American"

Up to this point, the analysis of "Buy American" policy has focused strictly on its effects—on domestic income and production, on domestic price, on imports and import price, and on the size of government expenditure. All things considered, "Buy American" policy was shown to produce at best ambiguous results, given the goals underlying the policy. Some brief remarks are necessary, however, from a somewhat different perspective. Given that one knows the effects of "Buy American" policy and given that they are at least qualitatively the desired effects, is "Buy American" policy an efficient way of attaining any of its explicit or implicit goals? The latter question is from the sphere of normative economics, whereas the discussion up to this point has been from the sphere of positive economics.

Consider the subsidy goal of "Buy American," which is defended at various times in various ways: the United States should subsidize domestic defense production so as to assure supply sources in case of war; the United States should stimulate employment at home; or, simply, the United States owes it to its own producers to help them

[11] [9, p. 102.]

out. Taking each of the subsidy goals at face value,[12] one should ask the question of whether or not on economic grounds it would be more efficient (less costly) to implement either an explicit subsidy to domestic defense production, or an expansionary fiscal or monetary program to stimulate employment, or a program of technical assistance to domestic producers which at the same time assures that inefficient producers are not sheltered by the implicit subsidy. In fact, the answer is in each case yes, on the basis of what is known as the theory of domestic distortions. A simplistic exposition of the theory is that policies which aim directly to accomplish an accepted goal are less costly on economic grounds than those which aim indirectly.[13] These indirect policies are known as second-best policies and always involve some undesirable side effects. In the case of employment, for example, "Buy American" policy may stimulate employment. But it may also potentially allow domestic producers to extort the full statutory price differential from the Government because imports will not be bought at all until the actual price differential exceeds the statutory one.

Similar arguments can be made with reference to the import goal of "Buy American" policy. A balance-of-payments deficit can be corrected with least cost on economic grounds by a direct realinement of exchange rates. The unfavorable potential cost of a large number of domestic producers who produce mainly under Government contract and who are shielded by a "Buy American" policy is thereby avoided.

Finally, these brief comments have taken for granted that the effects of "Buy American" policy are known and operate in the desired direction, But insofar as we have shown earlier that this is not necessarily so, "Buy American" policy might be less efficient than others because of uncertainty as to what its effect will in fact be.

III. Quantitative Effects

The following represents an actual attempt to estimate the quantitative effects of "Buy American" policy for a recent year. The year, 1963, was chosen because data were available by broad commodity breakdown on domestic and imported purchases of the U.S. Federal Government. A measure of the actual 1963 degree of discrimination is generated for each commodity class, and estimated values of total U.S. imports and total gross income of domestic producers are generated (1) for the hypothetical case in which there was no Federal "Buy American" policy, (2) for the hypothetical case in which "Buy American" policy was absolute, that is, Federal Government imports were banned, and (3) for 10 intermediate degrees of discrimination. Only (1) and (2) are reported below, but the intermediate results are available from the author on request.

Appendices B and C outline the algebraic model which underlies not only the estimates reported below, but also the analytic conclusions reached in part II for the case in which imported and domestically

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[12] It is questionable whether the last-mentioned goal should be accepted, since it provides no justification for ignoring the consumer's interest.

[13] The literature is rather complex, (3) and (6) being the best examples. Caution must also be exercised in so far as the cost accounting has to do only with economic magnitudes. There may be *political* costs (or others) involved in a direct approach to a problem which can be avoided if an indirect approach is taken. Tax increases are a direct approach to an inflationary problem caused by excess demand, but have a high political cost. A substantial delay in implementing direct tax policy, due to political factors, might make it inferior by comparison to an indirect method of retarding inflation, such as reducing tariff rates.

produced goods are imperfectly substitutable. It was necessary to specify a number of the parameters of the model a priori in order to obtain the estimates. These prespecified parameters were all price elasticities, that is, measures of the responsiveness of quantity demanded to a price change, and an attempt was made to choose reasonable values for them. Experimentation with more extreme values of these parameters produced very little change in the estimated import effects of "Buy American" policy, but somewhat greater change in the estimated subsidy effects of the policy. The results recorded in the tables below are for what was assumed to be the most reasonable values of the parameters. Other results are available from the author on request.

The actual 1963 degree of discrimination was defined as the percentage reduction in the value of government imports from the hypothetical value of government imports in the absence of any "Buy American" program. Thus a 1963 degree of discrimination of 75 percent implies that government imports in 1963 would have been four times as large as they actually were if no "Buy American" policy had existed. A 95 percent degree of discrimination implies that government imports would have been 20 times as large as they actually were if no "Buy American" policy had existed. This hypothetical value was derived from the assumption that, in the absence of discrimination against foreign suppliers, the government's import-to-domestic-purchase ratio would be about the same as that of the private sector.[14] This assumption is somewhat tenuous if the government's mix of commodities purchased within a broad commodity class differs drastically from that of the private sector. But the procedure at least provided a ball-park estimate of the degree of discrimination in "Buy American" policy. The estimates are recorded below, where 0 would indicate no discrimination and 100 would indicate a total ban on government imports:

Commodity class:	*Degree of discrimination*
Ordnance	95–100
Nondurables	95–100
Lumber, wood, stone, etc	95–100
Metal products	75–85
Nonelectric machinery	65–75
Electric machinery	65–75
Transport equipment	35–45
Instruments, miscellaneous	95–100

By means of a computer simulation procedure described in appendix C, the characteristics of the 1963 economy for the particular estimated degrce of discrimination were used in conjunction with a priori estimates of price elasticities to generate an entire hypothetical history of what the 1963 economy would have been like for different degrees of discrimination. Economy-wide imports for the extremes in this hypothetical history are recorded in table 1 for all U.S. imports of manufactures except petroleum (classified by the Standard Industrial Classification). Petroleum and nonmanufactures are excluded from consideration because "Buy American" policy does not tend to be applied to these commodity groups. Column (4) records the value of total imports of manufactures if there had been no "Buy American" policy, and column (5) records the value of total imports of manufactures if the government had not imported at all. The value of

[14] Baldwin [1, p. 71] makes this assumption in his assessment of the import effects of "Buy American."

domestic production (gross income of domestic producers) is recorded in table 2 for the same extremes in the hypothetical history. Two sets of hypothetical results are recorded for each actual observation. The first assumes short-run (relatively low) price-responsiveness on the part of suppliers and the second assumes long-run (relatively high) price responsiveness.[15]

Consider first the import effects of "Buy American" policy from table 1. From the totals row it can be determined that the discriminatory U.S. procurement policy of 1963 actually saved $76 million dollars of imports under the short-run assumptions (8,169−8,093=76), or $110 million dollars of imports under the long-run assumptions (8,203−8,093). The long-run figure would be appropriate if it were believed that both foreign and domestic suppliers had had sufficient time to adjust to the program of discrimination, and if it was known that there had been no recent substantial changes in the programs' implementation.

Table 1 also demonstrates that there is little to be gained from further discrimination. An outright ban on all government imports of manufactures would reduce total imports only another $36 million in the short run (8,093—8,057), or $54 million in the long run (8,093—8,039). In either case, it is notable that banning the remaining $61 million (from column (3)) of government imports of manufactures does not reduce total imports of manufactures by this full amount. As has been discussed at length above, a policy of discrimination against imports in government purchasing actually discriminates in favor of imports to the private sector by lowering the price of imports.

On the basis of these 1963 estimates, it is clear that the maximum possible reduction in imports—the difference between the long-run no-discrimination and total-ban cases—is $164 million (8,203−8,039). Whether even these maximum import savings are substantial when compared to total U.S. imports of all goods in 1963 of just under $20 billion is questionable. At best, somewhat less than 1 percent of total imports could have been stemmed by the imposition of a complete "Buy American" ban on government imports of manufactures where no such ban existed before.

Turning to the subsidy effects of "Buy American" policy in table 2, several conclusions are notable. From the totals row, it can be seen that the subsidy effect of "Buy American" is actually negative under the short-run supply assumptions. The income of domestic producers is more than ½ billion dollars higher in the absence of "Buy American" policy (417,450) than when government imports are completely banned (416,817). This seemingly strange conclusion was predictable, as argued in the text, as long as the government's price responsiveness and perceived substitutability of imported for domestically produced goods was significantly less than that of the private sector.

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[15] The actual supply elasticities assumed were 2 and 1, respectively, for domestic goods and imports in the short run, and 20 and 10, respectively, for domestic goods and imports in the long run. Neither table 1 nor table 2 considers Department of Defense purchases for use abroad. This exclusion is forced by the inability to get a commodity breakdown on such purchases, although they total over $2 billion.

TABLE 1.—ACTUAL AND HYPOTHETICAL VALUES OF IMPORTS OF MANUFACTURES: 1963

[In millions of dollars]

Commodity group	Actual total imports of manufactures	Actual government imports of manufactures	Total imports of manufactures if no discrimination ($\alpha=0$)		Total imports of manufactures if government imports banned ($\alpha=1$)	
(1)	(2)	(3)	(4)		(5)	
Ordnance	18	2.0	47	52	16	16
Nondurables	3,768	.3	3,769	3,771	3,768	3,768
Lumber, wood, stone, etc	680	.1	680	681	680	680
Metal products	2,059	1.0	2,060	2,062	2,059	2,058
Nonelectric machinery	469	6.0	475	479	466	464
Electric machinery	420	25.0	445	460	407	399
Transport equipment	232	25.0	242	245	215	209
Instruments, miscellaneous	447	1.0	451	454	446	446
Total	8,093	61.0	8,169	8,203	8,057	8,039

TABLE 2.—ACTUAL AND HYPOTHETICAL VALUES OF DOMESTIC PRODUCTION OF MANUFACTURES: 1963

[In millions of dollars]

Community group	Actual total production of manufactures	Actual government domestic purchases of manufactures	Total production of manufactures if no discrimination ($\alpha=0$)		Total production of manufactures if government imports banned ($\alpha=1$)	
(1)	(2)	(3)	(4)		(5)	
Ordnance	6,085	5,298	6,220	6,094	6,080	6,086
Nondurables	191,608	2,004	191,611	191,608	191,607	191,608
Lumber, wood, stone, etc	28,140	104	28,140	28,140	28,140	28,140
Metal products	60,605	166	60,605	60,603	60,605	60,606
Nonelectric machinery	30,650	1,242	30,668	30,647	30,641	30,652
Electric machinery	31,578	5,615	31,659	31,567	31,537	31,584
Transport equipment	55,927	9,294	56,029	55,938	55,743	55,906
Instruments, miscellaneous	12,518	559	12,518	12,513	12,518	12,519
Total	417,111	24,282	417,450,	417,110	416,871,	417,101

The reverse subsidy effects of "Buy American" policy are not maintained under the long-run supply assumptions. There, discrimination in government purchasing raises domestic incomes initially, although not by much: Actual 1963 gross income of domestic producers in the presence of some discrimination (417,111) is only $1 million higher than what it would have been if there had been no discrimination (417,110). Moreover, if discrimination is pressed too far, the income of domestic producers clearly drops: Actual 1963 gross income of domestic producers in the presence of some discrimination (417,111) is also $10 million higher than what it would have been under a total ban on government imports (417,101). The optimality, from a subsidy point of view, of some intermediate degree of discrimination does not hold, however, for any of the individual commodity classifications. No discrimination would achieve maximum incomes for producers of ordnance and transportation equipment. On the other hand, a ban on government imports would achieve maximum incomes for producers of metal products, nonelectric machinery, electric machinery, and instruments.

From these results, it would appear that "Buy American" policy performs very poorly as a subsidy and reduces imports only slightly. If these results are representative (and they would seem to be on the basis of some experimentation), then it would appear to be at least

as likely that "Buy American" policy taxes the value of domestic production as it is that "Buy American" policy is a subsidy.

Appendix A

"Buy American" Policy When Imported and Domestically Produced Goods Are Identical

Under the assumption of identical imported and domestically produced goods, total imports must be equal to the excess of total demand (both of the Government and the private sector) over total domestic supply. Also under this assumption, the price of the imported goods must be identical to the price of the domestic substitute. This is summarized graphically in figure A1, where

D_g=total Government demand for the good (assumed unresponsive to price);
D_g+D_p or D_g+D_p'=total Government and private demand for the good;
S_d=domestic supply of the good;
S_m=supply of imports;
S_d+S_m=total supply.

When D_g+D_p is the appropriate total demand curve, the equilibrium price is determined to be OP. At this price, total demand (OQ) exceeds domestic supply (OM) by the distance MQ. This excess demand is satisfied by imports.

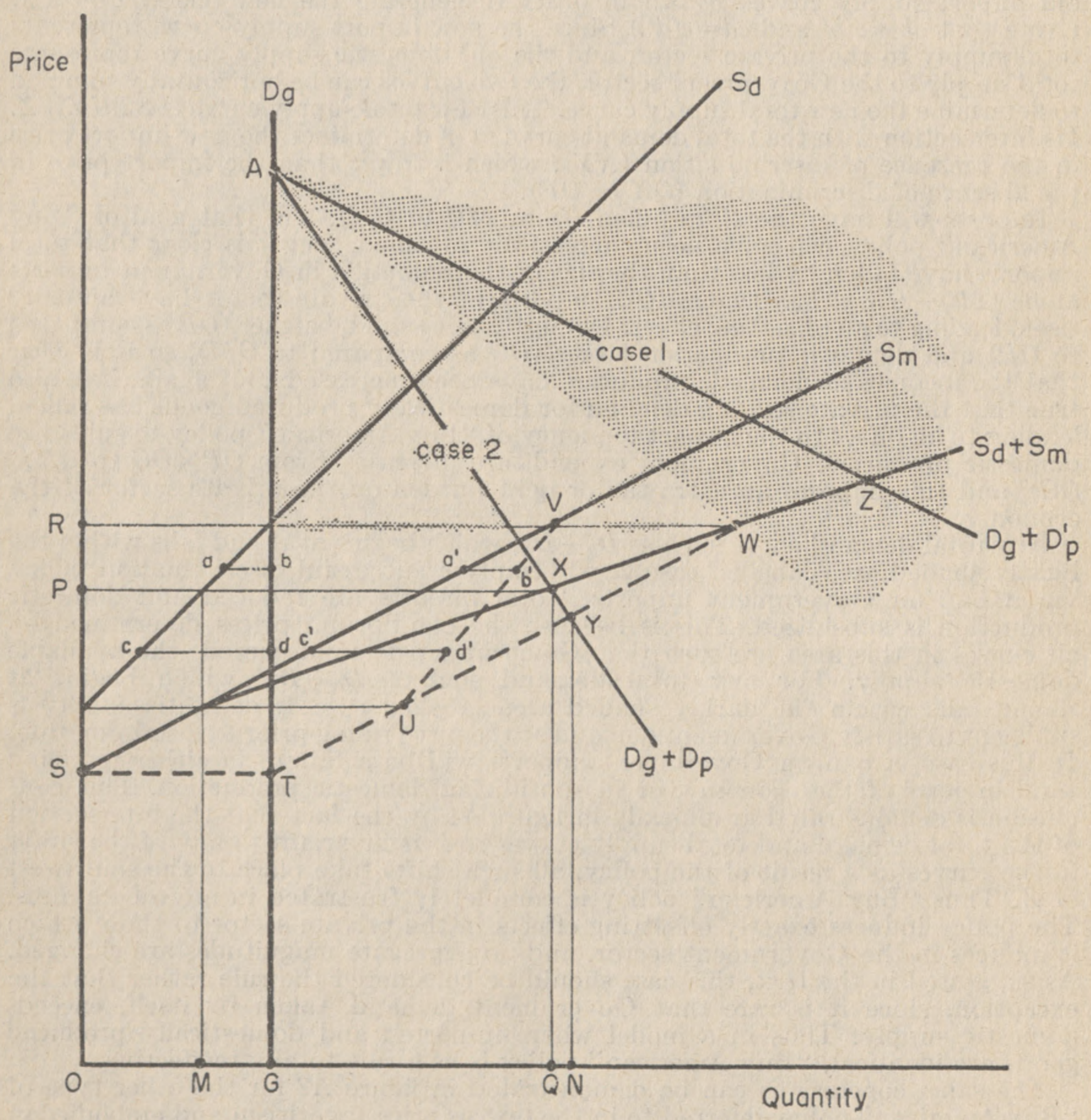

Figure A1.—The effects of a ban on Government imports when domestically produced goods and imports are identical.

Consider "Buy American" policy in the form of "general favoritism" for domestic producers, and in particular, for ease of exposition, consider a total ban on Government imports. Part II of the text concluded that such a policy would in general have no effects on total imports, total income of domestic producers, total Government expenditure, or price. An exception to the general rule arose, however, when domestic supply was insufficient to satisfy Government demand taken by itself at the ruling price. Then total imports would fall, total income of domestic producers and the price of domestic output would rise, and the Government's total expenditure on the good in question would be increased.

Both the rule and the exception can be represented in figure A1. Consider first the exception. Suppose equilibrium before the ban on Government imports is determined by the intersection of the total demand curve D_g+D_p and the total supply curve S_d+S_m at point X. At the ruling price (OP), domestic supply (OM) is insufficient to satisfy total Government demand (OG). When a ban on Government imports is imposed, this characteristic will cause the price of the domestic good to be bid up to the point where, finally, domestic supply is sufficient to meet Government demand, at the price OR. The implication is that at prices below OR the private sector is supplied entirely by imports. To find the import supply (and hence the total supply) to the private sector in the presence of discrimination, we must add to the old import supply curve what the Government would have imported at prices lower than OR. Foregone Government imports are indicated by distances such as ab, cd, and ST, and these must be added horizontally to the old import supply curve (SVS_m) in order to generate the new one ($STUVS_m$). (Note that $ab=a'b'$ and $cd=c'd'$.) Since the new import supply curve represents total supply to the private sector, and the old domestic supply curve represents total supply to the Government sector, the two curves can be horizontally summed to determine the new total supply curve. This new total supply curve is $STUYWZ$. Its intersection with the total demand curve at Y determines the new import price in the presence of discrimination (NY), which is lower than the import price in the absence of discrimination (QX or OP).

Imports will have therefore fallen (from MQ to GN), and that goal of "Buy American" policy will have been successfully attained. Yet it is clear that total imports have fallen by less than the size of the reduction in Government imports alone ($MQ-GN$ is less than MG). Imports of the private sector have actually risén, leading to an offsetting effect. Domestic price will be higher (OR as compared to OP) and domestic production larger (OG as compared to OM), so it is clear that the incomes of domestic producers have been increased. But again, it is also true that the private sector's demand for domestically produced goods has fallen, leading to an offset to the impact tendency of "Buy American" policy to subsidize domestic producers. Government expenditure increases (from $OP\times OG$ to $OR\times OG$), and this imposes an extra tax or debt burden on the private sector of the economy.

Any total demand curve such as D_g+D_p, which begins at A and falls within the lightly shaded area labelled case 2, will imply a successful discrimination policy via a ban on Government imports. Total imports are reduced and domestic production is subsidized. This is because the equilibrium prices determined by all curves in this area are such that Government demand exceeds the available domestic supply. For any total demand such as D_g+D_p', which begins at A and falls within the darkly shaded area labelled case 1, domestic supply is sufficient to satisfy Government demand at the price ruling prior to discrimination. In this case, a ban on Government imports will be a failure in either reducing total imports of the economy, or in subsidizing domestic production. This conclusion is demonstrated graphically in figure A1 by the fact that the intersection of the total demand and total supply curves at Z is invariant to any of the shifts in the curves as a result of the policy, all such shifts take place to the southwest of Z. Thus "Buy American" policy is completely frustrated in any of its aims. The policy induces exactly offsetting effects in the private sector to those which it induces in the Government sector, and no aggregate magnitudes are changed. As suggested in the text, this case should be considered the rule rather that the exception, since it is rare that Government demand, taken by itself, exceeds domestic supply. Thus in a model where imported and domestically produced goods are identical, "Buy American" policy is as a rule totally ineffective.

The same conclusions can be demonstrated in figure A2 for the other type of "Buy American" policy referred to in the text as price favoritism and embodied in all legislation since the Buy American Act of 1933. Consider the exceptional case first in which "Buy American" policy does have its expected effects because Government demand exceeds domestic supply at the ruling price. Before the price preference policy is introduced, suppose equilibrium is determined by the intersection of the total demand curve D_g+D_p and the total supply curve S_d+S_m at

point X. At the ruling price (OP), domestic supply (OM) is insufficient to satisfy total Government demand (OG). Suppose now that the price preference toward domestic suppliers is introduced in Government purchasing. Specifically, unless domestic price exceeds the import price by more than 100 (JI/OI) percent, the Government is prohibited from importing the good. Government demand will obviously be shifted toward domestically produced goods, and this can be depicted by observing that the perceived domestic supply curve facing the Government is shifted down over a portion of the curve by the amount of the preference. The perceived domestic supply curve facing the Government thus shifts from IS_d to $JKLS_d$. Under this policy, the Government will again appropriate all domestic production for itself, and finding it insufficient for its total demand, there will be upward pressure on the price of domestic goods. The private sector will be left entirely dependent on imports, but it will be aided by the fact that all of the Government's former purchases of imports become supply to the private sector. Foregone Government imports are indicated by distances such as ab and cd, and these must be added horizontally to the old import supply curve (SVS_m) to generate the new one ($STUEVS_m$). (Again $ab=a'b'$ and $cd=c'd'$.) Since the new import supply curve represents total supply to the private sector, and the old domestic supply curve represents actual (as opposed to perceived) domestic supply to the Government sector, the two curves can be horizontally summed to determine the new total supply curve. This new total supply curve is $STUYFWZ$. Its intersection with the total demand curve at Y determines the new import price in the presence of discrimination (NY), which is lower than the import price in the absence of discrimination (QX or OP).

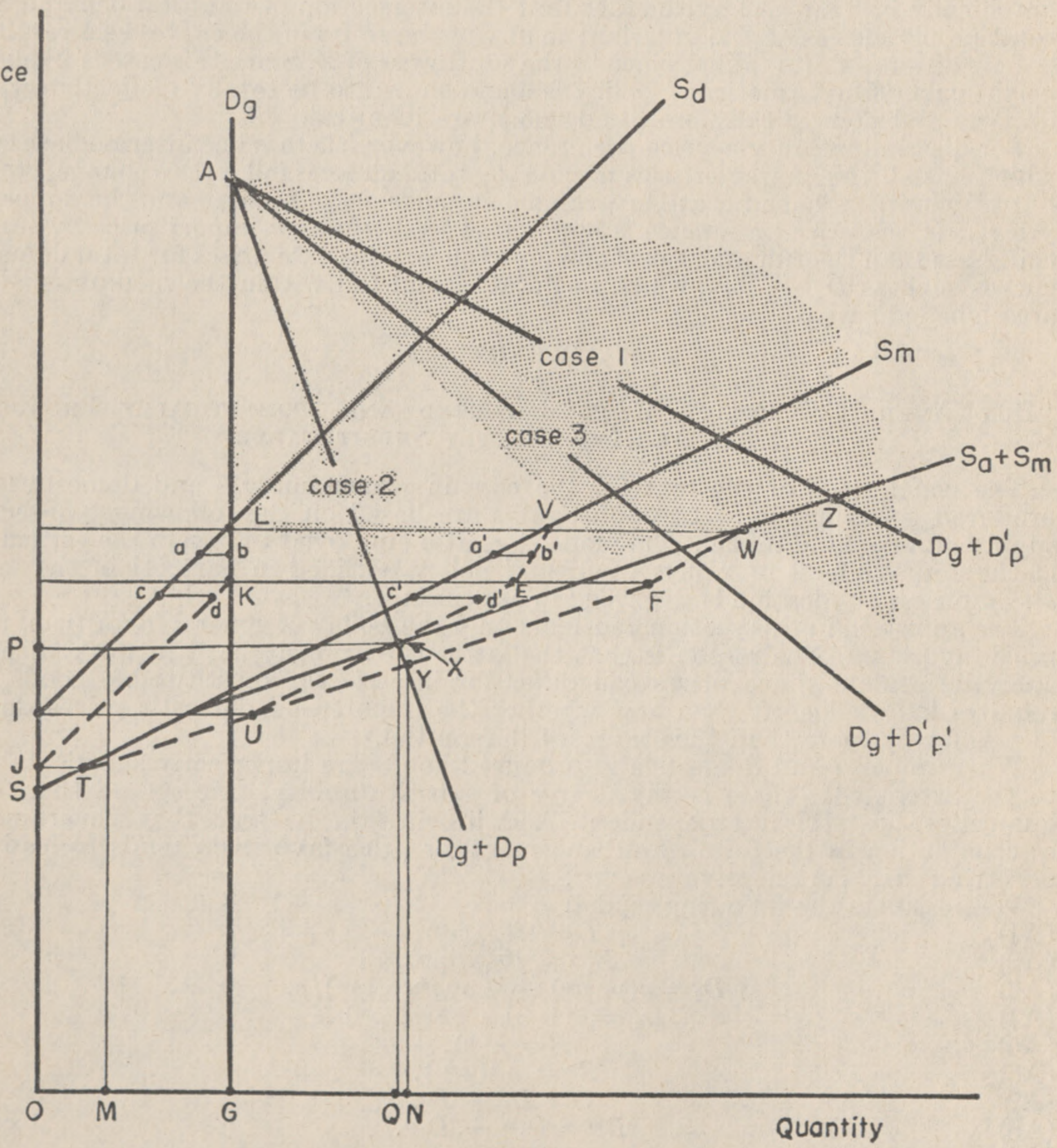

FIGURE A2.—The effects of a price preference granted to domestic producers in Government purchasing when domestically produced goods and imports are identical.

Imports will have therefore fallen (from MQ to GN), but again by less than the reduction in Government imports alone. The Government will also, in contrast to the case of general favoritism, continue to import a certain quantity of goods despite the discrimination. Domestic price will be higher than the new import price by the exact amount of the preference. (If the domestic price were higher than the new import price by more than the preference, the Government would import more and buy less from domestic producers, thus bidding it back again. If the domestic price were higher than the new import price by less than the preference, as long as the Government's demand is not fully satisfied by domestic producers, there will be an incentive for the Government to buy more from domestic producers and less from importers. This will again restore the price differential to the policy differential). Since domestic production also expands (from OM to OG), the income of domestic producers is increased and the subsidy objective is achieved. Government expenditure is again increased, thus imposing an extra tax or debt burden on the private sector of the economy.

Any total demand such as $D_g + D_p$, which begins at A and falls within the lightly shaded area labelled case 2, will imply a successful Government discrimination policy via price preference. Total imports are reduced and domestic production is subsidized. By contrast, for any total demand curve such as $D_g + D_{p'}$, which begins at A and falls within the darkly shaded area labelled case 1, domestic supply is sufficient to satisfy Government demand at the price ruling prior to discrimination. In this case, price preference for domestic producers in government purchasing will be a failure in any aims, whether to reduce total imports of the economy, or to subsidize domestic production. This conclusion is demonstrated graphically in figure A2 by the fact that the intersection of the total demand and total supply curves at Z is invariant to any of the shifts in the curves as a result of policy, all such shifts taking place to the southwest of Z. Since this case is likely to be the rule, "Buy American" policy is again shown to be totally ineffective when imports and domestically-produced goods are identical.

For discrimination via price preference, however, there is one intermediate case which has all the characteristics of case 2—total imports fall, prices change, etc.—but which differs in so far as Government imports do go to zero, and the domestic price after the price preference is imposed exceeds the new import price by something less than the full amount of the preference. This case arises for total demand curves such as $D_g + D_{p''}$, which begin at A and fall within the medium-shaded area labelled case 3.

Appendix B

"Buy American" Policy When Imported and Domestically Produced Goods Are Imperfectly Subsitutable

The conclusions of the text for the case in which imports and domestically-produced goods are imperfect substitutes are based on the following two-sector supply and demand model. The model was also employed to obtain the estimates of the actual effects of "Buy American" policy outlined in part III of the text. Its empirical application is described in appendix C.

The approach in this section considers only the policy of general favoritism, not price favoritism. The reason is that the latter is extremely hard to work with in analytic fashion. (Since prices can differ for imperfectly substitutable goods, it requires knowledge of when and whether the import and domestic prices do in fact differ by more than the statutory differential.)

When imports and domestically-produced goods are imperfectly substitutable, to the extent that there is any degree of substitutability, prices (and therefore quantities) are still interdependent. And it will still be true that government discrimination in the form of either general or price favoritism tends to lead to offsetting effects in the private sector.

We postulate the following model:

(A1) $$D_1 = f(p, p^m),$$

(A2) $$D_1^m = f^m(p, p^m),$$

(A3) $$D_2 = g(p, p^m) + \alpha p^m g^m(p, p^m)/p,$$

(A4) $$D_2^m = (1-\alpha) \cdot g^m(p, p^m)$$

(A5) $$S = h(p),$$

(A6) $$S^m = h^m(p^m),$$

(A7) $$D = D_1 + D_2,$$

(A8) $$D^m = D_1^m + D_2^m,$$

(A9) $$D = S,$$

(A10) $$D^m = S^m,$$

where

D_1, D_1^m = the private sector's (1's) demand for domestically-produced goods and imports, respectively;
D_2, D_2^m = the government's (2's) demand for domestically-produced goods and imports, respectively;
S, S^m = total supplies of domestically-produced goods and imports, respectively;
D, D^m = total demand for domestically-produced goods and imports, respectively;
p, p^m = prices of domestically-produced goods and imports, respectively;
α = a discrimination parameter defined below.

Equations (A1) and (A2) are the private sector's demand functions for the two goods in the system. Since the goods are substitutes, both prices appear in each equation. Equations (A3) and (A4) are the government's demand equations. The term α represents a discrimination parameter for the sort of discrimination described above as "general favoritism". Specifically, in equation (A4) above, if $\alpha = 0$, there is no discrimination in government purchasing. If $\alpha = 1$, government imports are banned and are, consequently, zero. If $\alpha = .50$, discrimination is such as to reduce government imports in the absence of discrimination by one-half. There is also a discrimination effect on equation (A3), where it is assumed that whatever the decline in expenditure on imports because of discrimination ($= \$\alpha p^m g^m(\ )$), it is reapplied to the purchase of domestic substitutes: $\$\alpha p^m g^m(\ )$ will buy $\alpha p^m g^m(\ )/p$ units of the domestic good. This type of interdependence between equations (A3) and (A4) is believed to be consistent with the observation that, given a set of prices, the government has a certain budgeted expenditure which cannot be exceeded, and which will not be left unspent, given the dynamics of administration. Equations (A5) and (A6) represent supply equations. It is notable that all the supply and demand equations are specific to a particular good, and all are partial-equilibrium. Equations (A7) and (A8) are definitions, and equations (A9) and (A10) are equilibrium conditions.

It is a straightforward, although tedious, exercise to determine the effects of a change in the degree of total discrimination (α) on

(1) total imports of the economy, both Government and private-sector ($p^m D^m$),

(2) the income of domestic producers (pD), and

(3) the size of Government expenditure ($pD_2 + p^m D_2^m$), which presumably must be financed by an increase either in taxes or in debt issue by the Government.

For a given change in α (that is, for a given value of $d\alpha$), (1) is obtained by adding the change in private-sector expenditure on imports from equation (A12) below to the change in Government expenditure on imports from equation (A14); (2) is obtained by adding the change in private-sector expenditure on domestically-produced goods from equation (A11) to the change in Government expenditure on domestically-produced goods from equation (A13); and (3) is obtained by summing the change in Government expenditures on the two types of goods from equations (A13) and (A14):

(A11) $$\frac{d(pD_1)}{pD_1} = (1-\eta_1)dp + \gamma_1 dp^m$$

(A12) $$\frac{d(p^m D^m{}_1)}{p^m D^m{}_1} = \gamma_1{}^m dp + (1-\eta_1{}^m)dp^m$$

(A13) $$\frac{d(pD_2)}{pD_2} = \left[1-\eta_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)+(\gamma_2{}^m-1)\left(\frac{\alpha V_2}{1-\alpha}\right)\right]dp$$
$$+\left[\gamma_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)-(\eta_2{}^m-1)\left(\frac{\alpha V_2}{1-\alpha}\right)\right]dp^m$$
$$+\left(\frac{V_2}{1-\alpha}\right)d\alpha$$

(A14) $$\frac{d(p^m D_2{}^m)}{p^m D_2{}^m} = \gamma_2 dp + (1-\eta_2{}^m)dp^m - \left(\frac{1}{1-\alpha}\right)d\alpha$$

where

$$dp^m=\left(-\frac{1}{\Delta}\right)\left(\frac{R_2{}^m}{1-\alpha}\right)\left\{\left[\epsilon+\eta_1 R_1+\eta_2 R_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)\right]\right.$$
$$\left.-V\left[\gamma_1{}^m R_1{}^m+(\gamma_2{}^m-\alpha)\left(\frac{R_2{}^m}{1-\alpha}\right)\right]\right\}d\alpha,$$

and where

$$dp=\left(\frac{1}{\Delta}\right)\left(\frac{R_2{}^m}{1-\alpha}\right)\left\{V\left[\epsilon^m+\eta_1{}^m R_1{}^m+(\eta_2{}^m-\alpha)\left(\frac{R_2{}^m}{1-\alpha}\right)\right]\right.$$
$$\left.-\left[\gamma_1 R_1+\gamma_2 R_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)\right]\right\}d\alpha,$$

and where (A13)

$$\Delta=\left[\epsilon+\eta_1 R_1+\eta_2 R_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)+(1-\gamma_2{}^m)\left(\frac{\alpha V R_2{}^m}{1-\alpha}\right)\right]\cdot$$
$$\cdot\left[\epsilon^m+\eta_1{}^m R_1{}^m+\eta_2{}^m R_2{}^m\right]-\left[\gamma_1 R_1+\gamma_2 R_2\left(1-\frac{\alpha V_2}{1-\alpha}\right)\right.$$
$$\left.+(1-\eta_2{}^m)\left(\frac{\alpha V R_2{}^m}{1-\alpha}\right)\right]\cdot\left[\gamma_1{}^m R_1{}^m+\gamma_2{}^m R_2{}^m\right],$$

and where the variables are defined as follows:

dp, dp^m = the change in the prices of domestic goods and imports, respectively, as a result of the change in discrimination policy ($d\alpha$);
ϵ, ϵ^m = supply elasticities of domestically-produced goods and imports, respectively;
η_1, $\eta_1{}^m$, η_2, $\eta_2{}^m$ = direct demand elasticities of the private sector (subscript 1) and the Government (subscript 2) for domestically-produced goods and imports, respectively (defined positively);
γ_1, $\gamma_1{}^m$, γ_2, $\gamma_2{}^m$ = cross-price elasticities of the private sector (subscript 1) and the Government (subscript 2) for domestically-produced goods and imports, respectively;
R's represent ratios of each sector's demand to total demand, meaning

$$R_1=D_1/D,\ R_1{}^m=D_1{}^m/D^m,\ R_2=D_2/D,\ R_2{}^m=D_2{}^m/D^m;$$

V's represent value ratios of import demand to domestic-good demand,

$$V=p^m D^m/pD,\ V_2=p^m D_2{}^m/pD_2.$$

What is notable about the expressions derived for the effects of "Buy American" policy on imports, income, Government expenditure and prices is their generally indeterminate sign. In particular, although it is likely that import prices will fall with an increased degree of discrimination against foreign suppliers, it is by no means obvious that domestic price will rise. In this event, it is no longer necessarily true that the incomes of domesitc producers will rise. Nor is it unlikely that Government expenditure will actually fall as purchasing is shifted toward (ostensibly more expensive) domestic goods. These seemingly paradoxical results are more likely to occur the larger are the private sector's demand-price elasticities relative to those of the Government sector (that is, the greater the positive difference between the private and Government sector's assessment of the substitutability of imported for domestically-produced goods). This is discussed at greater length in part III of the text.

Appendix C

Estimating the Quantitative Effects of "Buy American" Policy

This section outlines the methods underlying the estimated 1963 effects of "Buy American" policy reported in part III of the text. The procedure briefly was to estimate an actual 1963 degree of discrimination against foreign suppliers and then to simulate over alternative degrees of discrimination, using a computer program written expressly for that purpose. (The technique was basically an approximation

to integrating the derivatives implicit in equations (All) to (A14) over all values of α from $a=0$ to $a=1$.)

The study utilized data from the 1963 input-output table (U.S. Department of Commerce, Input-Output Structure of the U.S. Economy: 1963), brokedown into broad commodity classes. The breakdown of actual Government imports by commodity class was, however, furnished directly by the Department of Commerce. The commodity groupings were restricted to manufactures in the Standard Industrial Classification, since most other types of goods (agricultural and mineral) are not subject to Government discrimination in purchasing. On the same grounds, petroleum (SIC 29) was excluded from other manufactures. The commodity groups are listed below, where the first set of brackets enclose the input-output industry designations entering the group and the second set of brackets enclose the SIC industry classifications:

ordnance and accessories (13) (19),
nondurable manufactures (14–19, 24–29, 31–34) (20–23, 26–28, 30–31),
lumber, wood, stone, clay, glass products (20–23, 35–36) (24–25, 32),
primary and fabricated metal products (37–42) (33–34),
nonelectrical machinery (43–52) (35),
electrical machinery (53–58) (36),
transportation equipment (59–61) (37),
instruments and miscellaneous (62–64) (38–39).

For each commodity class, the data consisted of the 1963 values of the private sector's domestic purchases and imports, and the Government's domestic purchases and imports (pD_1, $p^mD_1{}^m$, pD_2, and $p^mD_2{}^m$, respectively.) In each commodity group, the figure for Government imports was entered directly as $p^mD_2{}^m \cdot pD_2$ consisted of Federal Government purchases from the column with that label in the input-output table, less $p^mD_2{}^m \cdot p^mD_1{}^m$ consisted of transferred imports from row 80B of the input-output table less $p^mD_2{}^m$. And finally, pD_1 consisted of the sum of intermediate output, personal consumption expenditure, gross private fixed capital formation and net inventory change from the input-output table, less $p^mD_1{}^m$.

These four numbers alone were judged capable of yielding an initial level of the unobserved discrimination parameter a, and were used for that purpose. The estimate of a was obtained by the following reasoning: in the absence of discrimination, it seems a reasonable hypothesis that the Government would import about the same proportion of a selected commodity as the private sector. That is to say, on a commodity-by-commodity basis, the Government's average propensity to import would be identical to that of the private sector when $a=0$. Admission of this hypothesis can be used in the following way to obtain an estimate of the initial or present degree of discrimination. Equation (A4) above expresses the proportional relation between actual Government imports, $D_2{}^m$, and hypothetical Government imports in the absence of discrimination, $g^m(\ )$. Multiplying through equation (A4) by p^m yields a relation between the actual and hypothetical values of these transactions (say actual value$=X_2{}^m$ and hypothetical value$=\overline{X}_2{}^m$). This relation appears below as equation (A15). Similarly, equation (A3) above expresses a proportional relation between actual Government purchases from the domestic sector, D_2, and hypothetical purchases in the absence of discrimination, $g(\ )$. Similarly, multiplying through equation (A3) by p yields a relation between actual and hypothetical values of these transactions. This relation appears below as equation (A16).

$$X_2{}^m=(1-a)\overline{X}_2{}^m \tag{A15}$$

$$X_2=\overline{X}_2+a\overline{X}_2{}^m \tag{A16}$$

Returning to the hypothesized equality between average propensities to imports in the absence of discrimination, it implies algebraically, that

$$\frac{\overline{X}_1{}^{-m}}{\overline{X}_1}=\frac{\overline{X}_2{}^m}{\overline{X}_2}.$$

However, for a country like the United States, the hypothetical ratio of private imports to domestic purchases is sure to be approximated by the actual ratio, because of the very large size of domestic production compared to imports, and the comparatively large private sector compared to the Government sector. This suggests the approximate equality of equation (A17):

$$\frac{X_1{}^m}{X_1}\approx\frac{\overline{X}_2{}^m}{\overline{X}_2} \tag{A17}$$

Equations (A15), (A16), and (A17) are then a system of three equations in three unknowns (the two hypothetical values $\overline{X}_2{}^m$ and $\overline{X}_2$, and the actual degree of discrimination a). Thus a solution for the present level of discrimination is obtainable by solving the three-equation system. a becomes a function of known quantities:

$$a=\frac{X_2/X_2{}^m-X_1/X_1{}^m}{1+X_2/X_2{}^m}$$

Use of the approximate equality (A17) assures that this is a slight overestimate of a, and in the actual estimation reported above, the estimated a was rounded off in a downward direction to the nearest $0.Z5$, where the digit Z varied between 0 and 9.

The data for pD_1, $p^mD_1{}^m$, pD_2, and $p^mD_2{}^m$ were also by definition sufficient to yield values for the ratios R_1, $R_1{}^m$, R_2, $R_2{}^m$, V, and V_2. Thus in terms of equations (A11)–(A14), the only parameters remaining to be specified were the supply and demand elasticities. The latter were arbitrarily chosen on the basis of a priori expectations about reasonable values for each particular commodity classification. They are available from the author on request. Supply elasticities were chosen uniformly across commodity classes for lack of any other prior assumption. Home and import supply elasticities were assumed to be, respectively, 2 and 1 (short-run case) or 20 and 10 (long-run case).

Having established an initial level of discrimination and knowing the value of total imports at that particular level, it is a comparatively simple matter to plug the actual and assumed values of variables into equations (A11)–(A14), and read out the changes in total magnitudes which would take place given a change in α. In fact, the procedure followed was to determine the changes in pD_1, $p^mD_1{}^m$, pD_2, and $p^mD_2{}^m$ which would come about from a 0.10 increase or decrease in α from its original value, then to use these changes to establish new values of pD_1, $p^mD_1{}^m$, pD_2, and $p^mD_2{}^m$, and therefore also new values for all the share ratios (R's and V's). These new values, in addition to the increased or decreased value of α then provided the new raw data to plug into equations (A11)–(A14) a second time. With the resultant second set of changes, the levels could be revised a second time for a new value of the discrimination parameter, and the whole process repeated. In addition, at each iteration, the values of the assumed elasticities of demand of the Government were raised when α was being decreased, and lowered when α was being increased. This was consistent with the notion that increasing general favoritism to domestic producers also lowers the price sensitivity of the Government purchasing agent.

What emerges from this procedure is a "hypothetical history" of Government discrimination against imports for each commodity class—what the value of total imports in 1963 would have been if the Government had engaged in any degree of discrimination from none at all to total exclusion of imports in Government purchases. On the basis of one observation on actual data, the values of all variables in the system were imputed for $\alpha=0$, $\alpha=1$, and $\alpha=0.05$ to $\alpha=0.95$ by 0.10 intervals. The detailed results for intermediate intervals are available from the author on request.

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