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DESTINATION PRINCIPLE BORDER TAX ADJUSTMENTS FOR THE  
CORPORATE INCOME AND SOCIAL SECURITY TAXES

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## I. INTRODUCTION

The General Agreement on Tariffs and Trade (GATT) provides that destination principle border tax adjustments can be applied to indirect taxes, such as sales or value added taxes, but not to direct taxes, such as the corporate income or social security tax. In other words, indirect taxes can be imposed at the border on imports, and remitted on exports, but no explicit adjustments can be made for direct taxes.

This differential treatment of direct and indirect taxes served to focus attention in the United States on the border tax issue in the late 1960's and early 1970's. Noting the widespread adoption of the value added tax in Europe and the concern in the United States over the performance of the U.S. trade account, numerous authors questioned whether the substitution of a value added tax for the corporate income tax would improve the U.S. trade balance.<sup>1/</sup> The typical analysis combined assumptions about tax shifting and aggregate price elasticities to estimate the impact of various tax substitution packages on the U.S. trade balance. In the last few years, the realignment of currency values and wider realization that our trading partners also have substantial corporate income taxes have served to dampen interest in the aggregate trade balance aspects of the border tax issue.

The border tax issue, however, was revived by section 121(a)(5) of the Trade Act of 1974 which directs the President to seek revision of the GATT articles providing for differential treatment of direct and indirect taxes. This paper does not

examine the aggregate trade balance effects, but rather the sectoral trade balance effects and revenue effects of extending the destination principle to the corporate income tax and the employer portion of the social security tax. This paper adopts the proposition that the method of border tax adjustment will not affect the overall trade balance (assuming an adjustment mechanism), but it can affect the composition of trade. Ohlin, for example, has suggested that the impact of taxes on trade can be significant.

The costs of production also include taxes and social welfare fees, many of which bear an important relation to international trade.... It has long been a mystery to me why existing accounts of international trade pay so little attention to these problems. So many books and articles discuss the impact of a certain type of taxation, viz., tariffs levied at the border when goods are imported, yet they devote no space to the question of how other kinds of taxation can affect trade. 2/

The remaining sections of the paper develop the theory of sectoral effects; describe the data used; and present industry ranking and revenue impact results.

## II. THEORY OF SECTORAL EFFECTS

A completely general tax applied uniformly either to the consumption or to the production of all goods in an economy will not affect the allocation of resources. In an open economy this implies that the choice of either origin or destination principle border tax adjustments is irrelevant to resource allocation; this result has been noted in the Tinbergen Report and elsewhere <sup>3/</sup> and is based on the observation that a uniform tax on the consumption of goods leaves the relative prices which consumers pay unchanged, while a uniform tax on the production of goods leaves the relative prices which producers receive unchanged. Thus, for any particular industry, a uniform tax, no matter what the method of border tax adjustment, will leave domestic consumption, domestic production, and therefore, the industry's trade balance unchanged. There is a monetary difference between the two principles in that a general tax imposed under the origin principle will initially worsen the country's trade balance, causing an offsetting devaluation in its currency, whereas a general tax imposed under the destination principle will have no trade balance repercussions. <sup>4/</sup> This is another way of saying that currency depreciation and destination principle border tax adjustments produce the same results in the model. <sup>5/</sup>

These effects are illustrated for the U.S. steel market by Figure 1. The United States hypothetically imposes either a general income tax of 10 percent or a final stage sales tax

of 10 percent on all products. The following conditions are assumed: (1) exchange rates are either free to float or are adjusted from time to time; (2) prior to the tax the United States has neither a balance of payments surplus nor deficit; and (3) the United States adopts the origin principle. The pre-tax long run domestic supply curve for steel is represented by  $S$ . The domestic demand curve is shown by  $D$ . The world demand for steel is assumed to be perfectly elastic and is given by  $W$ . <sup>6/</sup> In the absence of international trade, the United States would produce and consume quantity  $q$  of steel at price  $p_0$ . Because the world price of steel,  $p_1$ , is higher than the domestic price,  $p_0$ , under a system of free trade the United States consumes quantity  $c_0$  of steel, produces quantity  $a_0$ , and exports quantity  $c_0 - a_0$ .

Since, in the long run, any tax will shift the supply curve upwards (decrease supply), the general income or sales tax of 10 percent shifts the U.S. supply curve upwards by 10 percent to  $S^*$ . The tax on steel does not, of course, affect the steel demand curve. But because a 10 percent tax is imposed on all other commodities (or all other income), all these other U.S. goods will be 10 percent more expensive as well. With the price of all other U.S. goods 10 percent higher than before, steel users will be willing to pay 10 percent more for any given quantity of steel. In other words, the steel demand curve is positioned with respect to the relative price between steel and other goods, not with respect to the absolute money price of steel. The steel demand curve, therefore, shifts upwards

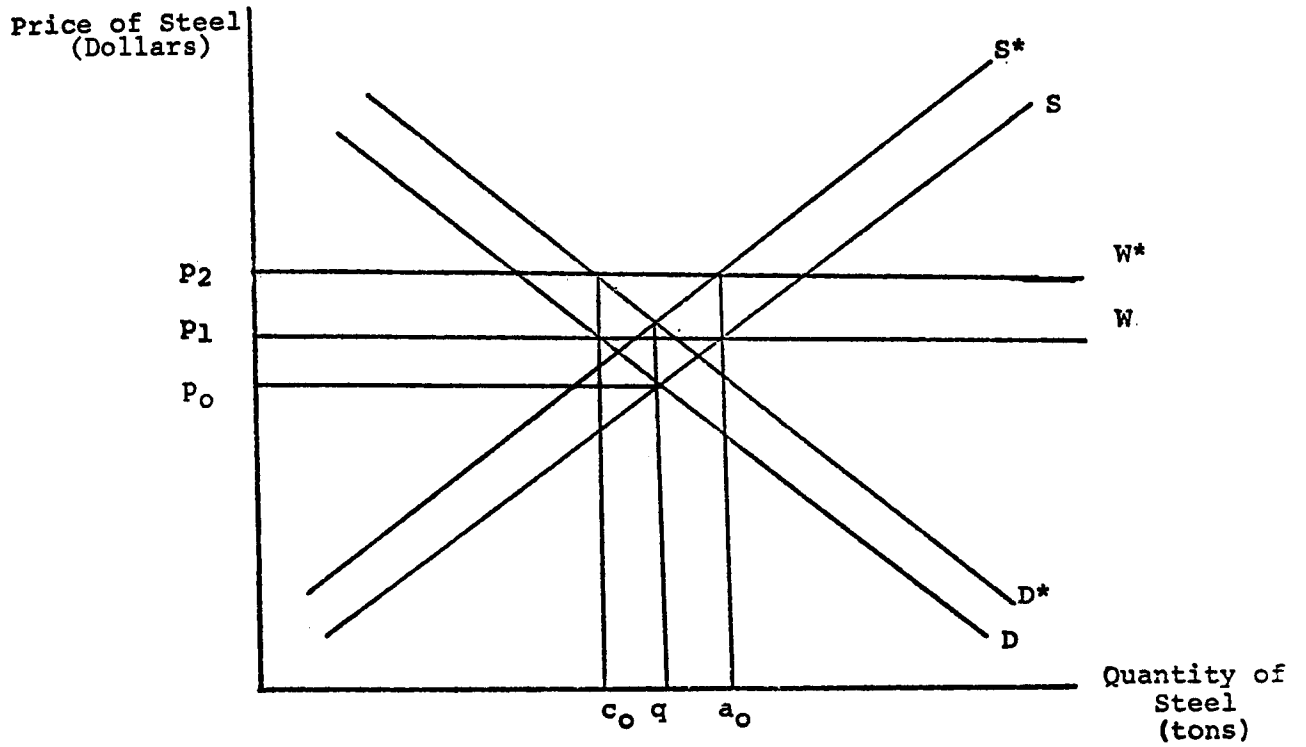


Figure 1. General equilibrium effect of a general tax on an exported product under either the origin or destination principle of border tax adjustments.

by 10 percent to  $D^*$ . Because all U.S. prices are now 10 percent higher, the dollar must depreciate by 10 percent to restore balance of payments equilibrium. The world demand curve for steel, expressed in terms of dollars, therefore, shifts upwards by 10 percent to  $W^*$ . The U.S. continues to consume quantity  $c_0$  of steel, produce quantity  $a_0$ , and export quantity  $c_0 a_0$ . Nothing has changed except that all U.S. prices are 10 percent higher than before the tax.

Now suppose that the U.S. switches from the origin to the destination principle of border tax adjustment. Figure 1 can also serve to illustrate this situation. The domestic supply and demand curves for steel shift upwards by 10 percent as before. The world demand curve as it appears to U.S. sellers of steel, also shifts upwards by 10 percent, not because of a currency realignment, but rather because the 10 percent tax is rebated on steel exports. <sup>7/</sup> As before, U.S. consumption, production, and exports of steel remain unchanged.

This analysis underlies the argument that there is no real difference between origin and destination principle border tax adjustments for perfectly general income or sales taxes. In the words of Meade and his colleagues,

provided the tax rate is the same for all commodities and the same principle of tax treatment [destination or origin] is applied to all commodities, neither the treatment actually chosen nor the level of such a tax in any particular country will affect the relative production and consumption of commodities. <sup>8/</sup>



But perfectly general taxes are so rare that they scarcely exist. Most income taxes, such as the corporate profits tax, or social security taxes, operate unevenly across sectors. A nonuniform tax will, of course, affect an economy's allocation of resources, either through its effect on relative prices paid by consumers or through its effect on relative prices received by producers.

In this situation the method of border tax adjustment chosen becomes critically important for determining the impact of the tax system on industry or sectoral trade balances. In an open economy, the method of border tax adjustment serves to determine the character that any given tax will take in the domestic economy. A tax treated under the origin principle becomes a production tax, no matter what its legal form, since goods are taxed where produced, not where consumed. Thus, a nonuniform tax which is imposed on the origin basis will alter sectoral trade balances primarily through its impact on production patterns. A tax treated under the destination principle becomes a consumption tax since goods are taxed where consumed, not where produced. Thus, a nonuniform tax imposed on the destination basis will alter sectoral trade balances through its impact on consumption patterns. Whether a tax is treated under the origin or destination basis can be important in determining a sector's level of net exports.

This principle is illustrated in Figure 2. <sup>9/</sup> Consider the situation where the United States imposes a 10 percent tax on

steel, but an "average" five percent tax on all other commodities. <sup>10/</sup> The average tax on all commodities, including steel, is six percent. The United States adopts the origin principle. In Figure 2, S is the pre-tax steel supply curve and S\* is the post-tax supply curve shifted upwards by 10 percent. The pre-tax steel demand curve is D. Because the average tax on all commodities except steel is five percent, and because the demand for steel is expressed in terms of relative prices, the steel demand curve shifts upwards by five percent to D\*. Initially, the world demand curve is W. Because the average tax of six percent raises prices of all commodities including steel on average by six percent, the dollar must depreciate by six percent to restore equilibrium in the balance of payments. Hence, the world demand curve for steel, expressed in terms of dollars, shifts upwards by six percent to W\*. The domestic supply curve has shifted by more than the world demand curve. In addition, the domestic demand curve has shifted upwards. Steel exports therefore decline <sup>11/</sup> from the pre-tax quantity of  $c_0a_0$  to the post-tax and exchange rate adjustment quantity of  $c_1a_1$ . This result may be generalized. The origin principle usually serves to decrease net exports (increase net imports) of any commodity which is taxed more heavily than the average. Conversely, the origin principle usually serves to increase net exports (decrease net imports) of any commodity which is taxed more lightly than the average.

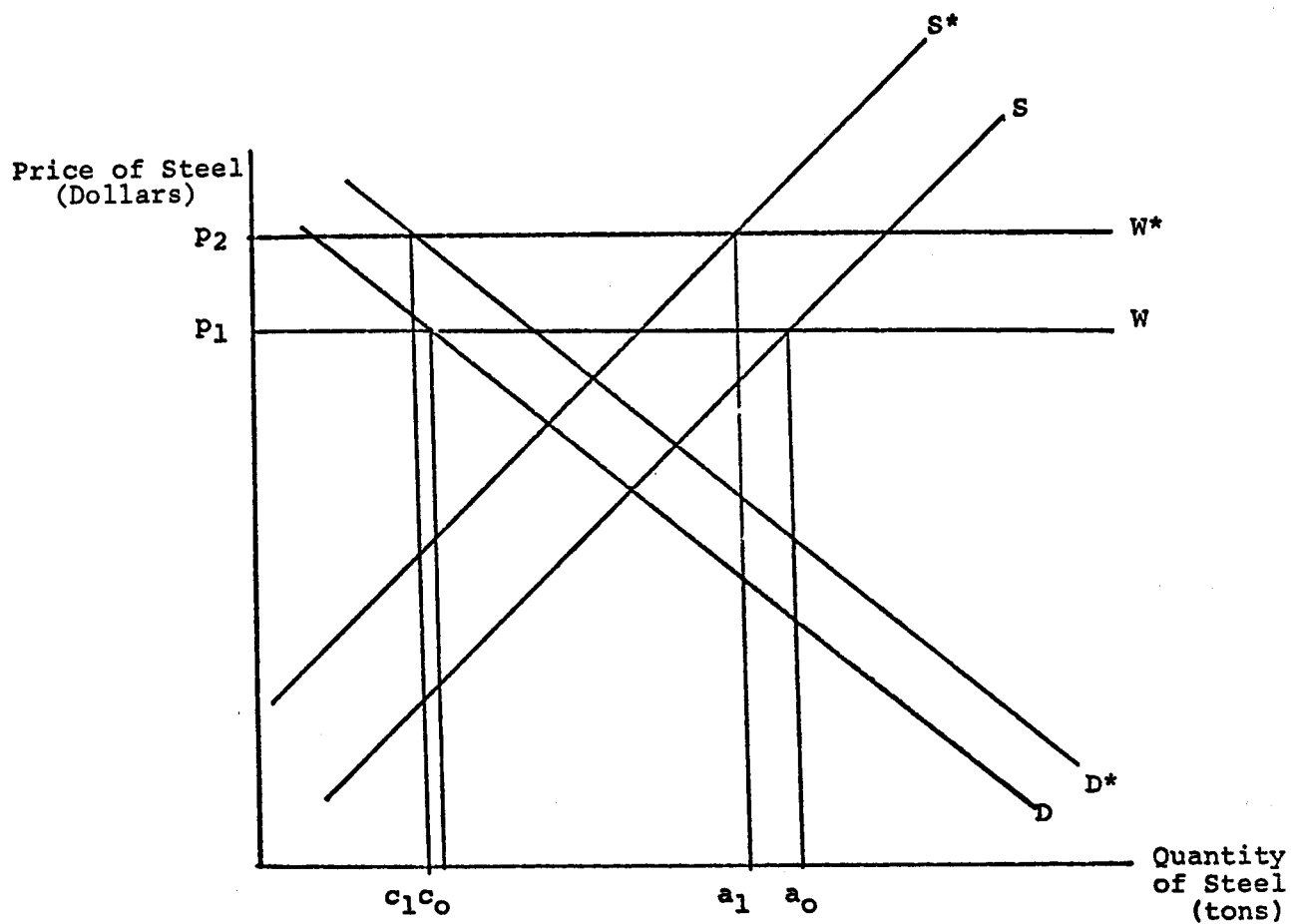


Figure 2. General equilibrium effect of a tax on the exported product which is higher than the average tax under the origin principle of border tax adjustments.

Now consider the same situation with a destination principle border tax adjustment. The simultaneous upward shift in Figure 3 of the domestic supply and the world demand curves by 10 percent leaves U.S. production unchanged at  $a_0$ . However, because the domestic demand schedule increases by only five percent, U.S. consumption of steel falls, and exports are increased from  $c_0a_0$  to  $c_1a_0$ . This result can be generalized. The destination principle serves to increase net exports (decrease net imports) of any commodity which is more heavily taxed than average; it serves to decrease net exports (increase net imports) of any commodity which is more lightly taxed than average.

The changeover from an origin to a destination principle can thus exert significant compositional effects. It will expand exports and reduce imports of goods taxed more heavily than average and reduce exports and expand imports of goods taxed more lightly than average. <sup>12/</sup>

The analysis, so far, has been presented solely with reference to the United States. But if the United States adopts the destination principle for the corporate income tax or the social security tax, it is reasonable to expect that other trading countries will follow suit. Foreign adoption of the destination principle could moderate the sectoral trade balance effects resulting from adoption of the destination principle in the United States alone. A switch from the origin to the destination principle will tend to expand net U.S. exports of the products of sector  $i$ , provided sector  $i$  is taxed more heavily than average. But if sector  $i$  is also taxed substantially more

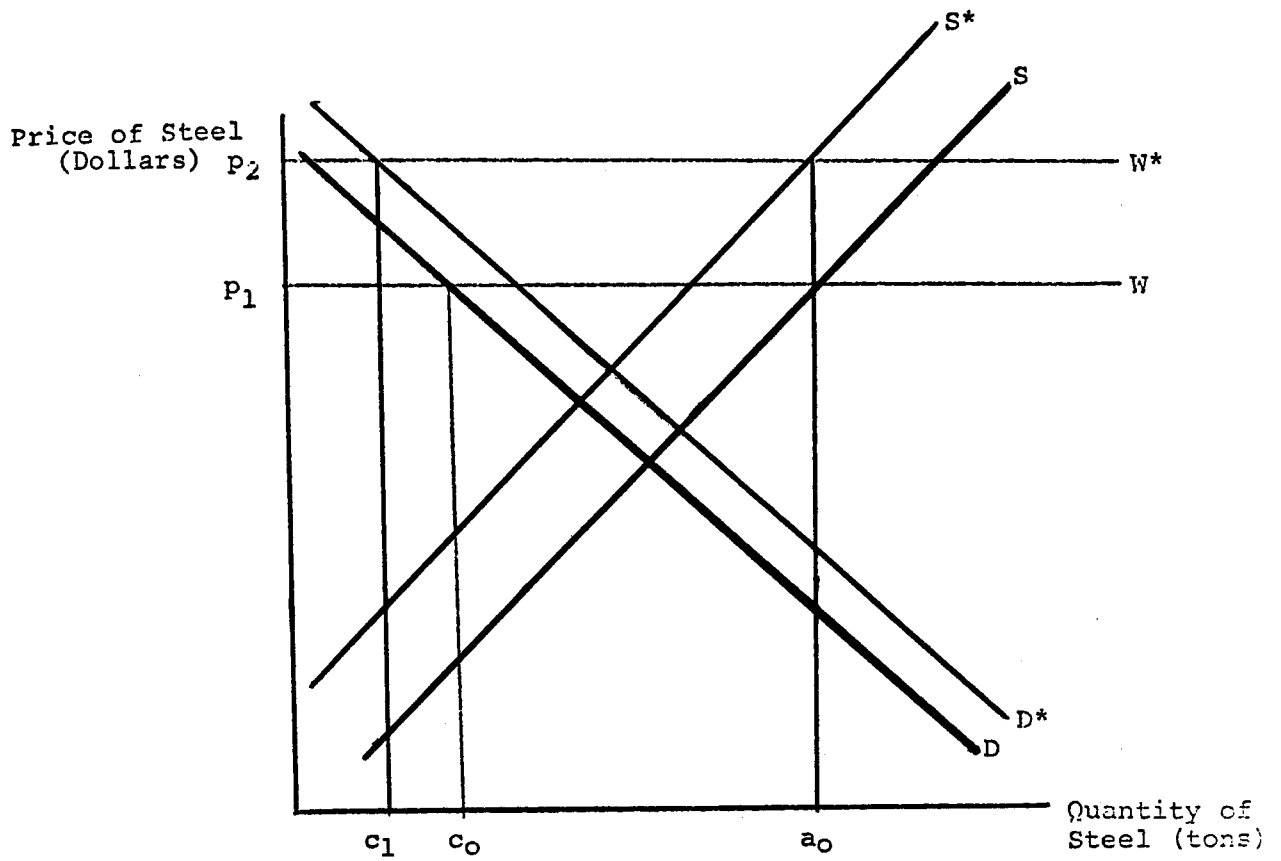


Figure 3. General equilibrium effect of a tax on the exported product which is higher than the average tax under the destination principle of border tax adjustment.

heavily than average in France, but less heavily than average in the United Kingdom, it is likely that the U.S. trade balance in sector i's products will improve only with respect to the United Kingdom. Even in that market, an improved U.S. trade balance might be foreclosed by increased U.K. imports from France of sector i's products.

### III. DIRECTION OF CHANGE IN U.S. SECTORAL TRADE BALANCES

In order to predict how the change from the origin to destination principle might affect the composition of U.S. trade, it is necessary to know the sectoral tax burdens both in the United States and in the principal trading countries. An understanding of the magnitude of the composition of trade effects would also require estimates of sector demand and supply elasticities in each country. Such estimates are beyond the scope of this paper. The relative sectoral tax burdens presented for each country should therefore be interpreted as providing a rough indication of the direction, but not the magnitude, of change in sectoral trade balances. The next section explains how the sectoral tax burdens were calculated for certain important trading nations, namely Canada, France, Germany, the United Kingdom, and the United States.

A. Calculation of Sectoral Tax Burdens. The calculation of sectoral tax burdens involved two steps: (1) classifying the data into consistent industry sectors across countries; and (2) determining the appropriate measure of a sector's tax liability.

For each of the five countries, the data are classified according to the system used in the standardized input-output table of the European Economic Community (EEC). In principle, this implies a 51-sector classification. Because of difficulty in matching tax data with the standard classification sectors, a less-detailed classification of 32 sectors was used.

For a particular tax, each sector's tax burden was calculated by dividing the taxes paid by that sector by its total sales.<sup>13/</sup> Thus, with respect to the corporation income tax, the corporate tax burden in sector *i* was calculated by dividing the corporate tax paid by producers in sector *i* by the total sales of sector *i*. This measure is obviously not the same as the corporate income tax rate (corporate income tax paid divided by corporate income). However, the ratio of corporate tax paid by sector *i* to total sales of sector *i* indicates the proportion by which the price of the product of sector *i* is affected by the tax.

For example, if only sector *i* is taxed, a ratio of 10 percent in sector *i* indicates that the price for the good received by producers in sector *i* would be reduced by 10 percent under the origin principle. This is true because application of the origin principle to a tax means that consumers pay the world price for the good in question, while producers receive the world price less the tax.<sup>14/</sup> Alternatively, if the destination principle is applied, the price paid by consumers of sector *i*'s output would be increased, in this instance, by 10 percent. Application of the destination principle means that producers receive the world price, while consumers pay the world price plus the tax. In brief, switching from the origin to destination principle means that both the price received by producers and the price paid by consumers increase in proportion to the ratio of the tax to sales in



industry i.<sup>15/</sup> The same procedure of dividing industry tax liability by industry sales was used to calculate the industry tax burdens for the employer portion of the social security tax.

B. Industry Rankings. The industry tax burdens, for the corporate income tax and the social security tax, for each country are presented in Table 1 (page 19). Since, within a country, it is the relative tax burdens that are significant, industry rankings are placed in parentheses adjacent to the percentage calculation showing an industry's actual tax burden. Average tax rates, for each country and each tax, are shown at the top of the table. Thus, for the United States, the agricultural, forestry, and fishery products industry has a corporate tax liability of 0.18 percent of sales which ranks it 28th, last (the lowest tax liability) in this instance, among United States industries. The average corporate tax liability in the United States is 1.41 percent of sales.

C. Sectoral Effects: Destination Principle Corporate Income Tax. Many inferences could be drawn from Table 1, but only a few of those will be suggested here. In the United States, the five industries producing manufactured goods which are taxed most heavily under the corporate income tax are, in order:

Tobacco products

Office and data processing machines;  
precision and optical instruments

Chemical products

Motor vehicles

Electrical equipment 16/

A switch from the origin to destination principle would tend to increase the net exports (decrease net imports) of these industries. However, four of these industries also are taxed relatively heavily in some of the other countries:

Tobacco products (Canada, United Kingdom)

Office machines, etc. (France, Germany)

Chemical products (Canada, France, Germany)

Electrical equipment (France, Germany, United Kingdom)

Thus, U.S. trade balances in the four sectors would not necessarily improve with respect to these particular countries. The sectoral trade balances for the United States could be expected to improve with respect to all countries where these industries are taxed relatively lightly. This improvement, however, would be moderated by increased net exports from the enumerated countries which also tax the particular industries rather heavily.

Some industries in the United States could, of course, expect to observe an increase in the volume of their net imports. These industries, taxed relatively lightly in the United States and moderately or even heavily elsewhere, are:

Crude petroleum, natural gas and  
petroleum products

Non-ferrous metals and minerals

Coal, lignite and briquettes

D. Sectoral Effects: Destination Principle Social Security Tax. Similar analysis can be applied to determine the sectoral effects of treating the employer portion of the social security tax on a destination rather than origin basis. The United States industries which are taxed relatively heavily, both with respect to other industries in the United States and with respect to the same industry in other countries, and which therefore could expect to observe an increase in their net exports, are:

Non-metallic mineral products

Rubber and plastic products

Textiles and clothing

Metal products except machinery and  
transport equipment

Leather, leather and skin goods, footwear

Finally, those United States industries taxed relatively lightly, both with respect to other industries in the United States and with respect to the same industry in other countries, and which therefore would tend to experience an increase in net imports are:

Motor vehicles

Office and data processing machines;  
precision and optical instruments

Electrical equipment

Timber, wooden products and furniture

It is interesting to note that three of these U.S. industries, namely motor vehicles, office machines, etc.,

and electrical equipment, would tend to experience the opposite effect, an increase in net exports, from changing the border tax treatment of the corporate income tax to the destination principle. Thus, for these three industries, simultaneous application of the destination principle to the corporate income tax and employer portion of the social security tax would have offsetting trade balance effects.

**Table 1**  
**Corporate Income Tax and Social Security Tax (Employer Portion) Liabilities as a Percent of Total Industry Sales**  
**Selected Countries**  
**(Industry Rankings for Each Tax and Each Country in Parenthesis)**

Industry Number and Title	Corporate Income Tax					Social Security Tax (Employer Portion)				
	U.S. 1/	Canada 2/	France 3/	Germany 3/	U.K. 3/	U.S. 1/	Canada 2/	France 3/	Germany 3/	U.K. 3/
	(Percent of Total Industry Sales)					(Percent of Total Industry Sales)				
Average Rate	1.41	1.30	0.95	0.54	2.24	1.01	1.32	4.93	1.30	2.77
1. Agricultural, forestry and fishery products	0.18 (28)	0.89 (24)		0.01 (19)	0.38 (26)	0.32 (24)	1.30 (16)	0.97 (29)		1.25 (24)
2. Coal, lignite and briquettes	0.90 (21)	1.58 (14)		0.28 (11)		2.31 (1)	0.64 (21)	15.47 (2)	5.39 (1)	7.10 (1)
3. Products of coking		1.63 (12)		0.28 (11)	1.26 (19)		0.92 (19)	21.44 (1)	2.06 (13)	0.80 (27)
4. Crude petroleum, natural gas and petroleum products	0.67 (24)	1.61 (13)	1.16 (9)	0.67 (6)	1.25 (20)	0.23 (25)	0.86 (20)	1.33 (28)	0.25 (25)	0.35 (28)
5. Electric power, gas, steam and water	2.67 (5)	0.96 (22)	0.54 (23)	2.34 (1)		0.72 (20)	0.58 (22)	8.63 (4)	1.09 (21)	2.48 (14)
6. Ferrous metals and minerals	1.21 (19)	1.27 (18)	0.38 (25)	0.17 (16)	1.45 (17)	1.41 (10)	2.15 (5)	5.38 (10)	1.12 (20)	2.23 (20)
7. Non-ferrous metals and minerals	0.89 (22)	1.27 (18)	0.89 (15)	0.17 (16)	1.69 (15)	1.41 (10)	2.15 (5)	2.91 (22)	1.12 (20)	1.31 (23)
8. Non-metallic mineral products	2.13 (12)	1.90 (8)		0.28 (11)	3.27 (5)	1.70 (3)	1.82 (10)		1.98 (15)	2.62 (9)
9. Chemical Products	3.17 (3)	2.55 (5)	1.46 (6)	0.77 (5)	2.51 (9)	0.84 (15)	1.52 (15)	4.15 (19)	1.29 (19)	1.56 (21)

Industry Number and Title	Corporate Income Tax					Social Security Tax (Employer Portion)				
	U.S. 1/ (Percent of Total Industry Sales)	Canada 2/ (Percent of Total Industry Sales)	France 3/ (Percent of Total Industry Sales)	Germany 3/ (Percent of Total Industry Sales)	U.K. 3/ (Percent of Total Industry Sales)	U.S. 1/ (Percent of Total Industry Sales)	Canada 2/ (Percent of Total Industry Sales)	France 3/ (Percent of Total Industry Sales)	Germany 3/ (Percent of Total Industry Sales)	U.K. 3/ (Percent of Total Industry Sales)
10. Metal products except machinery and transport equipment	1.98 (14)	1.83 (9)	1.18 (8)	0.66 (7)	1.99 (13)	1.63 (6)	2.08 (6)	4.90 (14)	2.54 (8)	2.33 (18)
11. Agricultural and industrial machinery	2.39 (8)	2.62 (4)	1.79 (4)	0.64 (8)	2.44 (10)	1.57 (7)	2.23 (3)	5.41 (9)	2.71 (6)	2.61 (10)
12. Office and data processing machines; precision and optical instruments	4.44 (2)	2.25 (6)	1.79 (4)	1.05 (2)	2.54 (8)	0.77 (18)	1.70 (12)	5.41 (9)	2.69 (7)	2.99 (6)
13. Electrical equipment	2.48 (7)	1.52 (16)	1.19 (7)	1.05 (2)	2.78 (7)	0.78 (17)	1.91 (8)	5.41 (9)	2.78 (3)	2.89 (7)
14. Motor vehicles	2.99 (4)	2.00 (7)	0.61 (21)	0.64 (8)	1.39 (18)	0.71 (21)	2.38 (2)	4.66 (17)	2.00 (14)	2.60 (11)
15. Other Transport equipment	1.32 (17)	2.00 (7)	0.68 (19)	0.64 (8)	0.90 (24)	1.63 (6)	2.38 (2)	6.19 (8)	2.72 (5)	3.91 (3)
16. Meats, meat preparations and preserves	1.31 (18)	1.14 (20)	0.53 (24)	0.38 (10)	0.92 (23)	0.67 (22)	1.02 (18)	2.55 (24)	0.62 (23)	1.18 (25)
17. Milk and dairy products	1.31 (18)	1.14 (20)	0.64 (20)	0.38 (10)	0.92 (23)	0.67 (22)	1.02 (18)	2.67 (23)	0.72 (22)	1.18 (25)
18. Other food products	1.31 (18)	1.14 (20)	1.13 (10)	0.38 (10)	0.92 (23)	0.67 (22)	1.02 (18)	3.24 (21)	1.06 (21)	1.18 (25)
19. Beverages	1.31 (18)	4.94 (1)	2.74 (1)	0.38 (10)	7.11 (1)	0.67 (22)	1.52 (15)	3.44 (20)	1.30 (18)	1.33 (22)
20. Tobacco products	4.47 (1)	4.05 (2)		0.38 (10)	6.71 (2)	0.41 (23)	1.16 (17)	1.67 (27)	0.34 (24)	1.07 (26)
21. Textiles and clothing	1.55 (15)	1.52 (16)	0.81 (16)	0.21 (14)	1.55 (16)	1.65 (5)	1.76 (11)	4.68 (15)	1.90 (16)	2.28 (19)

Industry Number and Title	Corporate Income Tax					Social Security Tax (Employer Portion)				
	U.S. <sup>1/</sup>	Canada <sup>2/</sup>	France <sup>3/</sup>	Germany <sup>3/</sup>	U.K. <sup>3/</sup>	U.S. <sup>1/</sup>	Canada <sup>2/</sup>	France <sup>3/</sup>	Germany <sup>3/</sup>	U.K. <sup>3/</sup>
	(Percent of Total Industry Sales)					(Percent of Total Industry Sales)				
22. Leather, leather and skin goods, footwear	1.44 (16)	1.20 (19)	0.92 (13)	0.21 (14)	2.21 (12)	1.47 (8)	1.68 (13)	5.13 (13)	2.09 (12)	2.49 (13)
23. Timber, wooden products and furniture	2.01 (13)	1.07 (21)	0.69 (18)	0.24 (12)	1.11 (22)	0.88 (14)	1.82 (10)	4.67 (16)	2.21 (10)	2.34 (17)
24. Paper and printing products	2.29 (9)	1.33 (17)	1.00 (12)	0.23 (13)	2.32 (11)	1.00 (13)	2.00 (7)	5.28 (12)	1.52 (17)	2.56 (12)
25. Rubber and plastic products	2.14 (11)	2.75 (3)	1.82 (3)	0.43 (9)	1.86 (14)	1.68 (4)	2.18 (4)	7.12 (6)	2.23 (9)	2.41 (16)
26. Other manufacturing products	2.23 (10)	2.25 (6)	2.09 (2)	0.95 (3)	3.17 (6)	1.35 (12)	1.70 (12)	7.05 (7)	2.19 (11)	2.44 (15)
27. Building and construction	0.59 (26)	0.94 (23)	0.71 (17)	0.14 (17)	1.20 (21)	0.76 (19)	1.85 (9)	7.31 (5)	3.25 (2)	2.65 (8)
28. Recovery and repair services	0.49 (27)	1.76 (10)	0.58 (22)			1.44 (9)	1.80 (10)	2.52 (25)		
29. Wholesale and retail trade	0.64 (25)	0.79 (25)	1.71 (5)	0.82 (4)	4.64 (3)	0.72 (20)	0.55 (23)	5.33 (11)	2.75 (4)	3.85 (4)
30. Lodging and catering services	0.74 (23)	1.72 (11)	0.21 (26)	0.20 (15)		0.79 (16)	1.58 (14)	2.10 (26)		
31. Transportation services	0.96 (20)	1.56 (15)	0.90 (14)	0.12 (18)	0.52 (25)	1.38 (11)	3.75 (1)	12.40 (3)		3.41 (5)
32. Other services	2.56 (6)	1.72 (11)	1.01 (11)	0.67 (6)	3.83 (4)	2.22 (2)	1.58 (14)	4.36 (18)		4.07 (2)

<sup>1/</sup> United States data for 1973

<sup>2/</sup> Canadian data for 1971

<sup>3/</sup> French, Germany, United Kingdom data for 1970-71

Source: See text

#### IV. REVENUE IMPACT

Switching to the destination principle would have a revenue impact because the tax would be levied on imports and rebated on exports. In the United States, the amount of border tax adjustment would be each industry's corporate and social security tax liability as a percent of sales. This would adjust only for the tax levied at the final stage; it would ignore taxes embodied in purchased inputs. While adjusting for the total, direct plus indirect, effects may be the conceptually correct approach, such estimates were not made in this paper for two reasons: (1) it would be difficult to reach agreement on this approach with other countries; and (2) the input-output tables for countries other than the United States were unavailable.

Accordingly, the revenue impact for the United States was estimated by multiplying each sector's 1974 exports and imports by the appropriate border tax adjustment. The sector revenue effects were then added to obtain a total estimate of revenue impact. The results, in millions of dollars, are as follows:

	<u>Exports</u>	<u>Imports</u>	<u>Total</u>
Corporate Income Tax	(\$1,766)	\$1,820	\$ +54
Social Security Tax	( 940)	876	-64
Total			\$ -10



The estimate of a \$10 million revenue loss indicates that the net revenue impact of treating both the corporate income and social security taxes on the destination basis is essentially zero. This estimate, however, must be regarded as rough because it does not take into account such factors as: (1) the possible modification of the Domestic International Sales Corporation (DISC) legislation; (2) any increase in corporate net exports resulting from adoption of the destination principle.

FOOTNOTES

The authors are respectively associated with the Office of International Tax Affairs, U.S. Treasury Department, and New York University. The opinions expressed in the paper are those of the authors, and should not be construed to reflect the views of either the Treasury Department or New York University.

1/ See, for example, Joel Barlow, Statement in Hearings Before the Committee on Ways and Means, Federal Excise Structure, 1964, p. 3, pp. 123-149; Business Taxation, The Report of the President's Task Force on Business Taxation, September 1970, pp. 61-82; Dan Throop Smith, "Value Added Tax; The Case For", Harvard Business Review, November-December, 1970, pp. 77-85; The Value Added Tax and Alternative Sources of Federal Revenue, Advisory Commission on Intergovernmental Relations, August 1973; and Maurice Weinrobe, "Corporate Taxes and the U.S. Balance of Trade", National Tax Journal, March 1971, pp. 79-86.

2/ Bertil Ohlin, Interregional and International Trade, Harvard University Press, Cambridge, Massachusetts, 1967, p. 309.

3/ See: European Coal and Steel Community, High Authority, Report on the Problems Raised by the Different Turnover-Tax Systems Applied within the Common Market, University of Chicago Press, 1953, pp. 22-28; James E. Meade, "A Note on Border Tax Adjustments", Journal of Political Economy, September-October 1974, pp. 1013-1015; and C. S. Shoup, "Taxation Aspects of International Economic Integration", Travaux de l'Inst. Internat. des Finances Publiques, 9th Session, (The Hague, 1953), pp. 91-93.

4/ This statement abstracts, of course, from differences between private and government spending patterns.

5/ This idea was noted by J. M. Keynes et. al., "Macmillian Committee Report", Committee on Finance and Industry Report, 1931, pp. 199-200, and, more recently, by Gottfried Harberler, "Import Taxes and Export Subsidies as a Substitute for the Realignment of Exchange Rates", Kyklos, Vol. XX, 1967, pp. 17-23.

6/ The unrealistic assumption of perfectly elastic world demand is made for purposes of expositional convenience; the effects of relaxing it are noted later.

7/ Although foreign currency prices remain the same, the rebate of 10 percent increases the dollar return for each unit exported relative to the return in the domestic market. Note that, under the destination principle, goods sell for different prices in the domestic and export markets.

8/ J.E. Meade, H.E. Liesner, S.J. Wells, Case Studies in European Economic Union: The Mechanics of Integration, Oxford University Press, 1962, p. 331. In this particular passage, the authors' remarks are directed toward indirect taxes. A few pages later, p. 335, they make it clear that the same analysis also applies to direct taxes: "Differences between the rates of direct taxes levied in the common market countries can raise the same problems as differences between the rates of indirect taxes." See also James E. Meade, Problems of Economic Union, University of Chicago Press, 1953, pp. 21-23 and Paul Wonnacott, "Policy Harmonization in Free Trade Groupings with Special Reference to the European Economic Community", in Harmonization of National Economic Policies Under Free Trade, pp. 46-51.

9/ For an alternative graphical analysis see Robert E. Baldwin, Nontariff Distortions of International Trade, The Brookings Institution, 1970, pp. 194-195.

10/ In practice the "average" rate must be appropriately calculated to reflect the economic importance of different commodities.

11/ It is assumed that the decline in production, measured by  $a_1a_0$ , exceeds the decline in consumption, measured by  $c_1c_0$ .

12/ For simplicity, this discussion has assumed that both the world demand for U.S. exports and the world supply of U.S. imports are perfectly elastic. Since the United States is a large exporter and importer, however, the world demand for its exports and world supply of its imports are both probably less than perfectly elastic. With a change from the origin to the destination principle, the imperfectly elastic demand and supply schedules would moderate the export increase and import decrease for more highly taxed goods and would also moderate the export decrease and import increase for more lightly taxed goods.

13/ Industry tax and sales data were obtained from numerous published and unpublished sources, names of which will be supplied on request.

14/ This also assumes that the volume of trade in sector  $i$  is small and thus has only a negligible impact on exchange rate movements.

15/ As stressed earlier, it is relative price changes that matter. If all goods or industries were taxed at 10 percent, changing the method of border tax adjustment would have no allocative effects.

16/ Two service industries have higher tax burdens than the electrical equipment industry.