



## Research

# The Role of Border Adjustments in International Taxation

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## Executive Summary

Border adjustments are taxes or tax exemptions that apply when payments for goods and services cross international borders. While familiar in the context of value added taxes, border adjustment has arisen in the context of possible U.S. tax reforms. In this regard, five points merit attention:

- Border adjustments may be implemented as taxes on imports and rebates on exports, or by excluding overseas sales and purchases from the computation of taxable income;
- Unlike tariffs on imports or subsidies for exports, border adjustments are not trade policy. Instead, they are paired and equal adjustments that create a level tax playing field for domestic and overseas competition;
- Border adjustments do not distort trade, as exchange rates should react immediately to offset the initial impact of these adjustments. As a corollary, border adjustments do not distort the pattern of domestic sales and purchases;
- Border adjustments eliminate the incentive to manipulate transfer prices in order to shift profits to lower-tax jurisdictions; and
- Border adjustments eliminate the incentive to shift profitable production activities abroad simply to take advantage of lower foreign tax rates.

These conclusions apply to border adjustments *per se*; there may be many other impacts when border adjustments are implemented as one part of a larger reform.

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## Introduction

Border adjustments are taxes or tax reductions that apply when payments for goods and services cross international borders. At present, they are used primarily in the context of the *value added tax* (VAT). Under a value added tax, taxes collected in a country are generally refunded through a border adjustment when goods or services produced in that country are exported; likewise, when goods and services are imported into that country a border adjustment is imposed on the value of imports. The main function of these existing border adjustments is to ensure that the VAT functions as a tax on consumption within the taxing jurisdiction; i.e., domestically produced goods and services consumed in other countries escape taxation, but goods and services produced elsewhere and consumed domestically are taxed. But border adjustments have other effects as well, notably to limit the extent to which companies operating across borders can manipulate the location of their tax base. This enhances the attractiveness of border adjustments as part of a well-functioning tax system.

On the other hand, border adjustments lack some other apparent benefits that have been attributed to them. In particular, border adjustments, in themselves, should not influence international trade, either by discouraging imports or encouraging exports. The belief that they do have these influences on international trade has proved to be something of a mixed blessing, not only generating support for their adoption but also leading critics to conclude that they violate generally accepted norms of international taxation. As discussed below, border adjustments can play an important role in tax reform, but that role is to help generate a more efficient, equitable and administrable system of business taxation, not to encourage exports or discourage imports.

## How Border Adjustments Work

Under the standard VAT, domestic producers collect tax on their *value added* – revenues less purchases – at each step of production, including both intermediate production and final retail sales. As the value of imports included in the chain of production has not been taxed domestically at the production level, a border adjustment at the VAT rate is applied to

imports. Thus, the entire value added in producing a good or service will have been taxed when the final sale occurs. If that sale is to domestic consumers, the result is a tax on domestic consumption. But if the final sale occurs to a foreign buyer the entire tax collected is refunded, through a border adjustment. Table 1 provides an illustration of how border adjustments operate.

<b>Table 1. VAT and Border Adjustments</b>					
<b>Business</b>	<b>Revenues</b>	<b>Purchases</b>	<b>VAT Base</b>	<b>Border Adjustment</b>	<b>Net Tax Base</b>
Farmer	50	25	25	25	50
Manufacturer	80	50	30	0	30
Retailer:					
Domestic Sale	100	80	20	0	20
Export	100	80	20	-100	-80

In the example in the table, there are three stages of production, with a farmer selling to a manufacturer, the manufacturer selling to a retailer, and the retailer making a final sale, either to a domestic consumer or a foreign buyer. The farmer's input is imported, and hence faces a border adjustment. Thus, all of the farmer's revenues are effectively subject to tax. If the retailer sells to a domestic consumer, the total VAT base is 100, equal to the revenues from consumer sales. If the retailer sells abroad, the border adjustment wipes out all levels of the VAT and hence there is no net VAT collected. Note that the border adjustment is typically implemented by imposing tax or providing a refund to the firm transacting with the foreign party. In this case, the seller to the foreign buyer would receive a tax refund equal to the VAT rate times 100, and the farmer buying from the foreign seller would pay tax on the import value of 25.

An alternative, and in some respects simpler, approach to implementing a border adjustment (as discussed in Auerbach, 2010) would be to impose the border adjustments on the relevant domestic businesses, adding 25 to the Farmer's tax base and subtracting 100 from the Retailer's in the export case. This approach would effectively exclude any export revenues from the tax base, since the 100 in revenues included in the tax base would be exactly offset by the 100 border adjustment; likewise for the costs of imported inputs, where the deduction of 25 would be exactly offset by the border adjustment of 25. This "netting" approach would leave only transactions between domestic parties in the tax base. Under this alternative approach, however, the Retailer would have a negative tax base, even

though its value added is positive. How to deal with such losses is discussed below.

This alternative method of implementing border adjustments is helpful in understanding why border adjustments eliminate an important avenue for tax base shifting. Suppose, for example that the Retailer's foreign buyer is the Retailer's own foreign subsidiary, and that the Retailer wished to reduce its domestic tax base by selling its export at a below-market price of 90. This would reduce its domestic tax base from 20 to 10, ignoring the border adjustment. But with the border adjustment in place, there would be no net change in the Retailer's domestic tax liability. Hence, it would have no incentive to underprice its exports. Indeed, to the extent that its subsidiary's corresponding understatement of the cost of its imported inputs increased tax liability abroad, the Retailer might actually face *higher* taxes overall from understating its export revenues in this manner.

## Border Adjustments and International Trade

It is generally accepted by economists that border adjustments themselves do not distort international trade (see, for example, the discussion in Auerbach, 1997). But this view often puzzles others, given that each of the components of border adjustments – a tax on imports and a tax refund for exports, equivalent to an export subsidy – are commonly seen as trade distortions and in violation of international norms and trade agreements. The key point is that the rate of border adjustments is paired and symmetric. Thus, the effects on trade of these two components – the import tax and the export subsidy – are offsetting. Adopting them together imposes no trade distortions even though adopting either separately would do so.

To see this, consider them in turn. An export subsidy would make domestic exporters more competitive internationally, increasing foreign demand for their products. If adopted by the United States, such a policy would also strengthen the dollar as a result of the surge in demand for exports, which would partially reduce this demand surge by raising the cost of US goods abroad. But we would expect only a partial offset to the initial increase in export demand. With the exchange rate rising, there would also be a rise in US imports (due to foreign goods being cheaper as a consequence of the stronger dollar). If the dollar rose fully to offset the impact of the export subsidy, there would be a worsening of the trade balance, since only imports would be rising. A worsening trade balance is inconsistent with the rise in the dollar, so one can conclude that in isolation the export subsidy would raise exports.

A tax on imports, on the other hand, would raise the US price of imports and reduce demand for them. This would also lead to dollar appreciation (because of weaker US demand for

imports), but not enough to offset the increase in import prices and the reduction in import demand. The same logic applies. A higher dollar and no decline in imports means there would have to be a fall in exports, and worsening of the trade balance, which again is inconsistent with the rise in the dollar. Once more, in isolation the import tax would reduce imports.

However, imposing the same rate of export subsidy and import tax would lead to dollar appreciation, the first by stimulating net exports and the second by discouraging imports. Combining the two policies, at the same tax rate – that is, introducing border adjustments – would result in a policy in which each component leads to dollar appreciation, but where the effects on trade would offset. For, if the dollar appreciates by enough to eliminate any price changes facing purchasers that result from the border adjustments (i.e., raising the foreign cost of exports to offset the export subsidy and lowering the domestic cost of imports to offset the import tariff), there would be no change in US exports or US imports, no change in the trade balance, and no inconsistency of the trade balance with dollar appreciation.

A corollary is that the border adjustment also does not distort domestic sales and consumption. Firms that sold domestically will continue to do so and consumers will continue their same pattern of purchases.

These conclusions hold when the export subsidy and import tariff are at equal rates, as is the case with border adjustments. It would not be true if the rates differed, in which case the net effect would be in the direction of the policy instrument with the higher rate. Nor is this analysis valid in the case of *targeted* export subsidies or import tariffs, which would favor exports and discourage imports for the domestic industries affected at the expense of unprotected domestic industries. But for a broad-based VAT, or any other broad-based domestic tax system that includes border adjustments as they exist under the VAT, the border adjustments themselves neither encourage nor discourage trade.

It should also be stressed that this neutrality with respect to trade applies to border adjustments specifically, but not necessarily to a broader change in the tax system. This is an especially important caveat in the context of current U.S. tax proposals. For example, if the US were to adopt a tax system that encourages saving relative to consumption, the resulting weakening of demand for imported consumer goods could well improve the US trade balance. But this would be a consequence of the change in the incentive to save, not because of the border adjustments.

One final question might be what might happen if exchange rates are managed, for example if some US trading partners seek to peg their exchange rates to the dollar. There are two potential responses to this question. First, countries pegging exchange rates typically do so

to maintain competitiveness of their domestic producers, and in this case maintaining competitiveness means allowing the dollar to appreciate to offset the effects of border adjustments. Second, to the extent that countries do seek to maintain their existing exchange rates relative to the dollar, they would be making the US more competitive with respect to their own economies.

# Border Adjustments and Business Tax Reform

While border adjustments are a familiar part of existing VATs, there is no logical reason why their use should be limited to VATs. The original use of border adjustments may have been motivated by their role in making the VAT into a tax on domestic consumption. But border adjustments also effectively shift the locus of taxation from the country of production to the country of sale, and this can be a considerable benefit in reducing the incentives and ability of multinational companies to shift taxable profits to low-tax jurisdictions.

In recent years, border adjustments have been put forward as a component of business cash flow taxation in proposals by the President’s Advisory Panel on Tax Reform (2005), Auerbach (2010), Auerbach, Devereux and Simpson (2010), and the House Republicans (2016). A cash flow tax has many advantages over the existing corporate income tax, including encouraging new domestic investment through the provision of immediate investment expensing and balancing incentives to use debt and equity finance through elimination of interest deductions. These proposals also include a transition away from the current US approach to worldwide taxation, by excluding the offshore profits of US corporations from taxation. But adopting a cash flow tax on a territorial basis – that is, without border adjustments – would leave in place the existing incentive for companies to shift profitable operations and reported profits from the United States to low-tax jurisdictions.

The most important difference between a cash flow tax and a VAT is that the cash flow tax would allow a deduction for domestic wages and salaries. Table 2 repeats the example from Table 1, showing how a cash flow tax with border adjustments would work, with changes from Table 1 indicated in red.

**Table 2. Cash Flow Tax and Border Adjustments**

<b>Business</b>	<b>Revenues</b>	<b><i>Wages &amp; Salaries</i></b>	<b>Purchases</b>	<b><i>Cash Flow Tax Base</i></b>	<b>Border Adjustment</b>	<b><i>Net Tax Base</i></b>
Farmer	50	<i>5</i>	25	<i>20</i>	25	<i>45</i>
Manufacturer	80	<i>15</i>	50	<i>15</i>	0	<i>15</i>
Retailer:						
Domestic Sale	100	<i>10</i>	80	<i>10</i>	0	<i>10</i>
Export	100	<i>10</i>	80	<i>10</i>	-100	<i>-90</i>

Because of the deduction for wages and salaries, the cash flow tax base is narrower than that of the VAT. But the border adjustment would work exactly as under a VAT, applying to export revenues and import purchases. As such, it would be possible, as discussed in the case of the VAT, to combine the border adjustments with the tax calculations of domestic producers, as offsets to the inclusion of export revenues and the deduction for import costs, effectively leaving both export revenues and import costs out of the tax base. The result would be a cash flow tax on domestic transactions, with cross-border transactions (as well as offshore transactions) ignored by the tax system.

Although a cash flow tax operates as just described, it could also be implemented through a combination of a VAT plus a reduction in payroll taxes. For example, suppose that there is an existing payroll tax of 15 percent (roughly the current rate of the combined employer and employee OASDI tax). Then, introducing a 15 percent VAT and eliminating the payroll tax would be equivalent to introducing a 15 percent cash flow tax. For example, the manufacturer in Tables 1 and 2 has 30 of value added, consisting of 15 of cash flow and 15 of wages and salaries. If the 15 of wages and salaries currently faces a payroll tax, then replacing the payroll tax with an equal-rate VAT would increase the tax base from 15 to 30, subjecting cash flow, in addition to wages and salaries, to tax. This is precisely what would happen if the payroll tax were left in place and an equal-rate cash flow tax introduced.

With no VAT currently in place in the United States, there might seem little reason to dwell on this equivalence between tax policies. However, the equivalence is important for two reasons. First, economists believe that taxes with equivalent structures should have identical or very similar economic effects, including how businesses and individuals respond to taxes and who ultimately bears the tax burden, i.e., the incidence of taxation. Second, international agreements and tax treaties aimed at ensuring that tax policies adhere to particular norms regarding trade and other economic activities should, to be coherent, treat



two equivalent policies in the same manner.

# Border Adjusted Cash Flow Taxation: Some Illustrations

Suppose that the current system of corporate taxation were replaced with a business cash flow tax with border adjustments. How would this affect the tax liability and the after-tax earnings of different types of firms? We consider several examples, in each case asking how the tax base and after-tax earnings change from those under the current tax system. It should be kept in mind that a company’s taxes and after-tax income would also be affected by a change in the applicable tax rate. Importantly, for purposes of illustration, we shall assume that the rate remains constant under the two systems. Thus, this analysis focuses on border adjustments *per se*, and not an economic analysis of broader tax reforms.

## 1. COMPANY A, WITH PRODUCTION OPERATIONS EXCLUSIVELY IN THE UNITED STATES

The next six examples consider the case of a firm that has operations exclusively in the United States, but may export or import.

### A. With all sales to domestic buyers and all purchases from domestic sellers

Assume that company A has the characteristics of the manufacturer in Tables 1 and 2, with domestic sales of 80, domestic input purchases of 50, and wages and salaries of 15. Suppose also that that A has interest expense of 5, that 20 of the input purchases are for capital goods, and that under existing rules the company receives depreciation deductions of 15 on its current and past purchases of capital goods. Table 3 shows the tax base for company A under the current system and the new cash flow tax.

Table 3. Current and New Tax Base: Domestic Firm with no Exports or Imports							
Tax Base	Revenues	Wages & Salaries	Capital Purchases	Depre-ciation	Other Purchases	Interest Expense	Total
Current	80	15	—	15	30	5	15



New	80	15	20	—	30	—	15
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In this example, the firm has the same tax liability under the new system as under the current system, because the higher deductions for expensing rather than depreciation just offset the elimination of the interest deduction. Firms with more debt in their capital structure would generally fare worse under the new system, while firms with more capital investment would generally fare better.

## B. With some sales to foreign buyers and all purchases from domestic sellers

Suppose now that the same firm has one eighth of its sales to foreign purchasers, so that revenues from taxable sales equals 70 under the cash flow tax. The firm's tax base is now lower under the new system, as illustrated in Table 4.

Table 4. Current and New Tax Base: Exporting Firm							
Tax Base	<i>Taxable Revenues</i>	Wages & Salaries	Capital Purchases	Depre-ciation	Other Purchases	Interest Expense	Total
Current	80	15	—	15	30	5	15
New	<i>70</i>	15	20	—	30	—	<i>5</i>

However, this tax saving does not mean that the firm does better after-tax under the new system, because the revenues from exporting will fall. Assuming that the world price – the price in the currencies of other countries, where economic circumstances have not changed – of the goods being exported remains the same, and that the dollar appreciates to offset the border adjustment – as would be consistent with no change in the US trade balance – the firm's export revenues will be less than 10, because foreign-currency sales receipts buy fewer appreciated dollars. If the tax rate is 20 percent, then the firm's export revenues will be 8 rather than 10. This, in turn means that the firm's after-tax cash flow will be the same in the two cases, 80 percent of 15 = 12 under the current system, and 80 percent of 5 = 4 + nontaxable receipts of 8 = 12 under the new system.

## C. With all sales to domestic buyers and some purchases from foreign sellers

Suppose now that the firm's sales are all domestic but that it purchases one third of its inputs from foreign sellers, so that expenses from deductible (non-capital) purchases now

equals 20 under the cash flow tax. The firm's tax base is now higher under the new system, as illustrated in Table 5.

<b>Table 5. Current and New Tax Base: Importing Firm</b>							
<b>Tax Base</b>	<b>Revenues</b>	<b>Wages &amp; Salaries</b>	<b>Capital Purchases</b>	<b>Depre-ciation</b>	<b><i>Deducted Purchases</i></b>	<b>Interest Expense</b>	<b>Total</b>
Current	80	15	—	15	30	5	15
New	80	15	20	—	<i>20</i>	—	<i>25</i>

However, this higher tax cost does not mean that the firm does worse after-tax under the new system, because its costs of imported goods will fall. Again assuming that the world price of the goods remains the same, and that the dollar appreciates to offset the border adjustment, the firm's import costs will be 8, rather than 10, if the tax rate is 20 percent. This again means that the firm's after-tax cash flow will be the same in the two cases, 80 percent of 15 = 12 under the current system, and 80 percent of 25 = 20 - nondeductible expenses of 8 = 12 under the new system.

## **D. With some sales to foreign buyers and some purchases from foreign sellers**

Combining the two previous cases, suppose that one eighth of the firm's sales are exports and one third of its inputs are from foreign sellers, so that revenue from taxable sales equals 70 and the cost of deductible purchases equals 20 under the cash flow tax. The firm's tax base is now once again the same under the two systems, as illustrated in Table 6. And, once again, the firm's after-tax cash flows are the same, 80 percent of 15 = 12 under the current system versus 80 percent of 15 + nontaxable receipts of 8 - nondeductible expenses of 8 under the new system = 12.

<b>Table 6. Current and New Tax Base: Importing and Exporting Firm</b>							
<b>Tax Base</b>	<b><i>Taxable Revenues</i></b>	<b>Wages &amp; Salaries</b>	<b>Capital Purchases</b>	<b>Depre-ciation</b>	<b><i>Deducted Purchases</i></b>	<b>Interest Expense</b>	<b>Total</b>
Current	80	15	—	15	30	5	15
New	<i>70</i>	15	20	—	<i>20</i>	—	15

## E. With substantial sales to foreign buyers and all purchases from domestic sellers

Consider again case B, but with the firm exporting a larger share of its production, say one quarter rather than one eighth. The effect of this increase in exports is shown in Table 7.

Table 7. Current and New Tax Base: Firm with Substantial Exports							
Tax Base	Taxable Revenues	Wages & Salaries	Capital Purchases	Depre-ciation	Other Purchases	Interest Expense	Total
Current	80	15	—	15	30	5	15
New	60	15	20	—	30	—	-5

In this case, the firm shows a net loss for tax purposes. But its underlying economic profitability is unchanged. Mechanically, the after-tax cash flows are 80 percent of 15 = 12 under the current system versus 80 percent of -5 (= -4) plus nontaxable receipts of 16 = 12 under the new system. The only issue is how to handle the losses.

While one approach to dealing with this loss is to follow the current system's approach, i.e., allowing loss carrybacks and carryforwards, the reasons for the loss are different in this case, because the firm has underlying profitability. The usual logic of using carrybacks and carryforwards as an averaging mechanism may not suffice – a firm for which exports may account for a large share of revenues may remain both very profitable and yet in a loss position indefinitely. Thus, alternative approaches may be needed if further analysis suggests that an important share of business activity is among firms facing such circumstances. One option would be to allow companies to offset losses against other taxes they pay, such as payroll taxes. An alternative is to maintain a separate calculation for border adjustments and make those refundable, rather than taking the simplified approach of netting border adjustments against export revenues.

## F. With all sales to domestic buyers and substantial purchases from foreign sellers

Suppose now that the firm's sales are all domestic but that it purchases two thirds of its inputs from foreign sellers, up from the one third in the example in Table 6. The expenses from deductible non-capital purchases now equal 10 under the cash flow tax. The firm's tax base is now even higher under the new system, as illustrated in Table 8.

**Table 8. Current and New Tax Base: Firm with Substantial Imports**

<b>Tax Base</b>	<b>Revenues</b>	<b>Wages &amp; Salaries</b>	<b>Capital Purchases</b>	<b>Depre-ciation</b>	<b><i>Deducted Purchases</i></b>	<b>Interest Expense</b>	<b>Total</b>
Current	80	15	—	15	30	5	15
New	80	15	20	—	<i>10</i>	—	<i>35</i>

Once more, however, this higher tax cost does not mean that the firm does worse after-tax under the new system, because its costs of imported goods will fall. Again assuming that the world price of the goods remains the same, and that the dollar appreciates to offset the border adjustment, the firm's import costs will be 16, rather than 20, if the tax rate is 20 percent. This again means that the firm's after-tax cash flow will be the same in the two cases, 80 percent of  $15 = 12$  under the current system, and 80 percent of  $35 = 28$  - nondeductible expenses of  $16 = 12$  under the new system.

## 2. COMPANY B, PRODUCING IN THE UNITED STATES AND A LOW-TAX FOREIGN COUNTRY

We now consider the case of a multinational company with operations in the United States and abroad, perhaps a US parent company with a foreign subsidiary. For the sake of simplicity, we assume that the foreign subsidiary does not repatriate profits to the US parent during the period under consideration. We further assume that the US parent company purchases some of its inputs from its foreign subsidiary and exports some of its output to the foreign subsidiary. Finally, we assume that the foreign jurisdiction has a territorial system with a low tax rate.

### A. Arm's length transfer prices

In this example, the US parent sells one-eighth of its output (10) for export and imports one third of its non-capital inputs (10), just as in case 1D and Table 6. The foreign subsidiary's inputs include the US parent's exports (10) as well as purchases from third party companies abroad (10), and its exports include those to the US parent (10) as well as sales to third party companies abroad (20).

**Table 9. Current and New Tax Base: Arm's Length Transfer Pricing**

US Tax Base	Taxable Revenues	Wages & Salaries	Capital Purchases	Depre-ciation	Deducted Purchases	Interest Expense	Total
Current	80	15	—	15	30	5	15
New	70	15	20	—	20	—	15
<b>Foreign Tax Base</b>							
Current	30				20		10
New	24				16		8

In this example, the US tax bases under the old and new system are just as in Table 6. For the foreign tax base, and assuming again that the US tax rate is 20 percent, there is a decline, measured in dollars, in the sales by the foreign subsidiary (from 30 to 24, including a decline in the value of sales to the US parent from 10 to 8), and in input purchases (from 20 to 16, including a decline in the value of purchases from the US parent from 10 to 8), with a corresponding change in the foreign tax base, valued in dollars (and no change when expressed in the foreign currency). Note that this effect on the value of the foreign tax base applies more generally to everything measured in foreign currency; because of dollar appreciation, the values of cash flows and assets abroad will also decline in dollar terms.

## B. Manipulated transfer prices

In the next example, the US company understates the value of its exports to its foreign subsidiary and overstates the value of its imports from the foreign subsidiary.

We assume that exports are reported at half their true value (5) and imports at 150 percent of their true value (15). This results, under the current system, in an increase in the reported value of US imports from the foreign subsidiary equal to 5, and a decline in the reported value of US exports to the foreign subsidiary equal to 5, and a shift in profits equal to 10 from the US parent to the foreign subsidiary. (Compare the results in Tables 9 and 10.) This shift reduces the company's overall tax burden, because the tax rate in the foreign country is lower than that in the United States.

Table 10. Current and New Tax Base: Manipulated Transfer Pricing							
US Tax Base	Taxable Revenues	Wages & Salaries	Capital Purchases	Depre-ciation	Deducted Purchases	Interest Expense	Total

Current	75	15	—	15	35	5	5
New	70	15	20	—	20	—	15
<b>Foreign Tax Base</b>							
Current	35				15		20
New	28				12		16

Under the new system, however, there is no change in the US tax base as a result of the change in transfer prices – it remains at 15, its value in Table 9 – while the foreign tax base doubles from 8 to 16. Thus, the multinational would have no incentive to use transfer prices to shift profits away from the United States, even if the tax rate in the foreign country is very low. Indeed, it would benefit by shifting profits *to* the United States, to reduce the taxes it pays in the low-tax country.

### 3. COMPANY C, PRODUCING ONLY IN THE UNITED STATES OR A LOW-TAX FOREIGN COUNTRY

Border adjustments do not just eliminate the incentive for multinational firms to shift profits to low-tax countries. They also eliminate the incentive to shift actual operations to low-tax countries. Consider the case of a company selling in the United States and deciding whether to produce exclusively in the United States or in a low-tax country. For simplicity, we assume that aside from taxes the costs of production are the same in the two countries. Tables 11 (for domestic production) and 12 (for foreign production) show how the US and foreign tax bases would be affected by the tax reform, assuming the same revenues and costs as in previous examples. In the case of foreign production, we assume that the final sale to US purchasers is still made by the company's US operation.

Under current law, the tax base would be 15 in the United States and 0 abroad for domestic production, and 0 in the United States and 15 abroad for foreign production. Thus, profits before tax would be 15 overall regardless of whether production occurs in the United States or abroad. The company would have a very strong incentive to locate its production in the low-tax country, where its after-tax profits based on the before-tax profits of 15 would be higher.

Under U.S. adoption of the destination-based cash-flow tax, there would be no change in the company's tax base if it produces domestically – it would still be 15 in the United States and 0 in the foreign country. If the company produces abroad, its foreign tax base would remain

the same in foreign currency, but reduced from 15 to 12 by the dollar's appreciation. The company's US sales would be fully taxable, because the border adjustment would eliminate the deduction of its import from its foreign operation. This would leave after-tax domestic profits at 0, as the after-tax revenues of 64 (80 percent of 80) would just cover the non-deductible import costs of 64. Thus, the company's overall revenue would be the foreign before-tax profits of 12 less foreign taxes. As after-tax profits with domestic US production are 12, the company would choose to produce in the United States, even if the tax rate in the foreign country is very low.

**Table 11. Current and New Tax Base: Domestic Production and Sales**

<b>US Tax Base</b>	<b>Taxable Revenues</b>	<b>Wages &amp; Salaries</b>	<b>Capital Purchases</b>	<b>Depre-ciation</b>	<b>Deducted Purchases</b>	<b>Interest Expense</b>	<b>Total</b>
Current	80	15	—	15	30	5	15
New	80	15	20	—	30	—	15
<b>Foreign Tax Base</b>							
Current	0	0			0		0
New	0	0			0		0

**Table 12. Current and New Tax Base: Foreign Production**

<b>US Tax Base</b>	<b>Taxable Revenues</b>	<b>Wages &amp; Salaries</b>	<b>Capital Purchases</b>	<b>Depre-ciation</b>	<b>Deducted Purchases</b>	<b>Interest Expense</b>	<b>Total</b>
Current	80	0	—	0	80	0	0
New	80	0	0	—	0	—	80
<b>Foreign Tax Base</b>							
Current	80	15	—	15	30	5	15
New	64	12		12	24	4	12



# Border Adjustments, Tax Revenue and Tax Burden Distribution

Leaving aside any other elements of a business tax reform plan, US adoption of border adjustments would have a positive impact on tax revenue for two distinct reasons. First, with a large trade deficit, the US would collect far more from taxing imports than it would lose from forgiving tax on exports. This effect could well change in the future, to the extent that the US trade balance improves, as many expect must happen.

Second, because multinational companies would have strong incentives to expand US production activities, dynamic scoring of the effects of border adjustments should increase projected revenues.

The economic incidence of border adjustments comes about through dollar appreciation, which, as discussed in relation to Tables 9-12, reduces the dollar value of foreign cash flows to US owners. Thus, it is these owners who bear the burden of the border adjustment. It should be kept in mind, however, that border adjustments will also induce behavioral responses that are likely to strengthen the US economy and benefit the owners of assets in the United States.

## Border Adjustments and the WTO

There is an open question whether a destination-based cash flow tax (DBCFT) would be determined to be compliant with the rules of the World Trade Organization. There are two primary issues here. First, WTO rules currently limit border adjustments to “indirect” taxes – taxes on transactions (e.g., sales, payroll, etc.) rather than “direct” taxes on individuals or businesses. It is not clear that a DBCFT would be successfully characterized as an indirect tax, even though it is economically equivalent to a policy based on indirect taxes (a VAT and a reduction in payroll taxes), and even though the distinction between direct and indirect taxes has little meaning and no bearing on any economic outcomes.

In addition, there might be concern under existing WTO rules regarding the combination of border adjustments with a deduction for domestic labor costs, since the border adjustment assessed on imported goods applies to the entire cost of the imports, with no deduction for the labor costs that went into the production of these imported goods. Some might see this treatment as favoring domestically produced goods over imported ones. But such an inference makes little sense from an economic perspective. Again, consider the equivalent policy of introducing a VAT and reducing payroll taxes, both elements of which are

compatible with WTO rules. A reduction in payroll taxes would indeed encourage domestic production and employment to the extent that it lowered domestic production costs. But this is true of any reduction in taxes on US production, and it is difficult to comprehend why international trade rules should dictate the tax rate a country applies uniformly to its own domestic economic production activities.

## References

Auerbach, Alan J. "The Future of Fundamental Tax Reform." *The American Economic Review* 87, no. 2 (1997): 143-46. <http://www.jstor.org/stable/2950901>

Auerbach, Alan J. "A Modern Corporate Tax." Center for American Progress/The Hamilton Project (2010).  
<https://cdn.americanprogress.org/wp-content/uploads/issues/2010/12/pdf/auerbachpaper.pdf>

Auerbach, Alan J., Michael Devereux and Helen Simpson. "Taxing Corporate Income," in J. Mirrlees et al., eds., *Dimensions of Tax Design* (2010) Oxford: Oxford University Press: 837-893. <https://www.ifs.org.uk/uploads/mirrleesreview/dimensions/ch9.pdf>

President's Advisory Panel on Federal Tax Reform. *Simple, Fair, and Pro-Growth: Proposals to Fix America's Tax System* (2005).  
[http://govinfo.library.unt.edu/taxreformpanel/final-report/TaxPanel\\_5-7.pdf](http://govinfo.library.unt.edu/taxreformpanel/final-report/TaxPanel_5-7.pdf)

Ways and Means Committee, U.S. House of Representatives, *A Better Way Forward* (2016).  
[http://abetterway.speaker.gov/\\_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf](http://abetterway.speaker.gov/_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf)

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