

# Complications from the Border-Adjusted Cash Flow Tax

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In defending the border tax adjustment (BTA) in their tax reform proposal,<sup>1</sup> House Speaker Paul Ryan and Ways and Means Committee Chair Kevin Brady say that one of its objectives—or side benefits—is to encourage exports and discourage imports. The plan, for example, would subject imports to the proposed 20 percent cash flow tax while exports would be exempt. Businesses, especially retailers and firms involved in global supply chains, are bound to be affected, and lobbyists for the potential winners and losers are lining up in droves to make their arguments in Congress.

The Ryan-Brady tax reform blueprint claims that the new tax adjustment would merely align US tax policy with that of its trading partners. “For the first time ever, the United States will be able to counter the border adjustments that our trading partners apply in their VATs [value added tax],” it asserts.<sup>2</sup> And in a recent speech to the US Chamber of Commerce, where many members are uneasy about the proposal, Chairman Brady argued that the tax rate would be the same for imports and domestic products.

This border-adjusted tax is stunningly simple and based on a pro-growth principle: if your product or service is consumed in the United States it is taxed equally. It will bear the same rate of U.S. tax regardless of where it is produced, regardless of whether you’re a foreign company or a domestic one.... Many of our international companies already deal with border adjustable taxes in the more than 100 countries that currently impose them.<sup>3</sup>

Does this argument hold water? The answer is no. The current proposal is unlike a VAT for an important reason: It excludes wages from the tax base. Products will in fact face different tax rates in the United States, depending precisely on where products were produced. The degree of overall discrimination will depend on the extent to which the real exchange rate adjusts.

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1. *A Better Way: Our Vision for a Confident America—Tax*, June 24, 2016, [http://abetterway.speaker.gov/\\_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf](http://abetterway.speaker.gov/_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf) (accessed April 3, 2017).

2. Ibid.

3. House Ways and Means Committee, “Chairman Brady Delivers Remarks at the U.S. Chamber of Commerce,” press release, January 24, 2017, Washington, <https://waysandmeans.house.gov/chairman-brady-delivers-remarks-u-s-chamber-commerce/> (accessed on April 4, 2017).

This note makes three points comparing the proposed border tax adjustment and the VAT: First, the VAT offset at the border is not an import tariff and is not protectionist, so there is nothing that needs to be “countered.” Second, the border adjustment in the cash flow tax is different from a VAT because comparable goods are not treated symmetrically. Third, despite discrimination, in the long run the real exchange rate is likely to adjust to offset the border adjustment, though the short-run dynamics of implementing a border tax adjustment are complex and likely to be disruptive.

## A VAT IS NOT A TARIFF

A VAT charged on imports at the border has long been confused with protectionism. For example, consider then presidential candidate Donald Trump’s assessment of the North American Free Trade Agreement (NAFTA) in the September 2016 election debate: “Let me give you the example of Mexico. They have a VAT tax. We’re on a different system. When we sell into Mexico, there’s a tax...16 percent, approximately. When they sell into us, there’s no tax. It’s a defective agreement.”<sup>4</sup>

This logic is faulty because VATs are consumption taxes. As such, all goods sold in Mexico irrespective of where they are produced are subject to the same tax. Goods imported into Mexico must also face the tax,

or they would have preferential treatment relative to domestic goods. The border adjustment is made precisely to level the playing field. US states act similarly when they apply sales taxes. All goods sold in Maryland face a 6 percent sales tax irrespective of whether they are produced in Maryland, imported from other US states, or imported from another country.

A simple example demonstrates how the VAT works as a tax on final consumption by turning the producer into the tax collector. Consider the tax paid on a football that is produced with purchased leather (or pigskin) and labor and subject to a 20 percent

**Table 1 Tax flow for 20 percent VAT (dollars)**

		Domestic football (1)	Global supply chain football (2)	Imported football (3)
Pigskin	Sales price	5.00	5.00	n.a.
	Tax base	5.00	5.00	n.a.
	Tax collected	1.00	1.00	n.a.
Football	Sales price	10.00	10.00	10.00
	Tax base	10.00	10.00	10.00
	Tax collected	2.00	2.00	2.00
	Rebate			n.a.
Total tax		2.00	2.00	2.00
Tax rate (percent)		20	20	20

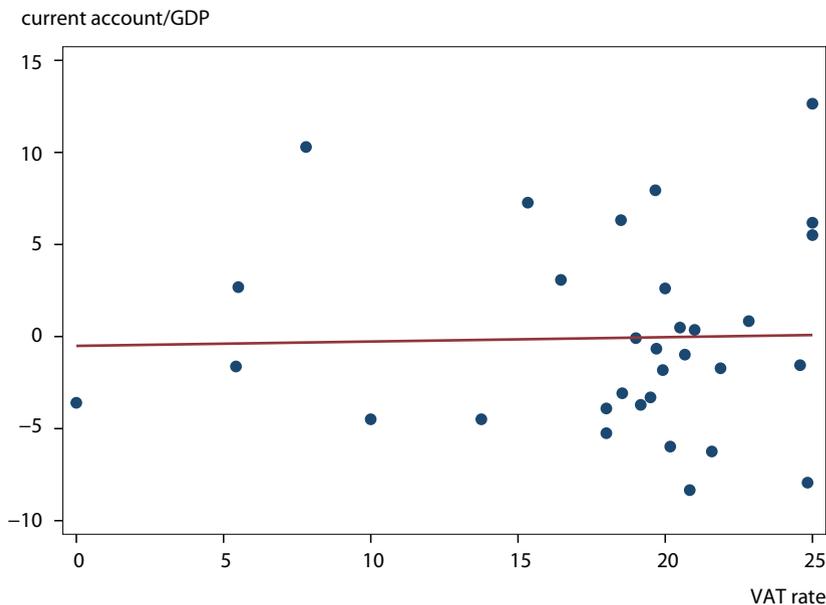
n.a. = value does not affect the tax; VAT = value added tax

Source: Author’s calculations.

VAT. Column 1 in table 1 shows how a VAT travels through the production chain without cascading. The producer of the pigskin sells it to the football manufacturer for \$5 and collects \$1 in VAT, which goes to the treasury. When the football is sold for \$10, \$2 in VAT is collected. The producer also receives a refund of \$1 for the VAT that was paid when the leather was purchased. Although both the materials producer and the football manufacturer pay VAT, the total tax is exactly 20 percent, because final-goods producers receive rebates for taxes paid on intermediates. The VAT is effectively a tax on final consumption.

4. Presidential Debate at Hofstra University in Hempstead, New York, September 26, 2016, transcript available at <http://www.presidency.ucsb.edu/ws/index.php?pid=118971> (accessed on April 5, 2017).

**Figure 1 VAT rates and the current account balance of OECD countries, 2005–15**



rates on the horizontal axis and the average current account balance as a share of GDP on the vertical axis, using data from 2005 to 2015. The correlation is close to zero and insignificant.

### UNLIKE A VAT, A BORDER TAX ADJUSTMENT IS DISCRIMINATORY

The key difference between a VAT and a border tax adjustment of a cash flow tax is that the latter will vary across producers, depending on whether they are part of global supply chains and on how much labor they use in production.

Consider the proposed 20 percent border tax adjustment in the case of the football presented earlier. If the producer is part of a domestic supply chain (table 2, column 1), the pigskin seller and the football producer pay the border tax adjustment on their cash flow. As in the previous example, the pigskin producer sells the leather for \$5, but in this case deducts the labor cost of \$3 and is taxed only on the cash flow of \$2. The football producer will deduct both labor and pigskin costs and pay the tax on the \$3 of cash flow. The total tax is \$1, or 10 percent of the price, collected not at the border but as a corporate tax.

What happens if the intermediates are imported? If the pigskin is imported, the purchase cannot be deducted. The football producer will pay tax on the full \$5 in imported pigskin. The football producer who is part of a global supply chain, who looked the same as the domestic supply chain producer under a VAT, will now face a higher tax rate than the domestic producer because the tax base under the border adjustment

The VAT is not discriminatory.<sup>5</sup> With an idealized VAT—applied equally to all consumption—everything in a country gets taxed at the same rate. Whether the football is domestically produced (column 1), produced using imported pigskin (column 2), or entirely imported (column 3), the tax is the same. In contrast, exports are consumed elsewhere and thus get taxed in the location where they are consumed. The tax on imported goods at the border is not protectionist; it merely serves to level the playing field for domestic and foreign goods consumed in the same location.

There is no evidence that VAT rates affect the current account balance. Figure 1 shows average VAT

5. In most countries, some products or sectors, such as government and health, are excluded. Such exclusions will tend to exaggerate demand in those sectors. To the extent that they are nontraded sectors, exclusions could reduce overall trade but would not be expected to affect the trade balance. Similarly, in some countries, especially developing countries, export rebates may not be complete, which will also shift production into the nontraded sectors. Even in these cases, like goods are treated symmetrically.

**Table 2 Tax flow for 20 percent border tax adjustment (dollars)**

		Domestic football (1)	Global supply chain football (2)	Imported football (3)
Pigskin	Sales price	5.00	5.00	n.a
	Labor	-3.00	n.a	n.a
	Tax base	2.00	n.a	n.a
	Tax collected	0.40	n.a	n.a
Football	Sales price	10.00	10.00	10.00
	Pigskin	-5.00	n.a	n.a
	Labor	-2.00	-2.00	n.a
	Tax base	3.00	8.00	10.00
	Tax collected	0.60	1.60	2.00
Total tax		1.00	1.60	2.00
Tax rate (percent)		10	16	20

n.a. = value does not affect the tax

Source: Author's calculations.

includes everything except labor. The tax will be \$1.60, or 16 percent in this simple case. The differential treatment of domestic and imported inputs is why companies that use a lot of imported inputs are concerned.

Finally, if the football is imported, it will face a 20 percent tax when it is sold. In contrast, firm income from exports will be untaxed.

As a result of the wage exclusion, tax rates will vary across industries and even across firms within industries. In this example, for domestically consumed goods, the domestic producer pays the lowest tax rate of 10 percent. A producer who is in a global supply chain importing the pigskin pays an intermediate rate of 16 percent. And the fully imported football pays the highest rate of 20 percent. These different tax rates apply to goods sold in the same market.

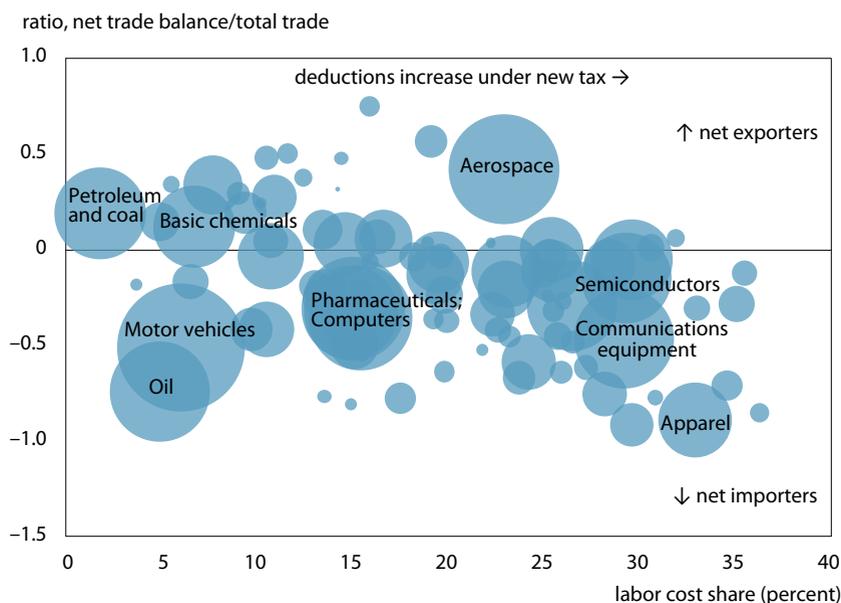
The tax rates vary both by how international the production process is and by the labor cost share. If the labor cost share were zero, the tax rate would be uniform across the three types of production process at 20 percent since there would be no exclusion. Firms with a high labor cost share and/or high net exports will pay the lowest tax rates.

Border adjustment through a business tax raises other potential problems for uniformity. Firms that are large net exporters may have a negative tax rate, requiring some rebates, which will be politically difficult to enforce, as they will appear to be subsidies to large and successful firms like Boeing. In addition, foreign firms selling directly to consumers, for example through ecommerce, could escape the tax if it is levied at the corporate level, creating an uneven playing field for retail.

### What Industries Would Benefit?

Figure 2 below shows the share of net exports for total trade in a sector, relative to how labor intensive the sector is, using data for the most recent year available (2015 for trade and 2014 for labor cost share). The size of the bubbles reflects the size of total trade in the sector. The vertical axis records the net trade balance rela-

**Figure 2 Industries that would benefit under border tax adjustment**



Note: Size of bubbles reflects size of total trade in the sector. Labor share data for industrial products from the Division of Industry Productivity Studies (DIPS) in the Office of Productivity and Technology at the Bureau of Labor Statistics (BLS). Labor share data for minerals and mining calculated from BLS data on wage bill and total revenues. Trade data from US Census Bureau. Data on labor cost share for agricultural sectors not available. Data for the most recent year available: 2015 for trade and 2014 for labor cost share.

Sources: Bureau of Labor Statistics; US Census Bureau.

tive to total trade in the sector. Industries above the horizontal axis export more than they import. Exports are tax free, so industries benefit from a relatively lower tax rate as net exports increase.

The horizontal axis records the labor cost share by industry. Labor cost share is a direct measure and does not include the labor embodied in intermediates. Industries on the far right with higher labor cost shares have relatively larger deductions under the new tax.

Two things are clear: (1) Most industries are net importers; thus, they believe they will be forced to raise prices under the proposal. (2) The industries that will gain the most—those with a relatively high labor cost share and positive net exports—are largely absent in the United States. The aerospace industry is the lone exception.

This breakdown implies that many more big lobbies will be against the border tax adjustment than in favor. Some of the biggest lobbies are likely to foresee losses. Motor vehicles, for example, is a relatively low labor cost sector and is also a net-importing sector. The oil and gas and pharmaceuticals sectors have similar profiles.

Note that because data for the labor cost share for agriculture were not available, this sector is not included in figure 2. However, as a strong net exporter (net exports/total trade=0.82), the sector is likely to support the tax change. The most important industry in this sector is oilseeds and grains, which accounts for roughly 3 percent of total US merchandise exports.

The industries on the right (figure 2) will be the most affected by the discriminatory treatment of imports. In these industries, the high labor share is excluded from domestic production but not from imports

when calculating the tax base. Such industries include the typical labor-intensive goods, like apparel, metals, and furniture, but also some high-value products, like semiconductors and communications, where the labor cost share is high in part because the workers are relatively expensive.

## **DOES A REAL EXCHANGE RATE APPRECIATION CHANGE THE RESULTS?**

International economic theory predicts that the real exchange rate will appreciate to offset the border tax adjustment, so there should be no concern about effects on trade or competitiveness (Feldstein and Krugman 1990). Because exports are not taxed, theory expects that firms will prefer to increase exports, which in turn will push up supply abroad and increase the demand for dollars to buy those goods. In contrast, imports are taxed, which will decrease the demand for imports and hence reduce the demand for foreign currency.

In addition, the supply changes will exert pressure on domestic prices. More goods will be exported and fewer imported, so the decline in domestic supply will push prices up. If imports cost more, they will put additional pressure on prices. These forces will appreciate the real exchange rate, which in the long run is likely to offset the border adjustment.

## **TIMING AND EFFECT OF REAL EXCHANGE RATE ADJUSTMENT**

New research on changes in border-adjusted consumption taxes around the world (see Freund and Gagnon 2017) suggests that the real exchange rate will eventually appreciate to offset the border tax adjustment. However, the adjustment that will follow implementing a border tax adjustment on a cash flow tax is also very likely to be messier than a VAT.

In order for the global producer's profits to remain unchanged under a border adjustment of 20 percent, the exchange rate would need to appreciate by 25 percent or prices and wages would need to rise by 25 percent. To demonstrate using the example of the football, the first two columns of table 3 show a domestic producer's profits with and without price adjustment when a border tax adjustment is applied: The nominal exchange rate adjustment does not affect the domestic producer. Column 3 shows the globally integrated producer's profits with no real exchange rate adjustment (which effectively remain the same as in column 2, table 2): The globally integrated producer is worse off.

With a domestic currency appreciation of 25 percent (equivalent to a depreciation of the other currency by 20 percent<sup>6</sup>), however, the 20 percent increase in spending on taxes is exactly offset by a 20 percent cheaper import bill (column 4). The importing firm's after-tax profit ends up the same as the domestic producer (column 1). Similarly, as shown in column 5, if prices and wages rise by 25 percent, there will be no discrimination against imports (compare with the domestic producer in column 2).

The fact that the nominal exchange rate or prices and wages can adjust to cancel out the border tax tends to be overlooked in the debate. However, in terms of the adjustment, and who wins and who loses, it will have important implications. A nominal exchange rate adjustment will increase the value of US assets held by foreigners and reduce the value of foreign assets held by US residents. It will also harm foreign borrowers

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6. Exchange rates are ratios, so the extent of appreciation or depreciation depends on which currency is the base. For example, assume the ratio of the foreign to home currency is 1, and the home currency appreciates by 25 percent; it is now worth 1.25/1, which from the foreign currency's perspective is  $1/1.25=0.8$ —a 20 percent depreciation.

**Table 3 Real exchange rate appreciation may offset border tax adjustment (dollars)**

		Domestic football		Global supply chain football		
		20 percent BTA	25 percent price and wage increase, 20 percent BTA	No appreciation, 20 percent BTA	25 percent appreciation, 20 percent BTA	25 percent price and wage increase, 20 percent BTA
		(1)	(2)	(3)	(4)	(5)
Pigskin	Sales price	5.00	6.25	5.00	4.00	5.00
	Labor	3.00	3.75	n.a.	n.a.	n.a.
	Tax base	2.00	2.50	n.a.	n.a.	n.a.
	Tax collected	0.40	0.50	n.a.	n.a.	n.a.
Football	Sales price	10.00	12.50	10.00	10.00	12.50
	Pigskin	5.00	6.25	n.a.	n.a.	n.a.
	Labor	2.00	2.50	2.00	2.00	2.50
	Tax base	3.00	3.75	8.00	8.00	10.00
	Tax collected	0.60	0.75	1.60	1.60	2.00
Total tax (dollars)		1.00	1.25	1.60	1.60	2.00
Tax rate (percent)		10	10	16	16	16
Football profit		2.40	3.00	1.40	2.40	3.00

BTA = border tax adjustment; n.a. = value does not affect the tax

Source: Author's calculations.

with dollar loans that will now be more expensive to service. In contrast, a price and wage increase will reduce the real wealth of all US residents. It will help US borrowers, whose loans will now be worth less in real terms.

Existing evidence on what happens after a VAT is raised suggests that a good deal of adjustment happens, at least initially, through prices (Zodrow et al. 2010). Freund and Gagnon (2017) also find that price increases tend to immediately follow VAT implementation. There's even a name for the price response to the VAT: It's called full forward shifting.

While the exchange rate could more quickly offset the border tax adjustment, trade may not be the most important determinant of the dollar exchange rate. Other important factors include: financial flows; the many countries that have exchange rates pegged to the dollar; and the fact that the dollar is the dominant currency for reserves, commodity prices, and trade invoicing. If the exchange rate does not appreciate, adjustment will likely come through trade initially, followed by price and wage adjustment.

The border tax adjustment of cash flow taxes is a new area, and how the tax will be transmitted to prices is much less clear than the simple offset seen with a VAT. As shown above, the effective tax rates from the proposed border tax adjustment vary across sectors and even firms within an industry. This variation implies that price adjustments will also vary across firms and industries, leading to a messy adjustment. The price and wage response will thus take time to be realized and transmitted through the economy, suggesting there will also be temporary and potentially large trade effects. Moreover, it's unknown if the Federal Reserve will accommodate rising prices. Unlike a VAT where there is a one-time price increase, the price pressure from a border tax adjustment may take time to be felt and look less like a one-time shock.

Whether adjustment comes through prices, exchange rates, or trade, there will be disruptions. The transition could disrupt the global financial system if a big nominal appreciation occurs, or it could affect consumers and lenders if prices are the first casualty. Sudden and large import reductions and export expansions, even if temporary, would offer evidence that US policy is breaking international rules.

## CONCLUSIONS

The VAT is a sales tax that treats all products symmetrically, while the border adjusted cash flow tax is discriminatory. Under the proposed border tax adjustment, firms will experience different tax rates, depending on how labor intensive and import dependent they are. Many large industries stand to lose because of their high dependence on imports.

Over the medium run, the real exchange rate is likely to adjust and offset the differential effects of border adjustment on corporate profits, but the short-run effects will be messy. A full offset would require a 25 percent appreciation of the dollar or a 25 percent increase in prices and wages, or some combination. These are very large movements, which will be disruptive. Moreover, uncertainty around the magnitude and timing of exchange rate adjustment, as well as the effects on pricing, has led many industry lobbies to oppose it.

Amending the proposed border tax to be a border adjusted VAT, while reducing (not eliminating) labor and business taxes, would offer many of the same benefits in efficiency—in particular, discouraging inversions and transfer pricing—without risking large disruptions. It would also be in line with international rules (see Bown 2017).

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