



The Border Adjustment Tax and Corporate Tax Reform

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Summary

Both House Republicans' 2016 tax plan and the more recent President Trump's tax plan envision a rate cut for the corporate income tax (CIT): from the current 35% to 20% (the House plan) or 15% (the president's plan). To offset any potential revenue loss due to the CIT rate cut, some economists propose a border adjustment tax (BAT). The BAT based on a new 15% CIT is equivalent to shifting the 15% CIT from being entirely on exports to entirely on imports. Because we regularly run a trade deficit, the proponents of the BAT argue, some or all of the lost revenue caused by the CIT rate reduction can be recovered by the BAT.

This study examines the role of the BAT in raising revenues. It finds that some previously neglected factors would significantly compromise the BAT's ability to generate net revenues, with or without a fully offsetting appreciation of the dollar. These factors include an increase in imports price, a decrease in exports price, and dollar appreciation's asymmetric effects on imports and exports, all of which work to reduce the trade deficit or even turn it into a surplus.

So, the BAT is not a reliable revenue source independent of any rate-reducing tax reform. Fundamentally, however, corporate tax reform is about bringing corporate income and investment home. If the reform succeeds in its purpose, corporate tax revenue will rise rather than fall. In the long run then there will be no revenue loss to replace. But even if there is some loss, the BAT is not the answer.

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What is the Border Adjustment Tax?

The border adjustment tax (BAT) is a mechanism that shifts the corporate income tax (CIT) from a levy on exports (and all other corporate production in the U.S.) to a levy on imports (and all other consumption in the U.S.). Specifically, with the BAT, imported products consumed in the U.S.—which are exempt from the current CIT—would be taxed at the CIT rate, whereas domestically produced products that are exported—which are taxable under the current CIT—would be exempt from the CIT. In essence, the BAT converts the CIT into a “destination-based cash-flow tax” (DBCFT).

The proponents of the BAT argue that its establishment will raise significant revenue based on the fact that the United States has a history of negative real trade balances. With a negative real trade balance the revenue lost from exempting exports from the CIT is more than made up for by imposing the CIT on imports. It is further argued that the exchange rate will enhance the value of the dollar by exactly the CIT rate.

Assuming the full exchange rate adjustment envisioned by the BAT proponents, the Treasury will receive net revenue equal to the CIT times the real trade deficit. In 2016, the real trade deficit was \$494 billion, so the BAT would generate net tax revenues of \$173 billion at the current 35% CIT rate.

Corporate Tax Reform and the BAT

A key, and somewhat novel, component of House Republicans’ 2016 tax reform plan is the proposal to lower the CIT rate from 35% to 20%, and at the same time, introduce the BAT. More recently, an even bigger CIT rate cut is envisioned in President Trump’s tax plan, from 35% to 15%. By combining the BAT with the CIT rate cut, the proponents of the BAT argue that some or all of the revenue loss caused by the CIT rate reduction will be recovered by the BAT.

The proponents of the BAT argue that even at the reduced CIT rate the revenue generated by the BAT will still be significant. Assuming the real trade deficit is unaffected by the change in the CIT, the BAT will generate \$74 billion at a 15% CIT or \$99 billion at a 20% CIT. Over the next decade, then, the BAT will bring in additional tax revenue of between \$740 billion and \$1 trillion.

In addition to this considerable revenue effect that would make the CIT and other tax cuts feasible, another often-mentioned benefit from the BAT is that it would make exporting to other countries less costly for U.S.-based firms and importing to the U.S. more costly for foreign-based firms. Therefore, the (implicit) subsidies on export-oriented domestic businesses and the net revenue raised through the BAT are all paid for by foreign businesses.

The projected revenue gain from the BAT is based on two assumptions. The first assumption is that lowering the current 35% CIT rate does not affect the trade deficit. The second assumption is that the subsequent introduction of the BAT at the new CIT rate does not affect the trade deficit. Both assumptions

are unrealistic. As we show below, incorporating proper price-quantity responses to the CIT rate reduction and the BAT would greatly reduce the trade deficit and perhaps turn it into a surplus.

For clarity we limit the discussion to the President's proposed CIT tax reduction from 35% to 15%, and separate the discussion into three phases. First we consider the effect of the initial reduction of the CIT from 35% to 15%. Second, we consider the subsequent introduction of the BAT. Finally, we consider the effect of dollar appreciation caused by the BAT.

The Effect of a CIT Rate Reduction on the Trade Deficit

Begin by assuming perfectly elastic supplies for both imported and exported goods (a reasonable assumption implicit in all the analyses on this issue). Then any tax change on imports will be fully passed on to American consumers in the prices of imported goods, and any tax change on exports will be fully passed on to foreign consumers in the prices of exported goods.

For simplicity, further assume that the dollar and a representative foreign currency (say the euro) trade one for one both before and immediately after the change in the CIT and the introduction of the BAT. This assumption normalizes the tax-exclusive prices of both imports and exports to unity.

A reduction in the CIT rate reduces the price of both exports and domestic goods. Ignoring any relative price effect, the CIT reduction increases the demand for exports, while leaving the price of and the demand for imports unaffected. Therefore, a CIT rate reduction must reduce the trade deficit. The size of the decrease in the trade deficit depends on the size of CIT rate reduction and on the elasticity of demand for exports. Estimates of the elasticity of demand for imported goods—note that exports for the U.S. are imports for other countries—vary across countries and across studies, but have been centered around -1. For our illustrative calculation here, we assume that the elasticity of demand for both imported and exported goods is -1.

Using President Trump's tax plan as a benchmark, assume that the CIT undergoes a cut from the current 35% to 15%. Lowering the current CIT rate from 35% to 15% has no effect on imports demanded because imports are already exempt from the CIT. So imports would remain at their 2016 level of \$2.7 trillion. On the other hand, the CIT rate reduction reduces the price of exports.

Assuming that the incidence of the CIT falls entirely on consumers, the proposed reduction in the CIT rate from 35% to 15% reduces the tax-inclusive price of all corporate production in the U.S., including exports by 14.8% (20% divided by 135%). Given the assumption of unit demand elasticity for exports, total exports would increase by 14.8% from 2016's \$2.2 trillion to \$2.53 trillion. Therefore, the before-BAT trade deficit at the new lower 15% CIT would be \$0.17 trillion and about one-third of the 2016 trade deficit under the 35% CIT.

The Effect of the Border Adjustment Tax on the Trade Deficit

The proposed border adjustment tax imposes the CIT on imports and exempts exports from paying the CIT. The BAT at the new CIT rate of 15% will increase the price of imports, reducing import quantity demanded. Simultaneously, the BAT decreases the price of exports, increasing export quantity demanded. Both of these changes work to reduce the trade deficit.

Specifically, the before-BAT imports were worth \$2.7 trillion. After the BAT the price of imports will increase by the new CIT of 15%. With a unit demand elasticity for imports, the after-BAT imports would fall by 15% to \$2.3 trillion. For exports, on the other hand, the price will decrease by 13% (15% divided by 115%). With a unit demand elasticity for exports, the after-BAT exports would increase by 13% from \$2.53 trillion to \$2.86 trillion.

Therefore, the combination of the CIT rate reduction to 15% and the introduction of the BAT would turn the \$0.5 trillion trade deficit realized in 2016 into a \$0.56 trillion trade surplus! In terms of the revenue effect, the BAT alone (without accounting for the revenue loss due to the CIT rate reduction from 35% to 15%) would raise a revenue of $15\% \times (\text{after-BAT imports} - \text{before-BAT exports}) = 15\% \times (\$2.3 \text{ trillion} - \$2.53 \text{ trillion}) = -\0.035 trillion . Thus, rather than raising \$0.074 trillion in 2016 (based on the unchanging \$0.5 trillion trade deficit realized in 2016), the BAT at 15% would actually lose \$0.035 trillion, on top of any CIT rate reduction revenue loss.

With the same example discussed here, it can be shown that there would be an extra quantity demanded for \$ after the BAT if the foreign exchange rate remained at its pre-BAT level. Therefore, there is an upward pressure for the value of \$ due to the BAT. We will argue in the next section that it is unlikely that the dollar rises in value relative to other currencies by exactly the new CIT rate of 15% after the BAT. Moreover, should that really happen, the trade deficit (hence the revenue from the BAT) would greatly decrease or even disappear.

After the CIT rate reduction but before the BAT, the quantity of \$ supplied in the foreign exchange market was \$2.7 trillion in 2016, whereas the quantity of \$ demanded was \$2.53 trillion. Since the foreign exchange market supply and demand must be equal the net foreign quantity demanded of U.S. \$ denominated assets adjusted for the CIT reduction from 35% to 15% must be \$0.17 trillion.

With the BAT added, the quantity supplied of \$ would become \$2.3 trillion in 2016, whereas the quantity demanded for \$ would be \$2.86 trillion in the same year. Adding the net foreign quantity demanded of U.S. \$ denominated assets of \$0.17 trillion, we would end up with an excess quantity of \$ demanded at the unity exchange rate of \$0.73 trillion.

The Effect of Dollar Appreciation

The excess demand for dollars at the old exchange rate will put an upward pressure on the exchange rate. Proponents of the BAT argue that this excess demand for dollars will result in the price of the dollar rising by exactly 15%. If that happens then both the tax-inclusive price for imported goods in the U.S. (in dollars) and the tax-exempt price for U.S. exported goods in other countries (in their currencies) will remain unchanged. So, as the argument goes, there would be no change in imports, exports or the trade deficit. Therefore, the net revenue from the post CIT reduction BAT is $(15\%)(\$0.17 \text{ trillion}) = \0.026 trillion .

In order to analyze this issue, assume initially that the non-real trade part of the balance of payments is fixed. Then the dollar appreciation with the adoption of the BAT is based on the sound logic that the BAT, which is equivalent to an import tax and an export subsidy, will drive up the demand for the dollar and depress the supply of dollars (the demand for foreign currencies). The excess demand for dollars at the original exchange rate creates the pressure on the price of the dollar in foreign exchange and results in an appreciation in the value of the dollar.

Assume an equilibrium 15% appreciation in the value of dollar from 1 to 1.15 units of foreign currency. Foreign goods pre-tax are now cheaper in dollars but after the BAT are restored to their pre-BAT price. As a result the tax-inclusive imports price in the U.S. (in dollars), as well as the demand for imports, would remain unchanged. Then at the 1.15 per dollar exchange rate the market quantity supplied of dollars would be equal to the pre-BAT market quantity supplied.

On the export side, the 15% appreciation in the value of dollar is matched by the 15% tax exemption of exports built in the BAT. Then the price of the now U.S. tax-exempt exports price in foreign currencies have returned to their pre-BAT levels. Then the demand for U.S. exports and the quantity demanded for dollars will remain at pre-BAT levels.

If the U.S. had a zero real trade balance then this would be the end of the story because the appreciation of the dollar would erase the effect of the corporate tax cut and the border tax. In this case the tax revenue from imports paying the corporate tax rate exactly offset the loss in revenue incurred when exports do not pay the corporate tax. Thus there is no additional revenue to offset the reduction in the corporate tax rate from 35% to the President's 15%. As a result there would be no revenue effect to offset the corporate tax cut revenue lost.

But the U.S. has a negative real trade balance that is totally offset by a positive dollar asset balance of trade. Moreover, the dollar asset trade balance is immune from the BAT so the entire dollar appreciation applies to the price of traded dollar assets. That is, dollar assets in the U.S. at a 1.15 exchange rate are now 15% more expensive to foreign investors. This cost increase will result in a reduction in the demand for U.S. based dollar denominated assets. By the same token from the U.S. perspective foreign assets are now 15% cheaper. This reduction in the dollar price of foreign assets will result in an increase in the demand for these assets. The combination of these two effects will reduce the surplus in the dollar asset trade balance and simultaneously reduce the real trade balance. As a result it is impossible for the BAT to cause the dollar to appreciate by the CIT tax rate.

As long as the BAT does not cause the dollar to appreciate by a full CIT tax rate (15%), our earlier analysis of the price-quantity responses to the BAT remains qualitatively valid. That is, the tax and subsidy embedded in the BAT will cause the price of imported goods in the U.S. to increase and the price of U.S.-exported goods in other countries to decrease, driving up real exports and driving down real imports and thereby reducing the real trade deficit.

We conclude this section by pointing out a highly consequential flaw in some previous analysis on the effect of dollar appreciation caused by the BAT. Even assuming that the full CIT tax rate appreciation in the value of dollar happens, the trade deficit will not remain unchanged but will fall. As a result the "free lunch" revenue from the BAT being used as a basis for the corporate tax cut will not happen.

Assume that a full 15% dollar appreciation after the BAT actually happens. Then both the tax-inclusive price for imported goods in the U.S. (in dollars) and the tax-exempt price for U.S.-exported goods in other countries (in their currencies) will remain unchanged. So there would be no change in the value of our imports measured in the appropriate foreign currency and no change in our exports measured in dollars. Because the dollar value of our imports must fall by a full 15%, the trade deficit in dollars will decrease.

Use 2016 numbers for an illustrative example. Before the BAT but after the CIT rate reduction to 15%,

the value of imports is \$2.7 trillion and the value of exports is \$2.53 trillion. After the BAT, the value of our exports already measured in dollars would remain the same at \$2.53 trillion, but the value of imports adjusted for the 15% dollar appreciation would become $\$2.7 \text{ trillion} / 1.15 = \2.35 trillion . Therefore, the trade deficit on which the “free lunch” revenue estimate is based is actually turned into a \$0.18 trillion trade surplus!

Concluding Discussions

The border tax adjustment has been proposed to accompany a comprehensive tax reform that reduces the corporate income tax rate (from 35% to 20% or 15%), among other tax cuts. It is then critical for the BAT to be able to raise a considerable amount of revenue if the corporate tax cut is to be revenue neutral. The advocates of the BAT have argued that it would play such a revenue role because, by simultaneously taxing imports and subsidizing exports, the BAT amounts to a tax at the new CIT rate on the trade deficit, which the U.S. has been running in recent years and will continue to run in foreseeable future. Further, it is argued that this revenue is almost a “free lunch” since, after all effects are accounted for, the prices and quantities of imports and exports remain the same but almost by magic the nation has an increase in tax revenues.

But as we all know there is no such thing as a “free lunch.” Indeed, as we have explained in this note, some previously neglected factors would significantly compromise the BAT’s ability to generate net revenues, with or without a fully offsetting appreciation of the dollar. These factors include an increase in imports price, a decrease in exports price, and dollar appreciation’s asymmetric effects on imports and exports, all of which work to reduce the trade deficit or even turn it into a surplus.

If the BAT is not a reliable revenue source for rate-reducing tax reform, what other tax instruments may play this role? First, we can consider a tax-only border tax adjustment in which the new CIT tax rate is levied on imports while exports, which are already taxed at the new CIT rate, are not exempt from the tax. Then we are guaranteed to raise a considerable amount of revenue even though the U.S. consumers of imported goods will bear the tax burden in the form of higher prices for imported goods. Of course, this tax-only border adjustment operates like an across-the-board tariff and may draw retaliation from our trading partners.

Finally, and perhaps most important, is that corporate tax reform is about making the U.S. competitive internationally. As such, before we try to find ways to replace any revenue loss that would result if the reform did not do what is intended, we should estimate how the reform will affect corporate income in both the short and long run. Unless all the analysis is wrong, corporate tax reform will increase reported taxable income immediately and will also increase economic growth in the long run.