



## Border Adjustment and the Dollar

By Alan J. Auerbach

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A key element of the destination-based cash-flow tax included in the House Blueprint is a border adjustment, which would relieve tax on exports and impose tax on imports and thereby shift the locus of US business taxation from where products are made to where they are consumed. There are strong tax policy arguments for a shift to destination-based taxation, but an important issue, especially during a transition to this new tax system, is the response of the dollar exchange rate to border adjustment. This paper explains the prediction that the dollar will rise significantly in reaction to border adjustment and reviews criticisms of this prediction.

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The House Blueprint proposal for a destination-based cash-flow tax (DBCFT) has drawn particular attention to the border adjustment, which is a key component of the plan. Border adjustment, common around the world as an integral component of the value-added tax (VAT), and by its symmetric application neither pro- nor anti-trade, would effectively impose a 20 percent (the new corporate tax rate) tax on imports while providing a 20 percent rebate for exports.

Full analysis of the reform and its effects would need to confront a number of complex issues, including the structure of a transition. This short note's more modest aim is to go through the analytics of border adjustment and the dollar exchange rate, covering several recent criticisms of the argument that the dollar should appreciate rather quickly by roughly 25 percent (or, equivalently, that other currencies should depreciate by 20 percent against the dollar). The analysis is limited to impacts of border adjustments alone, rather than the many

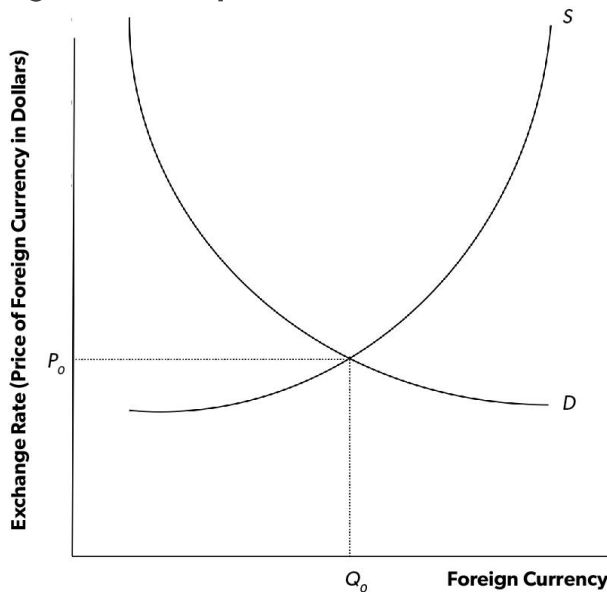
other changes in business taxation included in the House Blueprint.

### **A National Income Accounting Reality Check**

Some criticisms of the analysis predicting substantial dollar appreciation have referred to such analysis as “standard” or “textbook” economics, and it is useful to start with one of the key tools of economics, the national income identity, which states, in particular, that national savings equals net exports plus domestic investment. As an identity, this holds not only in textbooks but also in the complex real world, and it is important to keep in mind as a reality check for analysis predicting that border adjustments will give rise to a significant improvement in trade balance, for example because the dollar appreciation offsets only a small share of the border adjustment.

For the trade balance to improve, some combination of an increase in national (private

**Figure 1. Initial Equilibrium**



Source: Author.

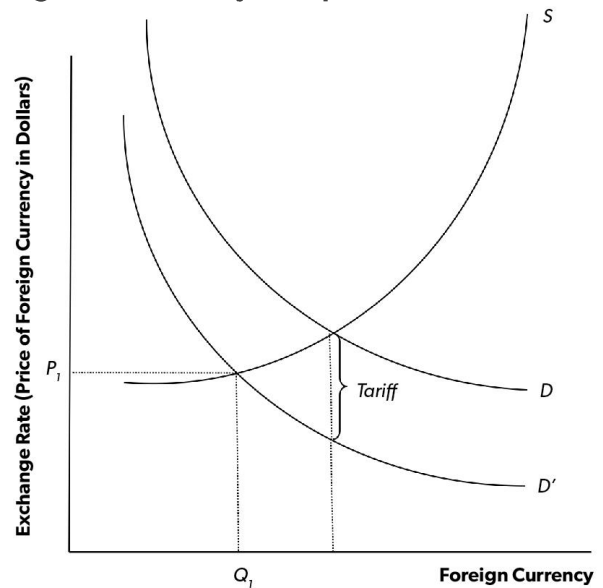
plus public) saving and a decline in domestic investment must occur. Any coherent argument that the trade balance will improve needs to explain the source of the offsetting increase in the saving-investment gap. A border adjustment can obviously influence national savings through its impact on the budget deficit, but this is not considered here, as it relates to the revenue change itself rather than to this particular way of raising revenue.

### Starting Point: Some Simple Analytics

To go through specific criticisms of the argument for dollar appreciation, it will be helpful to establish the logic for that argument with the following simple graphical representations of the determination of the value of the dollar, expressed as the dollar price of foreign currency. In this analysis, the supply of foreign currency (demand for dollars) is generated by the demand for US exports and assets. The demand for foreign currency (supply of dollars) is generated by US import demand and US demand for foreign assets. The initial equilibrium (Figure 1) depicts the situation without border adjustment, and we can consider what happens with the imposition of a tariff, an export subsidy, or both—a border adjustment.

With only an import tariff (Figure 2), the demand curve shifts left because demand for imports falls at any exchange rate. So the quantity of foreign

**Figure 2. With Only an Import Tariff**

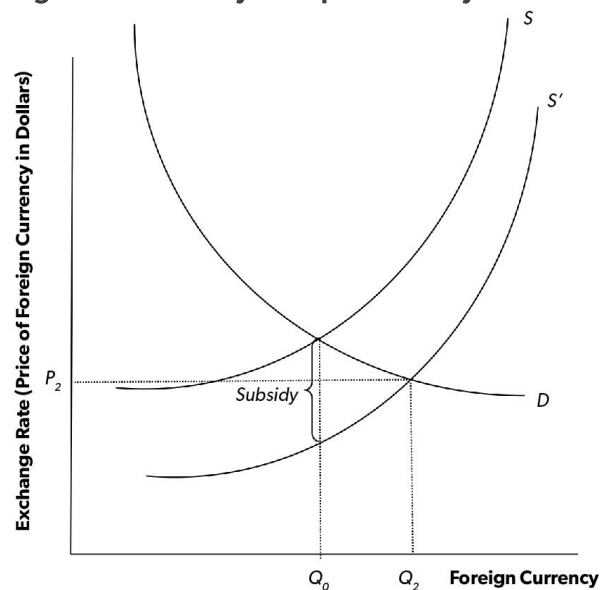


Source: Author.

currency demanded remains the same only if the dollar appreciates (or the price of foreign currency falls) by enough to offset the tariff. But this cannot happen because at full appreciation there is excess demand for foreign currency (since exports fall and the trade deficit has increased). In equilibrium, the dollar rises by less, and imports (and exports) fall.

In Figure 3, when only an export subsidy is imposed, the supply curve shifts right because there

**Figure 3. With Only an Export Subsidy**



Source: Author.

is stronger export demand at any exchange rate. So the quantity of foreign currency supplied remains the same only if the dollar appreciates by enough to offset the subsidy. But this cannot happen, as the rise in imports and increase in the trade deficit would cause excess demand for foreign currency. In equilibrium, the dollar rises by less, and exports (and imports) rise.

With both a subsidy and a tariff (at equal rates) (Figure 4), the supply and demand curves both shift, leaving appreciation but no change in quantities of foreign currency demanded or supplied—that is, no changes in exports or imports.

### Challenges to the Simple Analysis

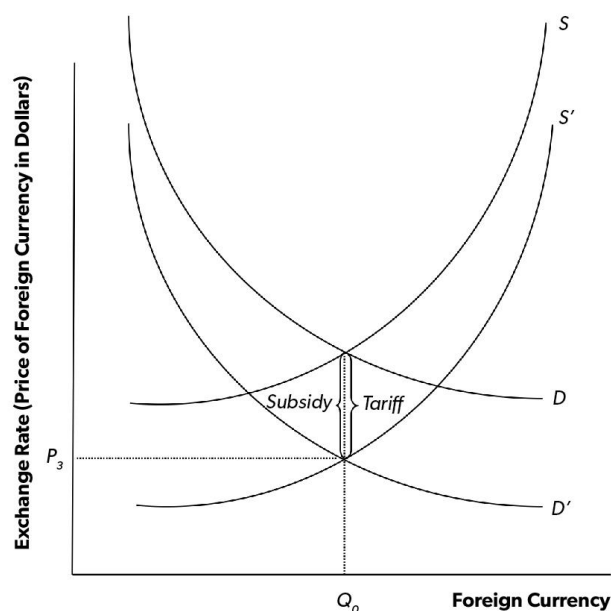
Behind the simple supply-demand analysis lie several assumptions, so it is worth considering some of these, along with the associated critiques.

**Most exchange market trading occurs in capital markets, not through trade, so the dollar devaluation implicit in border adjustment is largely irrelevant to the determination of the dollar exchange rate.** This statement is a reminder that the demand and supply curves in the graphical analysis above are generated by conditions in capital and trade markets and that factors that influence demand or supply in the capital market (for example, an increase in the spread between US and foreign interest rates or an increase in global insecurity, both of which would strengthen net dollar demand) can exert powerful effects on the dollar.

That being said, the statement is a non sequitur with respect to the impact of border adjustment on the dollar, unless border adjustment also exerts an influence through the capital market. Such channels may exist (more on this below), but they need to be specified.

**There is trade in services rather than just in goods.** Services account for a growing share of US trade and US GDP. However, services would be subject to the same border adjustment as goods, and there is nothing inherently different about services that should change the analysis.

**Figure 4. With Both a Subsidy and a Tariff**



Source: Author.

**Direct purchases by consumers can avoid the border adjustment and hence limit dollar appreciation.** The logic of border adjustment, as commonly practiced under existing VATs, is to impose the tax uniformly on all imports, whether they are by domestic businesses or directly by domestic consumers. There are, of course, enforcement issues under VATs, particularly for smaller purchases, but the prospect of large-scale tax evasion and a significant impact on the exchange rate seems remote.

**The United States is not a small country.** This is self-evident, but it is not clear how it relates to the above analysis, which does not depend on an assumption of perfect competition or the absence of market power.

**The dollar is already overvalued.** By implication, the dollar cannot rise substantially more. There are two possible interpretations of this supposed overvaluation. One is that markets have already partially incorporated the prospect of border adjustment, and so it should not be expected to rise much further. Under this interpretation, there is really no disagreement with the basic analysis.

Alternatively, one may interpret the statement as suggesting the dollar is likely to fall. While such a fall in the dollar would reduce the overall increase

if it occurs coincidentally with the adoption of border adjustment, it is unrelated to the border adjustment itself.

**The responses of other currencies against the dollar depend on individual bilateral trade balances.** Nothing in the equilibrium analysis above depends on bilateral trade balances. With full dollar appreciation against other currencies, bilateral trade balances should not be affected because the full costs (including taxes) of imports and exports will be unaffected.

**The prediction of full dollar appreciation assumes that purchasing power parity (PPP) holds or that deviations from PPP are quickly undone.**

The basic analysis includes no assumption regarding PPP; it simply predicts that the existing deviation from PPP is maintained with the introduction of the border adjustment. Whatever forces generated the pre-policy equilibrium would still be present post-policy.

**Exchange rates respond to trade imbalances slowly.** In the basic analysis, the cause of dollar appreciation is not a trade imbalance, but rather a change in the relative costs of imports and exports. There is no change in the trade balance associated with dollar appreciation.

**The full exchange rate response presumes the United States is at full employment, that is, that border adjustment cannot increase US net exports.** While the ability of US net exports to rise without a corresponding decline in other domestic output depends on there being unused productive capacity, the basic analysis does not relate to such considerations. It is not that the border adjustment is pushing on an immovable capacity, but rather that there are offsetting effects that are, on balance, neutral.

**Import cost increases, due to changes in exchange rates or other factors, are only partially passed through into domestic US prices.** While this statement may be consistent with empirical evidence, it is not relevant if the dollar appreciates to offset

border adjustment, for then there is no change in import costs to be passed through.

**Many imports are invoiced in dollars.** One should distinguish between existing contracts and new ones. Imports with fixed dollar prices will cost more after border adjustment. But, going forward, the currency in which a price is quoted should not affect the economics.

Empirical evidence suggests a different speed of adjustment of prices to exchange rate changes depending on the invoicing currency, but these exchange rate changes are typically not in reaction to permanent changes in costs, as would be the case with border adjustment.

**Important US trading partners peg their currencies against the dollar.** Managed exchange rates can change the analysis, depending on how they are managed. To the extent that countries seek to maintain a given real exchange rate against the dollar, they would wish to allow full dollar appreciation in response to border adjustment. That is, if a country seeks to limit its currency's depreciation against the dollar, its exports will cost more not only in the United States but also in all other countries experiencing full currency depreciation against the dollar and in relation to the exports from other countries allowing full depreciation of their currencies.

There may be other objectives of exchange rate management, but not necessarily in the direction of resisting dollar appreciation. For example, countries with large dollar asset positions in the United States might benefit from a higher dollar.

**Dollar appreciation depends on the Fed's response.** This appears to suggest that with Fed accommodation, a response to border adjustment might occur through an increase in domestic US wages and prices rather than through dollar appreciation. In principle, the US real exchange rate can respond to border adjustment through either the domestic channel or the exchange rate channel, but the speed of exchange rate adjustment suggests little upward price pressure to which a Fed response would be needed.

**It is generally thought that introducing a VAT should increase domestic prices.** If domestic prices rise, then the dollar should not increase by as much. In contrast to a pure border adjustment, adopting a VAT could well put upward pressure on domestic prices. Assuming that wages have limited downward flexibility, adding a business-level tax on wages (which is part of the VAT) should push the domestic price level upward.

But this is not due to the border adjustment itself, which would potentially relate to prices only through the costs of imports. Moreover, the House Blueprint plan that includes a DBCFT with a border adjustment incorporates a deduction for wages, so the VAT's domestic channel for affecting prices is absent.

**If exporters cannot effectively recover border adjustments because their tax base has already been driven to zero, then the border adjustment functions more like an import tariff.** This consideration, that companies with a large share of sales revenues from exports should be able to benefit from border adjustment, is relevant to implementation. While there may be ways for them to do so through changes in business structure (such as becoming an import broker), a range of more direct policy solutions exists.

**Problems with the World Trade Organization (WTO) may limit dollar appreciation.** If a border adjustment policy is less certain to remain in effect because of the WTO process, then dollar appreciation may be reduced. But, in evaluating the significance of this effect, one should keep in mind that the WTO process is lengthy and that the ultimate outcome of even a successful WTO

challenge might be to adopt a different type of border adjustable tax that is WTO compliant.

**With a rise in the dollar, investors in the United States and abroad may wish to rebalance portfolios, shifting out of dollar assets.** This is a possible outcome, but not an obvious one. For example, if the aim is to maintain a world market portfolio, then no rebalancing would be required. A related factor that could potentially increase the net demand for foreign assets and weaken the dollar is the decline in wealth associated with a loss in the dollar value of US-owned foreign assets, which could increase national savings.

**Moving to a DBCFT eliminates the US-source tax on investment and the location of profitable activities.** This is true, and it should spur US domestic investment in new and existing enterprises. Increased investment demand would strengthen the dollar further, working in the opposite direction of a possible increase in saving.

## Summary

Many of the arguments made against the prediction of full and rapid dollar appreciation in response to a US border adjustment do not seem to apply. Those that may be relevant do not necessarily point to a less-than-full appreciation in the short run.

Also, in assessing the possibility of any lags in the exchange rate response, one should keep in mind that the announcement, or even anticipation, of a border adjustment should immediately affect the dollar, given that a large expected increase in the dollar is not consistent with equilibrium in capital markets.

## About the Author

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