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POLICY BRIEF

PB 17-3 Border Tax Adjustments: Assessing Risks and Rewards

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In a "Blueprint" titled *A Better Way: Our Vision for a Confident America. Tax*, House Speaker Paul Ryan and Ways and Means Committee Chair Kevin Brady advocate a uniform 20 percent "cash flow" business tax to replace the current federal corporate income tax (which is imposed at a rate of 35 percent but with many deductions and loopholes).[1] In broad terms, the Ryan/Brady Blueprint has much in common with President-elect Donald Trump's campaign tax proposals.[2]

A controversial feature of the cash flow tax in the Ryan/Brady Blueprint is border tax adjustments (BTAs). These would be achieved by denying business deductions for imported goods and services and excluding exports of goods and services from the tax base. If nothing else changed (importantly, including the dollar exchange rate), the after-tax cost of imports would be 25 percent more than that of equivalent domestic goods and sales, while exports would be 25 percent cheaper.[3]

Although Trump's tax plan resembles the Ryan/Brady Blueprint in many features, in a recent interview Trump dismissed BTAs as "too complicated." His statement sharply diminishes the prospects for BTAs as part of the business tax reform package.[4]

This Policy Brief starts by laying out pro and con arguments for BTAs. At the center of the debate is compatibility with World Trade Organization (WTO) rules, so the paper then examines WTO rules that govern imports and exports of goods and services respectively and identifies points that may raise legal disputes. Arguments as to whether BTAs for a cash flow tax would be consistent with WTO rules are strong on both sides. If a complaint is filed, the legal dust will take a long time to settle.

The section that follows examines the possible impact of BTAs on the exchange rate of the US dollar. Considering other business tax features of the Ryan/Brady Blueprint and the unknown extent of spare capacity in the US economy,

1. Appendix A summarizes key elements of the Ryan/Brady business tax reforms.

2. For a summary of Trump's tax reform plan, see "Details and Analysis of the Donald Trump Tax Reform Plan, September 2016," Tax Foundation, http://taxfoundation.org/sites/taxfoundation.org/files/docs/TaxFoundation_FF528_FINAL3.pdf. In an op-ed, Lawrence Summers argued that the Ryan/Brady plan will significantly damage both the US and the global economy. See "Trump and Ryan are right to tackle corporate taxes. But their approach would do harm," *Washington Post*, January 8, 2017, www.washingtonpost.com/opinions/trump-and-ryan-are-right-to-tackle-corporate-taxes-but-their-approach-would-do-harm/2017/01/08/e7abd204-d429-11e6-9cb0-54ab630851e8_story.html?utm_term=.a31072f750fb.

3. Two examples illustrate the tax impact. Suppose the US purchasing firm is not allowed a business deduction for imported parts costing $1,000, but is allowed a deduction equal to 20 percent of the cost for identical domestic parts costing $1,000. Then the after-tax cost to the purchasing firm of domestic parts is $800, whereas the after-tax cost of imported parts is 25 percent greater, or $1,000. Likewise, suppose exported goods worth $1,000 are not counted in the US selling firm's tax base, but the same goods sold domestically are counted in the firm's tax base. Then after-tax receipts from exports are $1,000, or 25 percent greater than after-tax receipts from domestic sales.

4. Richard Rubin and Peter Nicholas, "Donald Trump Warns on House Republican Tax Plan," *Wall Street Journal*, January 16, 2017, www.wsj.com/articles/trump-warns-on-house-republican-tax-plan-1484613766.

evaluations differ widely on the possible movement of the dollar exchange rate if BTAs are implemented. Plausible estimates range from no change to a 25 percent dollar appreciation. Moreover, macroeconomic dynamics in the world economy will inevitably alter the dollar exchange rate in the years ahead, clouding even ex post evaluations of the BTA impact.

Not only are dogmatic assertions on the WTO compatibility of BTAs unwarranted but also are confident predictions of the induced exchange rate impact.

The induced exchange rate movement following the implementation of the BTA coupled with the cash flow tax will have important implications on tax incidence, as discussed in the fourth section. If exchange rate offset is complete, foreigners will pay for the tax; if the BTA has no impact on the value of the US dollar, ultimate consumers of imported goods will bear the burden, since the tax will be passed forward in prices charged. In summary, not only are dogmatic assertions on the WTO compatibility of BTAs unwarranted but also are confident predictions of the induced exchange rate impact. The BTA proposal nested in the Ryan/Brady Blueprint thus invites vigorous debate.

I PRO AND CON ARGUMENTS

The prospect of BTAs excites both proponents and opponents. Proponents offer five arguments:

- When coupled with the reduced federal business tax rate (20 percent rather than 35 percent) and the shift from a worldwide tax system to a territorial tax system (another feature of the Ryan/Brady plan), the BTA feature dramatically reduces tax incentives for US multinational corporations (MNCs) to "invert" (moving their headquarters abroad), outsource (produce abroad for the US market), or engage in transfer pricing (shifting business income from the United States to low-tax jurisdictions abroad by over-invoicing imports and under-invoicing exports from/to those destinations).
- BTAs for the cash flow tax would redress the seeming unfairness inherent in WTO rules that allow value-added taxes (VATs, which have been adopted by almost every major trading country except the United States) to be adjusted at the border but do not allow BTAs for the corporate income tax.[5]
- Depending on the extent of dollar exchange rate appreciation in response to a business tax package including BTAs, the adjustments might curtail the US deficit in goods and services trade, projected to be about $500 billion in 2016.[6] For example, if the exchange rate offset is half the BTA level, implying a 10 percent depreciation of the dollar, arithmetic suggests that the US trade deficit would shrink by $220 billion.[7] The deficit would shrink partly owing to larger US exports and partly owing to smaller US imports.
- In any event, as long as the United States incurs a substantial trade deficit, BTAs would generate revenue for the US Treasury, since revenue gained from the denial of business deductions for imports would exceed revenue loss from the exemption of exports. At the projected 2016 trade deficit level of $500 billion, the revenue gain would be roughly $100 billion annually.[8]
- Finally, by changing US business taxation from a system that taxes production to one that taxes consumption, household saving would be encouraged, to the benefit of future old-age pensioners (but at a cost to present-day consumers).

Opponents offer four arguments for rejecting BTAs:

- Politically most persuasive is the strident opposition of US firms that import significantly more than they export—notably big box retailers, oil refiners, some auto companies and others scattered through the US

5. The value-added tax (VAT) is a tax imposed on the value added to goods and services at each stage of the production and distribution chain. The amount collected in the common "credit invoice" VAT system equals the tax rate times the sale price, minus a credit for VAT paid at the previous stage of production or distribution. See "What is VAT?" available at http://ec.europa.eu/taxation_customs/business/vat/what-is-vat_en for more detailed explanations on the VAT system in Europe.

6. According to the US Census Bureau, the year-to-date US trade deficit from January to October 2016 was $409 billion. The projected 2016 trade deficit of about $500 billion is based on this figure. Trade data are available at www.census.gov/foreign-trade/Press-Release/2016pr/10/exh1.pdf.

7. According to Cline (2016), a 10 percent appreciation (depreciation) in the trade-weighted dollar exchange rate leads to a decrease (increase) in the current account balance by 1.22 percent of GDP. According to the World Bank, US GDP in 2015 was $18,037 billion. Therefore, a 10 percent depreciation in the dollar exchange rate implies that the US trade deficit will shrink by $220 billion ($18,037 * 1.22% = $220 billion).

8. Year-to-date US imports of goods and services reached $2,245 billion by October 2016. Based on this figure, projected 2016 annual imports will be around $2,690 billion. At a 20 percent rate, tax revenue from imports could amount to $540 billion. Similarly, projected 2016 annual exports are $2,200 billion. At a 20 percent rate, the exclusion of exports from the tax base would entail a revenue loss of $440 billion. The net impact would be a revenue gain of about $100 billion annually. Trade data are from the US Census Bureau, www.census.gov/foreign-trade/Press-Release/2016pr/10/exh1.pdf.

economy. For example, Koch Industries, among other activities an oil refiner, strongly opposes BTAs.[9]

- Related is the predictable opposition of politicians who represent medium- and low-income households, fearing that the cash flow tax will be largely reflected in higher prices at the checkout counter. These households spend a much larger portion of their earnings on traded goods than high-income households (which spend a larger fraction of earnings on services).[10]
- Next is the argument that BTAs for the cash flow tax would contravene WTO rules. This argument persuades some trade lawyers, exemplified by Trachtman (2016), and has been voiced by Senator Ron Wyden (D-OR).[11] Even if correct, which is open to question, the argument probably cuts little ice with President-elect Trump, who characterized the WTO as a "disaster" during the presidential campaign.[12]
- Fourth, there is the argument that BTAs are a waste of time, because they will be offset percent for percent by appreciation of the dollar in foreign exchange markets.[13] While this argument may persuade some macroeconomists, it has been dismissed both by US business leaders now debating the BTA feature and by foreign legislators when they enacted their own value-added taxes.

Before turning to the WTO rules, it is worth emphasizing that these will be secondary in the US political arena. More important to BTA proponents will be the perceived cure offered by the cash flow tax for "unfair" treatment between permitted BTAs for VAT taxation and prohibited BTAs for corporate income taxation, together with the antidote that a cash flow tax provides to inversions, outsourcing, and transfer pricing abuse. Among BTA opponents, strong objections will be voiced by firms that are large net importers, especially with respect to the alleged harmful impact on medium- and low-income households. The extent of harm critically depends on the extent of dollar appreciation in response to border adjustments.

II WTO RULES

Distinct rules govern border tax adjustments for imports and exports and for goods and services. In the sections below, the cash flow tax with border adjustment is evaluated against each in turn. Before turning to the substance, it's worth considering procedural aspects of a potential WTO complaint against the contemplated BTA regime.

Many countries might be persuaded not to bring a complaint, whatever the legal merits, in order to keep on good terms with the United States for alliance, geopolitical, or commercial reasons. Canada, Mexico, Korea, Japan, and Australia are candidates for opting out.

If some countries do bring a suit to the WTO, it will take at least four years and probably longer for the panel, Appellate Body, and countermeasure decisions to be issued.[14] Retroactive relief does not exist in the WTO dispute system, and only parties joining in the complaint are entitled to prospective relief.[15]

Finally, an adverse decision against the United States might be followed by a renegotiation of the rules governing border adjustments for VATs, cash flow taxes, and others.[16]

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9. See "Koch Industries Criticizes Key Feature of House GOP Tax Plan," *Wall Street Journal*, December 7, 2016, www.wsj.com/articles/koch-industries-criticizes-key-feature-of-house-gop-tax-plan-1481146021.

10. Poorer households allocate a larger share of their income (10.6 percent versus 7.1 percent) on agriculture, apparel, and goods and beverages, while wealthier households spend a larger share on services, especially financial services. See appendix table A.2 in Lawrence and Moran (2016) as well as Fajgelbaum and Khandelwal (2014) for evidence that the poor spend more on traded goods.

11. See "Democratic Finance Staff Warns House GOP Tax Plan 'Possibly Illegal' at WTO," *Inside US Trade*, December 16, 2016.

12. See "Donald Trump threatens to pull US out of WTO," *Financial Times*, July 24, 2016, www.ft.com/content/d97b-97ba-51d8-11e6-9664-e0bdc13c3bef, for Trump's comment on the WTO.

13. The exchange rate offset argument is advanced by Auerbach and Holtz-Eakin (2016), who support BTAs. It is also supported by Martin Feldstein (see footnote 21).

14. The most recent settled WTO dispute that went to the countermeasures stage was Mexico's complaint against the United States concerning certain country of origin labeling requirements (case number: DS386). The case was brought to the WTO on December 17, 2008, and the WTO Dispute Settlement Body (DSB) authorized Mexico to retaliate on December 21, 2015. The whole procedure took seven years. In recent years, WTO cases are taking longer to resolve. Four cases initiated before 2002 went to the countermeasures stage and for those, on average, it took the WTO three years for the panel, Appellate Body, and countermeasure decisions to be issued. However, for disputes brought to the WTO after 2002, it took at least seven years for the DSB to make the final decision on countermeasures. For more information on specific WTO disputes, see www.wto.org/english/tratop_e/dispu_e/dispu_status_e.htm.

15. WTO allows the complainant to "ask the Dispute Settlement Body (DSB) for permission to suspend concessions or other obligations under the covered agreements against the respondent" if it fails to implement the "recommendation and ruling" by the DSB. Therefore, third parties and others who do not participate in dispute settlement proceedings are not entitled to prospective relief. In addition, "the suspension of obligations is prospective rather than retroactive; it covers only the time-period after the DSB has granted authorization, not the whole period during which the measure in question was applied or the entire period of the dispute." See www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c6s10p1_e.htm for detailed explanations.

16. According to WTO rules, "decisions to amend provisions of the multilateral agreements can be adopted through approval either by all members or by a two-thirds majority depending on the nature of the provision concerned. But the amendments only take effect for those WTO members which accept them." See

Bearing these considerations in mind, it could take a long time before the legal dust has settled.

BTAs on Imported Goods

General Agreement on Tariffs and Trade (GATT) Article III: *National Treatment on Internal Taxation and Regulation* provides the rule for BTAs on imported goods: Any tax imposed on a domestic product may also be imposed, to the same extent, on a like imported product. The first issue, therefore, is whether the cash flow tax with border adjustment is a tax on domestic products.

Scholars such as Trachtman (2016) stress legal forms rather than economic substance, and conclude that the cash flow tax is a tax on firms because it is levied with respect to cash flow rather than the selling price of individual products. In this view, unless goods sold by a firm are accompanied by a document (e.g., a stamp or receipt) that says so much tax was charged, the tax was levied on the firm, not the product. This argument leads to the conclusion that the cash flow tax cannot be applied to imported goods.

This formalistic argument might be rejected by WTO jurists, who might instead consider the economic substance of the BTAs imposed to accompany a cash flow tax. One appropriate economic test is whether the cash flow tax is sufficiently uniform across competing producers that it is likely to be passed forward in prices charged rather than passed back in lower earnings of capital, labor, and land. If different producers of the same good pay very different tax rates, highly taxed firms will have little choice but to absorb the tax. But the cash flow tax is designed to be uniform. Because competing firms pay much the same tax rate on both their own and their suppliers' earnings on capital—the main target of the cash flow tax—it seems likely that product prices will be gradually marked up to reflect the tax. Otherwise firms and their suppliers will not be able to attract capital from financial markets.

Another way to look at the issue is to consider parallels with the VAT. GATT jurisprudence has long allowed VATs to be imposed on imports at the applicable domestic rate. The cash flow tax is akin to a subtraction-method VAT, namely a tax on revenue minus purchased inputs (raw materials, parts and components, electricity, etc.). It should be noted that the dominant VAT form is the credit-invoice style (used by about 150 countries), but the subtraction-method VAT is used by Japan. Unlike the subtraction-method VAT, the cash flow tax allows a deduction for wages. This difference should not disqualify the cash flow tax from the VAT family, so far as BTAs are concerned, but it might well require an adaptation in the mechanics of border adjustment, as examined in the next paragraph.

The issue is whether the BTA, under the cash flow tax, imposes a tax on imports that exceeds the tax on domestic production because the cash flow tax applies the designated rate to revenue minus purchased domestic inputs and wages. The deduction of wages means that the chain of value subject to taxation never reaches worker compensation. Hence the cash flow tax rate, when applied to the entire cost of imported inputs, reaches a broader tax base (since it includes direct and indirect wages) than when applied just to cash flow (which excludes these wages). The result is a tax on imported inputs that exceeds the tax on cash flow.

At least three cures are possible for this discrepancy:

- The cash flow tax could include wages in the tax base, but direct a portion of the tax revenue to be used as a credit for Social Security and Medicare taxes, which amount to about 15 percent of wages. However, if the cash flow tax rate is 20 percent, this would entail an additional 5 percent tax on wages. The difference might be used in some manner to compensate households (e.g., an income tax credit).
- Using the same mechanism, the cash flow tax rate could be reduced to the combined Social Security and Medicare tax rate, about 15 percent.
- Alternatively, the cash flow tax with border tax adjustments can allow a deduction for the wage component of the imported goods. The US International Trade Commission would then have to make estimates as to the wage content of imports and prepare an appropriate schedule. This implies that each good will have a distinct deduction allowance depending on its wage component.[17]

BTAs on Exported Goods

In the Agreement on Subsidies and Countervailing Measures (ASCM), Annex I: *Illustrative List of Export Subsidies* provides the relevant guidance for BTAs on exported goods. As a rule, export subsidies are prohibited. The exemption, remission, or deferral of direct taxes specifically related to exports are scheduled on the *Illustrative List*, meaning these practices are regarded as prohibited export subsidies, as are special deductions that are directly related to export sales. By contrast, the *Illustrative List* stipulates that the exemption of exports from indirect taxes is not an export subsidy. Accordingly, the threshold question is whether the cash flow tax is a direct or indirect tax. Footnote 58 of the cited provisions defines di-

"Whose WTO is it anyway?" available at www.wto.org/english/thewto_e/whatis_e/tif_e/org1_e.htm.

17. When the US International Trade Commission evaluates the wage content of each imported good, it will probably need to consider not only direct wages but also indirect wages embodied in imported inputs.

rect taxes as "taxes on wages, profits, interests, rents, royalties, and all other forms of income, and taxes on the ownership of real property." Indirect taxes are defined as "sales, excise, turnover, value added, franchise, stamp, transfer, inventory and equipment taxes, border taxes and all taxes other than direct taxes and import charges."

In the 19th century, before the era of income taxation, indirect taxes were exemplified by excise duties on whiskey and tobacco, and direct taxes were exemplified by property taxes. The underlying rationale of the distinction, flawed though it was, held that indirect taxes are entirely passed forward in product prices, whereas direct taxes are entirely absorbed in lower factor incomes.[18]

As different forms of taxation were invented, they were shoehorned into the direct and indirect categories. In the Tokyo Round of Multilateral Trade Negotiations (1974–79), the United States agreed to schedule VATs as indirect taxes (thus eligible for exemption on exports) to accommodate Europe—even though the VAT combines direct taxes on "wages, profits, interests, rents and royalties" (quoting the ASCM definition).

A strong argument for characterizing the cash flow tax as an indirect tax is its similarity to the subtraction-method VAT. A supplementary argument is that the cash flow tax falls in the residual indirect tax category of "all taxes other than direct taxes and import charges" (quoting the ASCM definition).

Assuming the cash flow tax is characterized as an indirect tax, the next question is whether exemption of all export revenue from the tax base is excessive. This comes back to the point that wages are deducted from cash flow in defining the tax base. The potential solutions are the same for export BTAs as for import BTAs.

An important qualification must be stressed here. Foreign countries that see US export BTAs as excessive (inter alia because of the wage issue) can invoke their national countervailing duty (CVD) statutes to penalize US exports. National CVDs can be imposed much faster than WTO dispute resolution.

BTAs on Imported Services

Article XVII: *National Treatment* of the General Agreement on Trade in Services (GATS) contains the relevant language for BTAs on imported services. When a country inscribes a sector for national treatment in its GATS schedule, it commits to accord other countries "in respect of all measures affecting the supply of services, treatment no less favorable than that it accords to its own like services and service suppliers." The question is whether the denial of a business deduction for an imported service (e.g., engineering specifications or back office accounting) amounts to treatment "less favorable" than the treatment accorded to the same service purchased from a domestic supplier.

Some scholars may be tempted to answer this question by reading into GATS Article XVII the tax provisions applicable to goods imports set forth in GATT Article III. But this line of argument goes too far. If the GATS authors intended parallel treatment for service imports as for goods imports, they could have inserted the language of GATT Article III in GATS Article XVII. They did not. Accordingly, imposition of the cash flow tax on imports at the rate of 20 percent might be defended as "no less favorable" than the payment of the 20 percent tax by domestic firms on their cash flows plus the payment of the Social Security and Medicare tax by firms and their employees as well as sundry state and local taxes.

BTAs on Exported Services

GATS Article XV: *Subsidie*s promised future negotiations on defining and disciplining subsidies, but the negotiations are yet to be launched. In the meantime, GATS members are urged to accord "sympathetic consideration" to countries that consider themselves "adversely affected" by distortive subsidies. The hortatory language means that any country can apply BTAs in any amount on service exports without fear of violating WTO rules, but the country might be asked for consultations by other GATS members.

III EXCHANGE RATES

The purpose of BTAs is to implement the destination principle of taxation: Goods and services are taxed in the market where they are consumed rather than the country where they are produced. To carry out this principle, the BTA relieves exported goods and services of domestic taxation because they are consumed abroad, and taxes imported goods and services because they are consumed at home. Compared with the current US origin principle of business taxation—namely, taxing goods and services produced in the United States but not imported goods and services—the destination principle makes exports less expensive and imports more expensive.

Taxing domestic cash flows at 20 percent and implementing BTAs can be likened to pairing a 25 percent import tariff with a 25 percent export subsidy on cross-border transactions.[19] However, advocates see the BTA system as a neutral

18. The flaw arises because market conditions and tax uniformity, not legal forms, determine tax incidence. If a commercial Kentucky whiskey firm, taxed at $10 per proof gallon, was forced to compete with an identical whiskey firm run by monks who pay no tax, the commercial firm would be obliged to absorb the $10 tax in lower wages and profits. Conversely, if a tax of 2 percent per annum was levied on all borrowed and equity capital employed by hotels, it seems likely that the tax would be passed forward in hotel room rates.

19. As explained earlier, a 20 percent cash flow tax applied to

tax policy, essential to carry out the destination principle, not the discriminatory trade policy implied by the terms "import tariff" and "export subsidy."

Before delving more deeply into exchange rate assumptions, it's worth pointing out that any BTA system is not likely to catch large swaths of cross-border transactions either for imports or exports or both: pleasure tourism, health tourism, university education, B-to-C internet services, and small-value packages.

Holding everything else constant (the famous but unrealistic ceteris paribus assumption), BTAs will make US exports more competitive in foreign markets, increase foreign demand for US products, and thereby increase foreign demand for US dollars. At the same time, they will make US imports less competitive in the domestic market, reduce US demand for foreign products, and thereby reduce the supply of US dollars to foreign holders. Taken in isolation, such BTA effects suggest that the dollar will appreciate.[20]

Indeed, Auerbach and Holtz-Eakin (2016) contend that dollar appreciation will almost instantaneously offset the impact of BTAs.[21] This outcome reflects an assumption that, by themselves, BTAs do not alter the domestic savings-investment balance—in other words, domestic expenditure and output remain unchanged—and therefore the exchange rate must offset the BTAs. In this framework, because of the exchange rate offset, BTAs will not provide an incentive to US exports, nor diminish US imports, and consequently they will not alter the US trade balance, which mirrors the unchanged domestic savings-investment balance.

However, a fundamental reason to tax goods and services in the market where they are consumed is to increase domestic savings by making current consumption more expensive (Hufbauer and Gabyzon 1996). If household savings do in fact rise, that will change the domestic savings-investment balance and accordingly improve the trade balance (e.g., a smaller trade deficit). By implication, the exchange rate change will not completely offset the BTA system.

Thus, while the Auerbach and Holtz-Eakin framework is one approach, economists disagree sharply about the likely exchange rate impact of BTAs (appendix B summarizes the literature on the interaction between BTAs, VATs, exchange rates, and trade flows). An alternative approach is sketched in the paragraphs that follow.

It would be an analytic mistake to isolate BTAs from the rest of the Blueprint business tax package because BTAs enable two key features. One is the sharp reduction of the business tax rate, from the current statutory 35 percent federal corporate tax rate to a 20 percent cash flow rate.

The other feature is replacement of the US worldwide business tax system with a territorial tax system (now practiced by nearly all other countries), preceded by a one-time tax on earnings held abroad by US MNCs. Without BTAs, the adoption of a territorial tax system would run head-first into the political complaint that such a system fosters outsourcing of US jobs and serious erosion of the US tax base. The supporting argument for this complaint holds that, once a territorial system is in place, US MNCs will be free to move production abroad, ship the foreign-made goods and services back to the US market, and repatriate foreign earnings with no further US tax burden.[22]

As an aside, it should be noted that a territorial tax system could foster substantial repatriation of foreign earnings if good investment opportunities exist in the United States. That would put upward pressure on the dollar.[23]

A completely different approach from the Auerbach and Holtz-Eakin framework (which assumes that BTAs do not affect the savings-investment balance) might start with the assumption that BTAs are equivalent to a 20 percent dollar depreciation and trace through the expenditure and exchange rate consequences of the Blueprint tax package.

The launching pad is Cline's (2016) coefficient that a 10 percent depreciation prompts a decrease of 1.22 percent of GDP in the trade deficit. Based on 2015 GDP, a 20 percent dollar depreciation would reduce the trade deficit by $440 billion. This calculation assumes that resources are available to increase domestic output by $440 billion, an assumption

imports by denying a deduction for business purchases makes imports 25 percent more expensive than equivalent domestic goods allowed as a deduction, assuming no change in the exchange rate. Alternatively, a 25 percent import tariff also makes import purchases 25 percent more expensive, again assuming no change in the exchange rate. Parallel arithmetic applies to exports.

20. The reduced-form estimates in the appendix of Cline (2016) do not divide between imports and exports. However, the magnitude of the effect is broadly in line with a model that assumes a price elasticity of 1 for US imports (so there is no adjustment on the import side when measured in dollars because the price change offsets the volume change), and 1 for US exports measured in foreign currency terms (implying that the nominal dollar increase of a dollar devaluation takes place entirely on the export side).

21. In an op-ed, Martin Feldstein embraced the Auerbach and Holtz-Eakin view that BTAs would be accompanied by a full exchange rate offset. See "The House GOP's Good Tax Trade-Off," *Wall Street Journal,* January 6, 2017, www.wsj.com/articles/the-house-gops-good-tax-trade-off-1483660843.

22. Under the current worldwide taxation system, all earnings of a US company, no matter where earned, are subject to the statutory US corporate tax rate at 35 percent, less a credit for foreign taxes paid. Companies can defer tax payments on foreign income until repatriated to the United States. Due to the high US statutory corporate tax rate and the worldwide taxation system, many US MNCs have chosen to defer tax payments on their foreign income, hoping for a more reasonable corporate tax rate brought about by comprehensive tax reform.

23. See "Dollar to Benefit If $2.5 Trillion in Cash Stashed Abroad Is Repatriated," *Wall Street Journal*, November 26, 2016, www.wsj.com/articles/2-5-trillion-foreign-profit-stash-could-be-another-boon-for-u-s-dollar-1480096695.

Box 1 Blueprint revenue impact

BTAs will generate sizable revenue for the US Treasury so long as the United States runs trade deficits. Given projected 2016 trade values, BTAs at a 20 percent rate would have brought nearly $100 billion to the Treasury Department per year. Revenue of this magnitude depends on a continuing trade deficit of about $500 billion annually. For a contrary scenario, assume that there is no exchange rate offset and that BTAs reduce the trade deficit by $440 billion (applying the parameter of Cline 2016). In that case, the revenue gain from BTAs will shrink.[1] On the other hand, additional revenue would be generated by the rise in domestic output, estimated at 18 percent of $440 billion, or $79.2 billion annually.[2] Pomerleau (2016) at the Tax Foundation estimated a static BTA revenue gain of $1,069 billion from 2016 to 2025, assuming no change in the trade deficit. This figure is corrected in table B1.1 to reflect a much smaller trade deficit and higher GDP under the extreme assumptions of no exchange rate offset and spare economic capacity. Added to the picture is a one-time tax on retained earnings held abroad, generating revenue of $185 billion.[3] But lower business tax rates would lead to revenue losses, estimated by Pomerleau (2016) at $1,807 billion for corporations over the next decade and $515 billion for pass-through firms. These items are subtracted. Table B1.1 summarizes the various estimates by the Tax Foundation along with the mentioned extreme effects of much lower trade deficits and higher GDP.

Table B1.1 Tax Foundation estimates on the Ryan/Brady Blueprint revenue impact on a static basis

Feature	Billions of dollars, 2016–25	Average annual impact, billions of dollars
Border tax adjustment	1,069	106.9
Correction for a lower trade deficit	(880)	(88.0)
Correction for revenue from higher GDP	792	79.2
Lower the corporate tax rate to 20 percent	(1,807)	(180.7)
Repatriation of deferred foreign-source income	185	18.5
Cap the tax rate for pass-through entities at 25 percent	(515)	(51.5)
Total	**(1,156)**	**(115.6)**

Source: Pomerleau (2016) and authors' calculations.

1. A reduction of $440 billion in trade deficit translates to a loss of $88 billion ($440 billion * 20%) in tax revenue from the BTAs each year.

2. According to the Federal Reserve Bank of St. Louis, federal receipts as a percent of GDP were 18.02 percent in 2015. The data are available at https://fred.stlouisfed.org/series/FYFRGDA188S.

3. The Blueprint proposes a split one-time tax on accumulated earnings held abroad by US multinationals. The tax rate is 8.75 percent if the earnings are held in cash or cash equivalents and 3.5 percent if held in other forms (e.g., reinvested in plant and equipment abroad). Accumulated earnings held abroad amounted to $2.5 trillion in September 2015. Assuming half of the $2.5 trillion is held in cash and equivalents, and half in other forms, this feature would generate $153 billion revenue. However, the Blueprint permits this one-time tax to be paid over a period of 8 years. Pomerleau (2016) estimates $185 billion revenue from the one-time tax, paid over the next decade, probably based on a higher level of accumulated earnings and a higher cash portion.

that can be challenged when conventionally measured unemployment is only 4.6 percent.[24]

Nevertheless, based on these extreme assumptions, box 1 summarizes the revenue impact of the business tax reform package proposed by the Blueprint. Table B1.1 indicates that the projected annual impact of the whole business tax package, coupled with BTAs, would decrease US tax revenue by about $116 billion per year. If lost revenue equates to an increase in the fiscal deficit of the same amount, and if the US economy still has spare capacity after the assumed decrease in the trade deficit, then GDP might rise by an additional $116 billion annually. Adding the initial decrease in the trade deficit and the rise in the fiscal deficit, the implied increase in GDP is $556 billion, or about 3.1 percent of base GDP.[25] A 3.1 percent increase in GDP with no jump in inflation, no

24. US GDP in 2015 was $18,037 billion and the unemployment rate in November 2016 was 4.6 percent. GDP data is from the World Bank, and the unemployment rate is from the Bureau of Labor Statistics.

25. These calculations all assume a GDP multiplier of 1.0, in other words no follow-on expansion of GDP after the initial impulse. The exchange rate impact is greater than the BTA because of net stimulus from other elements in the Blueprint tax package.

second-order increase in the trade deficit, and no rise in the dollar exchange rate strains credulity.

However, any observer who can confidently state the extent of spare capacity in the US economy can derive the implied exchange rate offset, again using Cline's (2016) parameter. For example, if spare capacity is zero (the Auerbach/Holtz-Eakin assumption), BTAs together with the rest of the tax package would require a 25 percent rise in the dollar exchange rate to ensure sufficient real goods and services to accommodate excess domestic expenditure.[26] Alternatively, if spare capacity is 2 percent of GDP ($361 billion), then $195 billion of excess expenditure ($556 billion minus $361 billion) will spill over into a larger trade deficit, requiring a 9 percent rise in the dollar exchange rate. Finally, if indeed spare capacity equals 3.1 percent of GDP, there need be no offsetting rise in the exchange rate.

Looking back from 2019, for example, other macroeconomic changes in the world economy may well exert a greater impact on the dollar exchange rate than BTAs and the associated tax package. For starters, it's not clear how or whether the Federal Reserve would change the stance of monetary policy in response to a cash flow tax. As in Australia and Japan, the Fed might accommodate any upward pressure on prices by not raising short-term interest rates. On the other hand, the Fed might not offer such accommodation (the stance of the Bundesbank in response to the German VAT).

Moreover, President-elect Trump's agenda contemplates a huge infrastructure spending program, perhaps $200 billion annually for the next four years, alongside a tax-induced boom in private investment. With these changes, expenditures might exceed US economic capacity by a large margin. Long-dormant inflation could return, interest rates may rise sharply, and the dollar exchange rate could surge.

Alternatively, after an abnormally long recovery, the US economy could incur its next recession: Interest rates could fall back toward zero and the dollar exchange rate might decline. Apart from the state of the US economy, macroeconomic events in China, Europe, Japan, and other countries and regions will also affect the dollar.

In retrospect, it might be difficult to separate BTAs not only from other tax policy events but also from myriad macroeconomic forces that move exchange rates.

IV BTA TAX INCIDENCE

Assuming US imports exceed US exports by $500 billion annually, border adjustments at a 20 percent rate would raise approximately $100 billion for the US Treasury each year, since revenue collected through the denial of business deductions on imports would exceed revenue forgone through the exemption of exports from the tax base. The question naturally arises: Who would ultimately pay the net tax amount collected by the Treasury?

The answer circles back to the exchange rate offset question. If there is no offset, ultimate consumers of imported goods would bear the incidence of the tax, since intermediate business purchasers (Walmart, General Motors, etc.) would mark up their own selling prices to recoup the higher after-tax cost of imported goods and services. Meanwhile, US exporters that enjoy tax relief might increase their profit margins in the short run and lower their foreign selling prices in the medium term. However, if there is no exchange rate offset, the US trade deficit will almost certainly shrink over time, and with it the net tax collected by the Treasury.

On the other hand, if the exchange rate offset is complete, US importers will pay no more in dollar terms than they did before the cash flow tax, and US exporters will likely charge the same dollar prices as before, since tax exemption will cancel out dollar appreciation. In that event, the inescapable conclusion is that foreigners pay the tax, via the terms-of-trade impact of dollar exchange rate appreciation. US imports will bring their foreign sellers fewer dollars; US exports will cost their foreign buyers more foreign exchange. The fact that foreigners pay the tax under a complete offset assumption about exchange rates makes the cash flow tax an attractive proposition to US legislators.[27]

CONCLUSION

Border tax adjustments will be hotly debated as a key feature of the cash flow tax proposed in the Ryan/Brady Blueprint. This Policy Brief examined border tax adjustments from the perspective of their compatibility with WTO rules, their possible impact on the dollar exchange rate, and the resulting effects on tax incidence brought by exchange rate movements. All aspects defy dogmatic predictions. The Trump administration and Congress will need to evaluate BTAs from different angles, realizing that decisions taken will carry the US economy into uncertain terrain.

26. Calculated as 3.1 percent of GDP "excess" expenditure (i.e., in excess of US economic capacity) divided by the 1.22 percent parameter, giving 2.54, and then multiplied by 10 percent devaluation.

27. In this extreme case, the nominal trade deficit expressed in dollars would shrink because the BTA lowers the relative price of traded goods. For example, a $500 billion trade deficit would shrink to $400 billion with a 20 percent BTA.

APPENDIX A RYAN/BRADY BUSINESS TAX REFORM PROPOSAL

On June 24, 2016, in close cooperation with House Speaker Paul Ryan, Ways and Means Committee Chair Kevin Brady issued a comprehensive tax reform plan, called the Blueprint.[28] Key business tax reform proposals in the Blueprint (applied to small and large firms alike) include:

- Tax cash flow rather than corporate income, where cash flow is defined as revenues minus purchased inputs (including capital outlays) and wages (cash flow thus includes interest payments).
- Lower the cash flow tax to a flat rate of 20 percent: The current US statutory corporate tax rate is 39 percent (federal 35 percent plus an average 4 percent combined rate at the state level), the highest among OECD countries. This substantial cut, if implemented, will be the largest tax cut in US history.
- Cap the tax rate at 25 percent on pass-through entities (see box A.1): Under current US tax law, income earned by pass-through entities is taxed based on seven income tax brackets, ranging from 10 percent to 39.6 percent. The Blueprint consolidates the seven brackets to three (12 percent, 25 percent, and 33 percent) and caps the highest tax rate for income earned by pass-through entities and sole proprietorships at 25 percent. Like Subchapter C corporations, the cash flow of pass-through entities would be subject to border tax adjustments.
- Repeal the corporate and individual alternative minimum taxes.[29]

Box A.1 Sole proprietorship, pass-through entity, and Subchapter C corporation taxation

When starting a business in the United States, entrepreneurs must decide what business structure to use, as different business structures are taxed differently. Three common forms of business structure in taxation are sole proprietorships, pass-through entities, and Subchapter C corporations.

As suggested by its name, a sole proprietorship is owned entirely by one individual. Business earnings of the sole proprietorship, together with income from other sources, are taxed at individual rates.

Pass-through entities include Subchapter S corporations, master limited partnerships (MLPs), limited liability partnerships (LLPs), real estate investment trusts (REITs), and several others. Pass-through firms do not pay taxes at the business level. Instead, all earnings are distributed to households and taxed at individual income tax rates.

Different from pass-through entities, Subchapter C corporations are first taxed on business earnings at the corporate tax rate and second at individual income tax rates when earnings are distributed to shareholders as dividends or capital gains. This two-level taxation makes Subchapter C corporations less desirable from a tax standpoint but they have other advantages.[1]

Compared with the other types of business structure, pass-through entities have played a much larger role in the US business landscape over the past decades. In 1980 they accounted for only 8 percent of US business income; the figure increased to 54 percent in 2012.[2]

1. See table 2 in our blog "Blue Skies for Business Tax Reform? Part 2: Lower the Corporate Tax Rate," Realtime Economic Issues Watch, April 19, 2016, Peterson Institute for International Economics, https://piie.com/blogs/realtime-economic-issues-watch/blue-skies-business-tax-reform-part-2-lower-corporate-tax-rate, for an illustration on tax burdens borne by a pass-through entity and a Subchapter C corporation.

2. These statistics are from table 1: Selected financial data on businesses, SOI Tax Stats–Integrated Business Data, Internal Revenue Service, www.irs.gov/uac/soi-tax-stats-integrated-business-data.

28. The plan covers individual income taxation of families and individuals as well as business taxation of firms both small and large. See "A Better Way: Our Vision for a Confident America. Tax," http://abetterway.speaker.gov/_assets/pdf/ABetterWay-Tax-PolicyPaper.pdf.

29. The corporate alternative minimum tax is applied at a rate of 20 percent on taxable income that exceeds certain thresholds. Corporations are required to pay the higher of the regular tax or the minimum tax for the taxable year. The calculations are complex; for detail, see "Internal Revenue Code, Subtitle A, Chapter 1, Subchapter A, Part VI–Alternative Minimum Tax," www.law.cornell.edu/uscode/text/26/subtitle-A/chapter-1/subchapter-A/part-VI. A similar concept applies to individual income taxation. Repealing the corporate alternative minimum tax simplifies Subchapter C taxation, and eliminating the individual alternative minimum tax simplifies pass-through taxation.

- Allow firms to fully and immediately deduct the cost of investment in calculating cash flow.
- Adjust the tax at the border by exempting export sales and disallowing deductions for import purchases: The goal of border adjustment is to ensure that taxes are imposed on the location of consumption (consumption-based tax) rather than the location of production. For this reason, US exports of goods, services, and intangibles (by definition, consumed abroad) would not be taxed in the United States, but US imports would be taxed since no deduction would be allowed to the firm that purchases them.
- Replace the US worldwide tax system with a territorial tax system.[30] Accumulated foreign earnings will be taxed at a one-time rate of 8.75 percent if held in cash or equivalents, and at 3.5 percent otherwise. Companies have 8 years to pay the tax on accumulated foreign earnings.
- The Blueprint does not address border adjustments for household purchases of goods and services from foreign suppliers.

30. Unlike the current US worldwide corporate tax system, under a territorial tax system, corporate profits earned from production abroad are not subject to US corporate tax. However, safeguards prevent mobile passive income (especially interest income and royalties) from taking advantage of the territorial feature.

APPENDIX B LITERATURE ON VATs, BTAs, EXCHANGE RATES, AND TRADE FLOWS

Desai and Hines (2005): The authors studied the impact of value-added taxes on international trade. Evidence from 136 countries in 2000 and an unbalanced panel of 168 countries from 1950 to 2000 indicated that countries with VATs trade less (both exports and imports). Desai and Hines argued that this happens both because traded goods tend to have higher VAT rates, thus pushing consumption and production to nontraded goods, and because exports do not receive full VAT refunds.

Nicholson (2010): The author examined a panel data that covers 12 years, 29 industries, and 146 countries to study the impact of other countries' tax regimes (including VATs) on US international trade with its trading partners. Nicholson drew a similar conclusion that the presence of VATs reduces trade volumes (both exports and imports). However, the impact of VATs on the exporting sector is robust whereas the effect on the import side is dominated by OECD countries and extractive sectors such as oil and gas, petroleum and petroleum products, and minerals and ores.

de Mooij and Keen (2012): The authors discussed how a tax shift from social contributions (SCR) to the VAT could impact trade performance. They investigated an unbalanced panel of 30 OECD countries between 1965 and 2009 and concluded that a shift from SCR to the VAT in euro countries by 1 percent of GDP—representing a 2.7 percentage point increase in VAT and a 2.6 percentage point reduction in SCR—would generate a 0.9–4 percent of GDP increase in net exports in the short run. However, this impact on trade balance would tend to disappear in the long run.

Desai and Hines (2001): The authors examined the impact of tax-based export incentives on exchange rates in the context of a 1997 EU-US WTO dispute over the US Foreign Sales Corporation (FSC) legislation.[31] Evidence suggests that heightened prospects for repealing the FSC export incentive were accompanied by a fall in the value of the US dollar.

Verleger et al. (2016): The authors investigated the impact of BTAs on crude oil and petroleum product markets in the United States. As the country is heavily dependent on imports in these sectors, BTAs tend to increase prices paid for oil imports and the price increase will very likely be passed to retailers. Assuming a world price of crude oil at $50 per barrel, the authors found that BTAs will increase the retail price of diesel fuel by $0.27 per gallon, or 11 percent, and the retail price of gasoline by $0.30 per gallon, or 13 percent. Holding everything else constant, domestic consumers will consume fewer goods and services if they spend more on petroleum products. The authors argued that, at the $50 per barrel crude oil price, the BTAs will reduce consumer expenditures on other goods by 0.3 percent, which will decrease US GDP by 0.4 percent. The study implicitly assumes no change in the dollar exchange rate.

Auerbach and Holtz-Eakin (2016): The authors argued that the dollar exchange rates will fully offset the impact of BTAs immediately. Consequently, the imposition of BTAs would not change the volume of international trade between the United States and its trading partners, nor the magnitude of the US trade deficit.

Goldman Sachs (2016): Goldman Sachs authors argued that, owing to short-run price stickiness and exchange rate intervention by some trading partners, the dollar exchange rate is unlikely to offset BTAs immediately or fully, as Auerbach and Holtz-Eakin (2016) claimed.

Morgan Stanley (2016): The Morgan Stanley research team does not expect a full exchange rate offset for BTAs. They pointed out that, while real exchange rates tend to approach purchasing power parity (PPP) levels in the long run, deviations from PPP can be long lasting. Also, the possible WTO dispute could limit the extent to which the dollar appreciates. In their view, BTAs would likely push the exchange value of the dollar 10–15 percent higher if the cash flow tax is implemented at the proposed 20 percent level in the Ryan/Brady Blueprint, but not fully offset the impact of the cash flow tax provisions on importers and exporters.

JP Morgan (2016): In a research piece on department stores and specialty softlines, the JP Morgan research team implicitly assumes no exchange rate offset, and finds a detrimental impact on specialty stores (a 132 percent decrease in earnings per share) and a negative impact on department stores (a 14 percent decrease in earnings per share) brought by the combination of a 20 percent tax rate and BTA.

Freund and Gagnon (2017, forthcoming): In a forthcoming paper, Freund and Gagnon examine the exchange rate experience of several advanced countries that adopted VAT-type systems in the period surrounding the adoption. Among these countries, the exchange rate offset was strongest in New Zealand.

31. See "United States–Tax Treatment for 'Foreign Sales Corporations'," www.wto.org/english/tratop_e/dispu_e/cases_e/ds108_e.htm.

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