

Demystifying the Destination-Based Cash-Flow Tax

ABSTRACT This paper describes the destination-based cash-flow tax, as proposed in 2016 by Republicans in the U.S. House of Representatives, and its potential economic effects. As a new approach and a major departure from the existing business tax system, this tax and its motivation have been poorly understood by many in government, the business community, and the economics profession.

The destination-based cash-flow tax (DBCFT) has received considerable attention since the introduction of the House Republican tax plan (the House Blueprint) in June 2016 (Tax Reform Task Force 2016) and the November 2016 election that brought unified Republican control of the federal government. Although not new to the public finance or tax policy literature, the DBCFT was a novel idea for lawmakers, and its consideration generated a significant amount of lobbying activity, editorial commentary, and serious attention from tax specialists and the broader community of economists, many of whom had previously been unfamiliar with this approach. But the approach, its potential economic effects, and its rationale remain poorly understood.

Conflict of Interest Disclosure: The author is on the board of academic advisers for the International Tax Policy Forum, which as an organization does not advocate for particular policies. The author did not receive financial support from any firm or person for this paper or from any firm or person with a financial or political interest in this paper. With the exception of the aforementioned, he is currently not an officer, director, or board member of any organization with an interest in this paper. No outside party had the right to review this paper before publication.

I. What Is the DBCFT?

The DBCFT would modify the existing structure of U.S. business taxation for both domestic and international activities. With respect to the domestic side, the DBCFT would replace the income tax with a cash-flow tax, substituting depreciation allowances for immediate investment expensing and eliminating interest deductions for nonfinancial companies. On the international side, the DBCFT would replace the current “worldwide” tax system—under which the U.S. activities of U.S.- and foreign-based businesses *and* the foreign activities of U.S.-based businesses are subject to U.S. taxation—with a territorial system that would tax only U.S. activities, plus a border adjustment that would effectively deny a tax deduction for imported inputs and relieve export receipts from taxation. Popular discussion of the DBCFT proposal has focused almost exclusively on the latter provision, dubbing it the “border-adjustment tax,” though border adjustment is only one component of the broader proposal. Yet even a cash-flow tax without a border adjustment would represent a major departure from the current tax system.

The DBCFT can also be thought of in relation to consumption taxation. It follows from the national income identity,

$$GDP = C + I + G + X - M,$$

that taxing consumption can be achieved by taxing imports and income net of exports, allowing the expensing of investment, and not taxing government purchases. Indeed, this is how value-added taxes (VATs) work in practice. In particular, VATs effectively exempt purchases of investment goods and impose a border adjustment. The border adjustment is needed to tax domestic consumption because some consumption goods are imported and some goods produced domestically are not consumed domestically.

Dividing private GDP ($GDP - G$) into returns to labor (W) and capital (R), the consumption tax can be broken into two pieces: a tax on returns to labor, W ; plus a border-adjusted tax on business cash flows, $R - I - X + M = C - W$, which is the DBCFT. Thus, the DBCFT is equivalent to a tax on consumption net of returns to labor, or, equivalently, to a combination of a VAT and a wage subsidy at an equal rate. The notion of separating a consumption tax into two pieces in this manner goes back to the work of Robert Hall and Alvin Rabushka (1983), who articulated how taxing wages at the individual level—rather than at the business level—allowed for progressive wage taxation (via a tax-exempt threshold) based on an

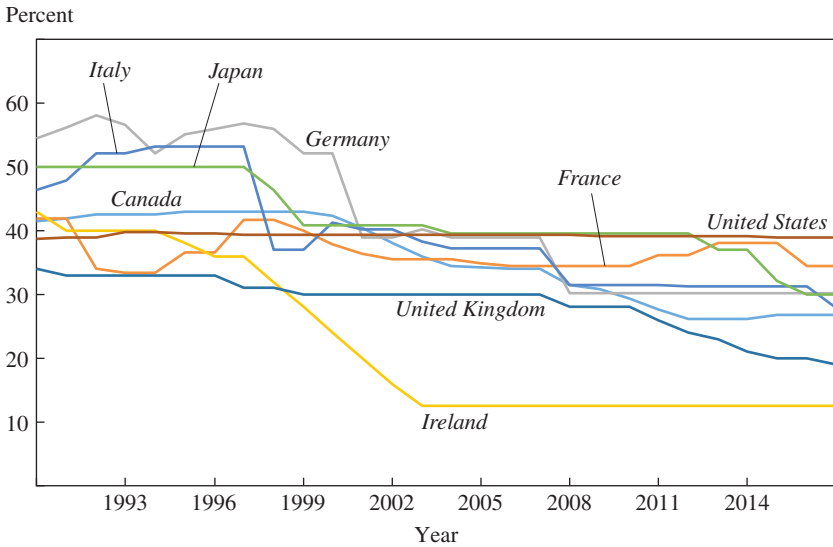
individual's ability to pay. However, Hall and Rabushka (1983) envisioned the cash-flow tax component as being imposed on an *origin* basis—that is, without a border adjustment—and early discussions of business cash-flow taxation (for example, by the Institute for Fiscal Studies 1978) likewise did not explicitly call for a border adjustment. One might think that the difference between origin- and destination-based approaches relates primarily to the timing of tax collections, to the extent that the present value of a country's trade surpluses is zero, but this fails to account for short-run adjustment, as well as potentially important differences in incentives faced by multinational corporations.

II. Why Consider the DBCFT?

There has been considerable discussion over the years of the potential benefits of a shift from taxing business income to taxing business cash flow (Auerbach 1990), which I briefly summarize here. Among the advantages are a more even tax treatment (at least at the business level) of the returns to suppliers of debt and equity capital, simplicity in not requiring the measurement of income (and, by corollary, robustness to inflation), and elimination of the tax on the normal return to investment. The last conclusion follows from the fact that, by taking the same share of investment expenses and investment returns under cash-flow taxation (assuming there is symmetric treatment of gains and losses, an issue I discuss below), the government essentially becomes a silent partner in the enterprise. Thus, for any projects that are scalable, there is no change in the company's opportunity set—it can simply expand its scale to cover the government's share. However, for projects that yield above-market inframarginal returns that are not scalable, the government collects a share of these returns. Hence, the cash-flow tax acts as a tax on pure profits, exempting from taxation only the normal return to investment. Finally, because adoption of a cash-flow tax provides no tax benefits for existing assets, it limits the windfalls that would be provided by a tax rate reduction.¹ All these arguments apply to the DBCFT as well, but the focus on applying the cash-flow tax on a destination basis is of more recent vintage. This focus reflects the evolution of the corporate sector, as well as the policy responses of governments around the world.

1. As discussed by Auerbach and Kotlikoff (1987), the distinction between expensing and rate cuts can be thought of as a tax on existing wealth, in present value, which has benefits for both efficiency and tax incidence.

Figure 1. Statutory Combined Corporate Income Tax Rates for the G-7 Countries and Ireland, 1990–2017



Source: OECD tax database.

II.A. The Changing Corporate Landscape

If, as just suggested, the effective tax rate on corporate investment can be reduced and investment encouraged without reductions in statutory corporate tax rates, then what explains the evolution of corporate tax rates over time? Figure 1 displays the combined (federal plus subnational) statutory tax rates for the G-7 countries since 1990, and also that for Ireland, a country often in the news because of its tax policy toward multinationals. Although the U.S. tax rate has changed little during this period, the general international trend has been downward, in some cases quite strongly so. As a consequence, the United States has gone from being near the low end of the group—even lower than Ireland—to being the highest, not only among the G-7 countries but also among all the countries that belong to the Organization for Economic Cooperation and Development (OECD).²

2. According to the OECD tax database, France has the next highest tax rate among the OECD countries, at roughly 4.5 percentage points below the U.S. rate. But that is unlikely to be the case for much longer, because legislation enacted before the May 2017 French presidential election provides for a gradual reduction of the corporate tax rate by more than 5 percentage points through 2020.

What is driving tax rates down? Michael Devereux, Ben Lockwood, and Michela Redoano (2008) suggest that the answer could be competition over statutory corporate tax rates, in addition to the marginal effective tax rates facing new investment, which are also affected by investment incentives such as the expensing provided under cash-flow taxation. The motivation for competing over statutory tax rates, rather than just effective tax rates, is that behavioral responses among businesses are multidimensional. Although the intensive investment decision—that is, how much to invest in a given country, given the existence of operations there—and its responsiveness to the effective tax rate have been the traditional focus of the tax policy literature (Hassett and Hubbard 2002), the relevance of other behavioral responses that depend on the statutory tax rate has grown. This shift reflects the changing nature of the business sector in the United States and elsewhere, particularly the growth of intellectual property as a source of business income, and the increasing dominance of multinational companies within the corporate sector.

As an illustration, the five largest U.S. public companies in 2016 by market capitalization were Apple, Alphabet (Google), Microsoft, Exxon-Mobil, and Amazon. Fifty years earlier, the top five by the same measure were AT&T, IBM, General Motors, ExxonMobil, and Kodak.³ There has clearly been a rise in importance of companies that rely heavily on intellectual property; it is also notable that the AT&T that topped the list in 1966 was a mammoth regulated monopoly that provided everything from telephone services to telephones to U.S. households and businesses. The rising importance of intellectual property for the economy as a whole is evident from aggregate statistics, which show a doubling of the share of intangible assets in the nonresidential capital stock during this same period.⁴ The growing importance of multinational activity (as opposed to simply exports of domestically produced goods and services) may be seen in the increasing share of the profits of U.S. companies coming from foreign operations, which have risen roughly fivefold over the past

3. I am grateful to Joe Sullivan for performing these calculations based on Compustat data.

4. According to table B.103 of the Federal Reserve's Financial Accounts of the United States, the share of nonfinancial corporate assets accounted for by intellectual property products increased from 5 percent in 1966 to 10 percent in 2016. A similar doubling is present in the U.S. Bureau of Economic Analysis's Fixed Assets Accounts table 2.1, which shows that the share of the private nonresidential capital stock accounted for by intellectual property assets increased from 6 to 12 percent over the same period.

50 years.⁵ These trends are related, of course; it is less costly to assemble and ship software or smartphones across different locations than cars or mainframe computers. With these changes have come pressures on the way most countries, and especially the United States, try to tax business income, making approaches based on corporate residence and the location of profits and production increasingly infeasible.

INCREASED PRESSURE ON CORPORATE RESIDENCE By continuing to impose a tax on the foreign-source active business income of U.S. companies, the United States—now alone among the G-7 countries—is attempting to impose a tax on U.S. companies that is not faced by foreign companies. For example, if two companies, one based in the United States and one based in France, both have operations in the United States and France, the United States taxes the income of the U.S. company in both countries, while France taxes the operations of both companies only in France. Thus, the U.S. company faces taxes in both countries on its French operations. Given that the United States provides a foreign tax credit, the extra tax is not particularly important in this example, given that France’s tax rate is nearly as high as that of the United States. But it matters more if the two companies also have operations in a third, low-tax country, such as Ireland, for then the additional tax on Irish income might be substantial for the U.S. company.

This situation has given rise to two types of behavioral responses, both relating to the U.S. statutory tax rate. First, because the U.S. tax is imposed on foreign earnings upon their repatriation, companies have an incentive to keep profits offshore, a so-called lockout effect. Recent estimates by the Joint Committee on Taxation put the accumulation of untaxed offshore earnings at \$2.6 trillion.⁶ Second, companies that can relinquish U.S. residency through a corporate inversion (so named because the earliest such transactions were accomplished through an inversion of the ordering of the U.S. parent and an offshore subsidiary in the corporate structure) may avoid the additional layer of U.S. taxes on their offshore earnings by taking up residence in a country that does not impose worldwide taxation. Although a series of governmental actions (including provisions of the American Jobs

5. According to table 6.17 of the National Income and Product Accounts, the fraction of before-tax corporate profits of U.S. residents (equal to domestic profits net of payments to foreigners, plus foreign profits) coming from foreign profits increased from 6.3 to 31.1 percent.

6. A letter containing the estimate from the Joint Committee on Taxation to the House Ways and Means Committee can be found at <https://waysandmeans.house.gov/wp-content/uploads/2016/09/20160831-Barthold-Letter-to-BradyNeal.pdf>.

Creation Act of 2004 and Treasury regulations adopted during the Obama administration) have placed various hurdles in the path of corporate inversions, they have not stopped the inversion process, which now requires a merger with a sufficiently large non-U.S. company.⁷

INCREASED PRESSURE ON THE LOCATION OF CORPORATE PRODUCTION As figure 1 illustrates, companies that produce and earn income in the United States face a higher statutory tax rate than those that produce in other countries. Many skeptics about the relevance of this disparity for production decisions have noted that the U.S. effective tax rate is below the statutory rate, because of investment incentives like bonus depreciation. However, for discrete location decisions, which may involve not only the level of investment but also the location of profitable activities (for example, firm-specific rents), statutory tax rates may matter as well, because profits are subject to the full tax rate. For instance, Devereux and Rachel Griffith (1998) find that location decisions depend on statutory tax rates, not just marginal effective tax rates. Thus, a higher U.S. statutory tax rate encourages companies, whether domestic or foreign, to locate production activities elsewhere.

Although definitive empirical evidence is lacking on the changing sensitivity of production location decisions over time, it is plausible that the nontax costs of relocation are lower today, given that more companies already have extensive international production networks and that the added transportation costs from a new location are likely to be lower.

INCREASED PRESSURE ON THE LOCATION OF REPORTED CORPORATE PROFITS Perhaps the most salient aspect of corporate tax avoidance, at least for the general public, is the profit-shifting behavior whereby companies report large profits in tax havens and other low-tax countries.⁸ One recent estimate by Gabriel Zucman (2014) indicates that over half of U.S. corporate profits reported from overseas operations were located in tax havens (including Ireland, Luxembourg, the Netherlands, and Switzerland).

Although profit shifting may be accomplished through the location of tax-deductible activities such as borrowing in high-tax countries, one

7. Bloomberg maintains a corporate inversion tracker at <https://www.bloomberg.com/graphics/tax-inversion-tracker/>.

8. There is no clear distinction between a low-tax-rate country and a tax haven, and there has been much litigation on this issue, as with the current dispute between the European Commission and Ireland over its taxation (or nontaxation) of Apple (European Commission 2016). In general, a tax haven is a country that, in addition to having a low tax rate, has other practices that facilitate profit shifting.

mechanism that has received considerable attention—and, indeed, was an important focus of a recent, massive OECD project on base erosion and profit shifting—is the use of artificial internal transfer prices between parts of the overall enterprise to inflate the share of overall costs incurred in high-tax countries and to inflate the share of overall revenues achieved in low-tax countries.⁹

Although manipulation of transfer pricing is a long-standing issue, the growth of intellectual property use and multinational operations exacerbate the challenge governments face in attempting to determine where profits are generated among a range of possible jurisdictions through the use of unique, intangible assets with no clearly identifiable physical location. And again, the firm's incentive to engage in transfer-pricing manipulation depends on a country's statutory tax rate, because it is the location of profits alone that is being altered.

There is, of course, no exact measure of the extent to which the location of profits is misreported, because this would presume an ability to measure the correct location. This would be difficult, in part because it would imply that profits are made at a specific location when they are generated jointly by simultaneous production activities in different locations. However, one can construct rough estimates by comparing the reported location of profits with the location of less easily manipulated measures of activity, such as sales and payroll. Using this approach—allocating the worldwide profits of U.S. multinationals according to a simple average of worldwide payroll shares and sales shares—Fatih Guvenen and others (2017) estimate that these companies shifted \$280 billion in profits out of the United States in 2012.¹⁰ This overstatement of net U.S. imports would account for more than half of that year's trade deficit.

II.B. The DBCFT as a Solution

All the problems with the current U.S. tax system just discussed relate to the U.S. statutory tax rate, and a simple response to address them would be a substantial reduction in the corporate tax rate, as well as the tax rate

9. As a simple example, a U.S. parent company with a subsidiary in Ireland could sell an asset to the Irish subsidiary at a low price and then lease the services of that asset back at a high price. There are, of course, rules that attempt to limit such activity, and an objective of the OECD project was to strengthen such rules.

10. Clausing (2016) arrives at estimates of a similar size using a somewhat different, regression-based methodology, also based on aggregate data. Dharmapala (2014) provides a general survey of methodology and evidence regarding worldwide profit shifting, including estimates based on firm-level behavioral responses.

for pass-through entities (that is, businesses not subject to the corporate tax), which now account for about half of all business income generated in the United States (DeBacker and Prisinzano 2015). However, as a practical matter, other measures would be needed to offset the large associated revenue loss, and it is in determining these other measures that attempts at corporate tax reform have foundered in the recent past. Further, reactions by other countries could lead to another round of tax rate reductions and raise the need for further action.

Other reform proposals have attempted to change the structure of taxation as a way of dealing with the problems of the existing system. For example, many have called for the United States to adopt a territorial tax system, whereby it would relinquish its residual claim on the offshore profits of U.S. companies. But while a shift to a territorial tax system would help address the problems associated with U.S. residence,¹¹ it would increase the incentives to shift offshore profits and activities, which would no longer face any residual U.S. tax if moved abroad. Indeed, as the recent tax rate trends portrayed in figure 1 illustrate, the two G-7 countries that most recently (in 2009) adopted territorial tax systems—the United Kingdom and Japan—show little evidence of having alleviated the need to reduce their corporate tax rates to remain competitive. An alternative would be to move closer to worldwide taxation, by adopting a substantial minimum tax without deferral on U.S. companies' offshore earnings. This approach would reduce U.S. companies' incentives to shift their activities and profits abroad, because their offshore earnings would face higher U.S. taxes, but would increase the tax penalty on U.S. residence and therefore increase their incentives for corporate inversion.¹² Combining these two approaches, marrying a territorial system with a worldwide minimum tax (as proposed by the Obama administration in its later years), would entail compromises with respect to the different objectives.

By contrast, the DBCFT forcefully confronts all the problems discussed here, and does so in a manner that makes business decisions no longer sensitive to the U.S. tax rate on their activities. Like a territorial tax system, it would impose no penalty for being a U.S. resident company—the tax provisions would apply equally within the United States to foreign companies.

11. The lockout effect would vanish because there would be no tax on profit repatriation, and inversions would lose their appeal because U.S. companies would no longer face an additional tax on offshore income.

12. By eliminating deferred taxation of offshore profits under the minimum tax, this approach also would lessen the lockout effect, discouraging profit repatriation.

Because transactions with related foreign entities would be ignored by the tax system (the border adjustment would offset any U.S. tax on receipts or deduction of expenses associated with cross-border transactions), there would be no incentive to use transfer-pricing manipulation to reduce U.S. profits. Indeed, because profits in other countries would still be increased by such activity (assuming these countries maintained their existing tax systems based on the location of production), companies would have an incentive to shift profits *to* the United States.¹³ Finally, because the border adjustment would have the effect of imposing a tax based on where products are sold rather than where they are produced, the DBCFT would eliminate any tax on business profits imposed as a consequence of producing in the United States. Again assuming that other countries continue to tax profits based on the location of production, this would introduce a tax differential *in favor* of producing in the United States.

Perhaps the simplest way to demonstrate this last point builds on my discussion of border adjustment in Auerbach (1997). Consider again the tax base of the DBCFT in terms of components of the national income identity, equal to domestic cash flow plus the trade deficit,

$$\text{DBCFT Tax Base} = R - I - X + M.$$

Because the current account and capital account must balance, the trade deficit equals net foreign-source income less net foreign investment, $M - X = R^f - I^f$. Combining these equations yields

$$\text{DBCFT Tax Base} = (R - I) + (R^f - I^f).$$

That is, the DBCFT imposes a tax on domestic as well as cross-border cash flows. Without a border adjustment, the tax base is just domestic cash flow, $R - I$.

Thus, for projects with a positive present-value cash flow, either because of inframarginal returns to new investment or any returns to past investment, the tax without a border adjustment imposes a positive tax liability on domestic projects and discourages locating such projects in the United States. A firm could reduce its U.S. tax liability by locating the new project (or relocating an existing project) abroad, although the net tax consequences would of course depend on foreign taxes (as well as the firm's ability to avoid U.S. taxes by shifting profits).

13. See examples 9 and 10 given by Auerbach and Holtz-Eakin (2016).

By contrast, the DBCFT imposes the same U.S. tax liability regardless of where the project is undertaken.¹⁴ If a project is undertaken with funds from the United States, it will either involve domestic investment and returns (elements of I and R), or investment abroad and returns from abroad (equal-sized elements of both I' and R'), assuming the same underlying project. If the project is undertaken with funds from abroad, it will either be located abroad and have no contact with the U.S. tax system, or will occur via inbound U.S. investment and outbound returns, generating elements of I and R , but also cross-border cash flows of the same absolute value but opposite in sign in the expression for the DBCFT base—a positive element of I' and a negative element of R' .¹⁵ Combining the domestic and cross-border components, the net U.S. tax base will again be zero. Whatever the source of investment funds, then, there will be no incremental U.S. tax imposed as a consequence of locating the project in the United States rather than abroad. In this sense, there will be no “made in America” tax, to adopt a recent slogan.

As with profit shifting, eliminating U.S. tax consequences would not leave taxes out of location decisions, to the extent that other countries continue to tax based on the location of production. Again, the environment would be one favoring a U.S. location.

Note that all these effects of the DBCFT hold even if the tax rate faced by businesses remains at its current level.

III. Issues Confronting the DBCFT’s Potential Adoption

Although transition issues confront adoption of any major tax reform, some are rather specific to the DBCFT, and hence worth particular attention.

III.A. Tax Revenues

One of the attractions of the DBCFT, as proposed in the House Blueprint, is the large revenue gain over the next several years associated with the border-adjustment provision. Although there is no official revenue estimate available from the Joint Committee on Taxation, Jim Nunns

14. Although cross-border taxation applies to imports and exports, rather than directly to income and investment flows, the effect on the latter will occur through adjustments in the real exchange rate (discussed below), which lower their real values from a U.S. perspective.

15. For example, a \$100 investment from abroad that yields concurrent returns of \$120 will generate domestic cash flows of \$20 but a net cross-border flow of -\$20, with no impact on the DBCFT base.

and others (2016) at the Tax Policy Center estimate that the border-adjustment provision would generate approximately \$1.2 trillion in tax revenue over the 10-year budget window ending in fiscal year 2026. This estimate reflects the large trade deficits forecasted under current law. Leaving aside the usual difficulties involved in forecasting revenues, this estimate has been subject to two main criticisms, one involving whether estimated short-run gains will materialize and the other suggesting that any such gains will be temporary.

The first argument is that, to the extent that the border adjustment reduces trade deficits, the revenue associated with the border adjustment will evaporate. To focus on the revenue effects of the border adjustment specifically, rather than the full reform, consider the impact of introducing the border adjustment into a system that already has the remaining elements of the DBCFT—that is, an origin-based cash-flow tax. The tax base for such a system, in terms of the components of the national income identity, is

$$GDP_B - G_B - I_B = C_B + X_B - M_B,$$

where the subscript *B* indicates values that hold before the introduction of the border adjustment. After its introduction, the tax base is

$$GDP_A - G_A - I_A - X_A + M_A = C_A.$$

The argument made here may be expressed simply as follows: If GDP, government purchases (*G*), and domestic investment (*I*) are all fixed, then the tax base rises by $M_A - X_A$; that is, the relevant trade deficit for estimating revenue is the one that holds after the reform. Hence, if net imports are low after the reform, the increase in the tax base will also be low.

However, assuming that GDP will not change rules out not only actual output effects but also any increases in measured GDP due to reduced transfer-pricing manipulation. To the extent that net imports decline simply from reduced transfer-pricing manipulation, there should be a one-for-one increase in measured GDP; that is, $GDP - X + M$ will remain constant. In other words, such a shift should not be associated with a change in consumption, and one can compare the right-hand sides of the equations given above to estimate the change in the tax base, with the result being an increase in $M_B - X_B$, the trade deficit *before* the tax reform. Put another way, once transfer-pricing transactions have been eliminated from the tax

base for multinational companies, these transactions' new levels become irrelevant to the tax base.¹⁶

The second argument, that the revenue gain from a border adjustment would be temporary, is based on the long-run constraint on trade deficits, which indicates that the present value of a country's future trade deficits equals the initial value of its international investment position (that is, net assets relative to the rest of the world). This relationship would seem to imply that at some point in the future, the United States, which now has a negative international investment position, will need to begin running trade surpluses, at which time the border adjustment will become a sink rather than a source of revenues.¹⁷ This argument, too, does not take into account the role that mismeasurement of trade deficits may play. To see this, note that the law of motion governing the evolution of the international investment position (*IIP*) is

$$IIP_t = (1 + r)IIP_{t-1} + (r_A - r)A_{t-1} - TD_t,$$

where r_A is the rate of return on U.S. international assets, A ; r is the rate of return on U.S. international liabilities, ($IIP - A$); and TD is the trade deficit. If $r = r_A$, then this expression, along with a terminal condition on the growth of *IIP*, yields the standard result that *IIP* equals the present value of future trade deficits, TD , discounted at rate r . It has long been noted, however, that $r < r_A$ for the United States. Indeed, the 2016 U.S. international investment position was $-\$8.1$ trillion but U.S. net investment income was $+\$192$ billion in the same year.¹⁸ As the equation indicates, a persistent gap between r and r_A increases the size of future trade deficits for a given evolution of the international investment position.

Although much of the focus on this gap has been on the relative importance of foreign direct investment in the U.S. foreign asset position (relative to passive investment, especially in safe, low-yielding government securities, which are more prominent in the portfolios of foreign investors

16. The same argument holds to the extent that measured GDP changes due simply to dollar appreciation. For example, if there are no changes in consumption, investment, government purchases, or the quantities of imports and exports, and the dollar value of net exports (which are negative) and hence GDP rises due to dollar appreciation, then the change in the tax base moving from before border adjustment to after will still equal $M_B - X_B$.

17. See, for example, Blanchard and Furman (2017).

18. These figures come from the U.S. Bureau of Economic Analysis's International Investment Position table 1.1 and International Transactions Accounts table 1.1, respectively.

in U.S. assets), one explanation for this difference is simply the transfer-pricing manipulation already discussed. This is because shifting profits to related foreign entities not only increases measured net imports; it also increases measured returns to offshore investments by the same amount—overstated imports generate overstated profits for foreign subsidiaries. (This is why, as discussed above, such large shares of the offshore profits of U.S. multinationals are reported in tax havens.) Trade deficits that arise through this mechanism have no impact on the evolution of the international investment position, because they generate equal-sized increases in net foreign investment income. Hence, they do not need to be offset by future trade surpluses. From the perspective of the tax base and tax revenue, then, they represent a potentially large, permanent source, if one also takes into account the previous point that one should use the trajectory of projected trade deficits under current policy (without a border adjustment) in estimating the impact on the tax base.¹⁹

III.B. Technical Tax Design Issues

Fleshing out a proposal for major tax reform is a considerable undertaking. Leaving aside transition issues, a number of other issues relate to the change in tax structure under the DBCFT. Among the important issues to be resolved are the following.

NET OPERATING LOSSES Under the existing tax system, companies with net operating losses may carry back losses to a prior year or carry forward losses (without interest) for several years to offset future tax liability. For a number of reasons, this is not a fully satisfactory approach; it blunts the effectiveness of tax benefits aimed at encouraging certain types of behavior (for example, investment incentives) and reduces the tax system's role as an automatic stabilizer, given that losses are more prevalent in a recession. But the problems could be worse under a cash-flow tax, because of the up-front receipt of deductions for investment costs (although there would be a significant offset from the loss of the interest deduction), and especially so under a DBCFT for firms with large shares of (nontaxable) exports among their sales. Using simulations based on corporate tax returns, Elena Patel and John McClelland (2017) estimate that net operating losses would increase as a consequence of adopting a DBCFT. A widespread inability

19. A similar argument applies to the extent that the measured return on U.S. liabilities falls short of the true return because of transfer pricing manipulation by foreign multinational investors on their inbound investment. These low returns also have offsetting contributions to the U.S. trade deficit.

of exporting firms to benefit from tax relief on their imports could have important consequences in the aggregate, by undercutting the symmetry between the treatment of exports and imports and making a border adjustment more closely resemble an import tariff, with the associated effects on trade.

The House Blueprint would deal with this issue by allowing firms to carry forward unused losses with interest. But this might not suffice for firms with significant export shares that might have persistent losses as a result. For such firms, some additional policy might be needed, with alternatives ranging from more generous treatment (such as refundability) of losses attributable to exports, to a liberal policy toward paper transactions structured to effectively trade such tax losses.²⁰ One potential approach, suggested by Auerbach and others (2017), would allow losses to offset other taxes due from the business, notably payroll taxes.

TREATMENT OF FINANCIAL INSTITUTIONS The traditional approach of VATs, effectively taken for nonfinancial companies under the House Blueprint, is to ignore financial transactions of nonfinancial companies in computing the tax base.²¹ But this leaves undetermined how to tax the value added (or, in the case of the DBCFT, business cash flow) of financial institutions. One possible approach would be to include all cash flows associated with financial transactions (by both financial and nonfinancial companies) in the tax base, retaining the current system's tax on interest received and tax deduction for interest paid, but now also taxing amounts borrowed and allowing a deduction for amounts lent (Auerbach 2010). As in the case of taxing real cash flows, taxing financial cash flows would exempt the normal return to financial investment but would bring the profits of financial companies—for example, the interest rate spread between borrowing and lending—into the tax base. This option would have the disadvantage of requiring all companies to include financial flows in their tax calculations. Building on this approach, however, Auerbach and others (2017) note that by netting offsetting positive and negative tax components between companies on opposite sides of financial transactions and subject to the same tax rate, one can reduce the scope of what is needed to capture the profits

20. Such an approach, called “safe harbor leasing,” was adopted in 1981 to permit firms to benefit from the Reagan tax reform’s generous depreciation deductions, but was repealed soon after, largely because of adverse public reaction to profitable companies being allowed to “buy their way” out of paying taxes. For a discussion, see Warren and Auerbach (1982).

21. The House Blueprint would deny net interest deductions for nonfinancial companies, while still taxing positive net interest. But the typical nonfinancial company would not have net interest income.

of financial institutions to the transactions between these institutions and domestic nonbusiness entities. That is, it is not necessary to tax the financial cash flows of domestic financial businesses on their transactions with domestic nonfinancial businesses, because the financial institution's tax base—interest receipts less lending, in the case of a loan—is equal to and opposite from the nonfinancial institution's associated tax base—borrowing less interest payments. The same holds for any type of financial transaction (such as insurance contracts or derivatives).

PASS-THROUGH ENTITIES To avoid exacerbating incentives for companies to change organizational form in response to inconsistencies in tax provisions, one would want major elements of the DBCFT to also apply to at least large pass-through entities. (The House Blueprint covers all such entities.) One issue to consider is the interaction of a border adjustment with differences in tax rates, which under the House Blueprint would be 20 percent for C corporations and capped at 25 percent for pass-through entities (to reflect the double taxation of C corporate income at the shareholder level). To avoid distorting trade flows between corporate and pass-through sectors, one would want to make the border adjustment the same rate for both types of entities—for example, adjusting 80 percent of the top pass-through rate if the full corporate rate is border-adjusted.

III.C. World Trade Organization Concerns

All changes in tax policy can affect the level and composition of international trade, but those that directly apply to international transactions immediately raise questions about compatibility with international agreements, most notably the rules of the World Trade Organization (WTO). In this regard, one should keep in mind that rules purportedly aimed at sustaining international trade and discouraging protectionist policies do not necessarily reflect basic economic reality.

In particular, a border adjustment as part of a VAT is practiced around the world and is not a WTO violation, consistent with the fact that, as discussed above, a border adjustment is part of what makes the VAT a tax on domestic consumption. Likewise, broad-based payroll taxes on domestic workers are not generally considered problematic. However, many trade policy analysts have suggested that the DBCFT—a policy that is equivalent to the combination of these two policies, a border-adjusted VAT plus a reduction in payroll taxes—may violate WTO rules and could be struck down if another country challenges it (Schön 2016). Among concerns expressed are that (i) a border adjustment may not be allowed for direct taxes (on businesses or individuals), as opposed to indirect taxes (on products); (ii) a border adjustment

in excess of domestic tax collected (which occurs because wage costs are deductible under the DBCFT and yet all export revenues are subject to a border adjustment) represents an export subsidy; and (iii) not giving suppliers of imported goods a deduction for foreign labor costs favors domestic producers over foreign ones. Accepting the possibility that an appeal to substance over form may not be enough, Itai Grinberg (2017) offers some suggestions for resolving this potential conflict by altering the form of the DBCFT without altering its substance.²²

III.D. Economic Adjustment to the DBCFT

Evaluation of the DBCFT among those outside the tax policy community has focused less on its long-term benefits than on its short-run macroeconomic consequences, with respect to trade flows, exchange rates, prices, and asset values. This has been an important discussion and is still rapidly developing, as more researchers gain a greater understanding of the proposal. One relevant factor in addressing these questions is how other countries' tax and exchange rate policies would react to a U.S. reform. A related series of questions regards the incidence of the DBCFT, how this would compare with the existing tax system, and the extent to which incidence depends on the macroeconomic adjustment path.

EXCHANGE RATES AND TRADE It is useful initially to consider the impact of a border adjustment alone on trade and exchange rates. In a textbook model with sufficient simplifying assumptions, there is general agreement that the introduction of a symmetric border adjustment should have an offsetting impact on the U.S. real exchange rate, so that the fiscal devaluation implicit in the border adjustment would have no net impact on the real exchange rate or trade flows. One can cast this result in terms of the Lerner symmetry theorem, with the export subsidy and import tax having equal and opposite effects on trade (Costinot and Werning 2017). In the simplest environment, with completely flexible wages and prices, it would be indeterminate whether the real exchange rate response would happen through the nominal exchange rate via dollar appreciation, or a proportional rise in domestic wages and prices (or, for that matter, even a fall in the wages and prices in foreign countries). However, adding the assumption that exchange rate adjustment occurs faster, it is reasonable to envision that this would be the response channel.

22. One possible approach would involve having all foreign companies selling in the United States register as domestic companies, to avoid judgment that the tax system discriminates against foreign companies. As Weisbach (2017) discusses, there is also a question of whether the DBCFT conforms to terms of current U.S. tax treaties.

In a more realistic setting, this conclusion would have many potential complications. These would include the wealth effects associated with initial cross-border asset positions, the effects of changes in the incentives for production location, other countries' exchange rate management, and stickiness in exchange rate adjustment and the pass-through of exchange rate changes into prices (Auerbach (2017a)). A key question is how important these complications would be for the magnitude and speed of adjustment; for example, how long might a real exchange rate response be delayed, how much of this response might show up in domestic price and wage increases, and what might happen to trade flows and macroeconomic aggregates during the adjustment process.

Because the DBCFT is a new approach, we have no direct empirical evidence on past effects of adoption, and therefore must rely on indirect inference. Based on an empirical analysis of recent experiments with fiscal devaluation, Ruud de Mooij and Michael Keen (2013) find no significant effects on the trade balance for countries outside the eurozone (where a fixed exchange rate would predict an impact on trade).²³ Looking at historical changes in VATs between 1970 and 2015, Caroline Freund and Joseph Gagnon (2017) find an approximately full real exchange rate offset and little impact on the current account balance. But each of these studies has its limitations in our ability to draw inferences about the effects of the DBCFT. First, historical policy changes are generally smaller in magnitude. De Mooij and Keen (2013) do not consider effects on nominal exchange rates, and Freund and Gagnon (2017) study VAT changes, where one would expect (as they find) that domestic prices account for the main channel through which the real exchange rate adjusts. That is, if wages have downward stickiness, then a rise in the VAT would increase domestic costs and lead to upward pressure on prices. By contrast, because the DBCFT includes a deduction for wages, a nominal exchange rate adjustment would eliminate any upward pressure on domestic prices.

Another form of indirect evidence comes from model simulation, using empirically estimated parameters for the pass-through and the adjustment process. Based on this approach, Omar Barbiero and others (2017) find that, in the short run, the DBCFT would lead to nearly complete nominal exchange rate adjustment, but that this adjustment would be the product of roughly offsetting declines in imports and exports, due to sluggish responses of the exchange rate pass-through and price adjustment that

23. These experiments involved increases in VATs and reductions in employment taxes, which simulate the effects of border adjustment.

would discourage both imports and exports in the short run. In this scenario, the full exchange rate response would still leave the economy facing a macroeconomic shock. It should be stressed, however, in evaluating these results, that the model parameters, though based on empirical evidence, are obviously not based on evidence from adoption of the DBCFT. An incomplete pass-through and a sluggish price adjustment that might represent optimal behavior for firms in an environment with small and short-lived fluctuations in costs and exchange rates might not apply in response to the large, permanent changes associated with a border adjustment.

This last point raises the issue of expectations about a border adjustment. Given the speed of response in exchange rate markets, expectation of a border adjustment should lead to immediate dollar appreciation. But the magnitude of dollar appreciation also depends on the policy being viewed as durable. Expectation of a quick reversal, which some have suggested might be more likely in the face of a WTO challenge, could lessen the exchange rate response and cause further short-run macroeconomic effects.²⁴

An interesting question to address is how a border-adjustment phase-in would influence predicted results. Such a policy would make little sense in a model with fast responses of exchange rate and pass-through adjustments, as the exchange rate response in anticipation of a future border adjustment could lead to a short-run worsening of domestic competitiveness. But the answer is less clear in more complex models, and it is quite possible that short-run economic disruptions would be reduced by a carefully phased implementation. As an alternative, or in conjunction, one might also consider changing, at least in the short run, the entities to which border adjustments are applied—shifting from U.S. entities to their foreign trading partners, providing tax refunds to purchasers of U.S. exports, and imposing taxes on those firms exporting to the United States. Though this would be a less traditional approach to a border adjustment, it would deal directly with any short-run stickiness of export and import prices in dollar terms; the border adjustment on exports would offset the higher foreign currency prices faced by purchasers of U.S. goods abroad, and the border adjustment of imports would not be added to the dollar prices faced by U.S. importers.

The overarching point here is that all major tax changes involve confronting a range of significant transition issues. Transition provisions represent

24. Baumann, Dieppe, and Dizioli (2017), also using model simulation, find the duration of a border adjustment to be the main factor determining whether the economy experiences significant short-run macroeconomic shocks.

an important component of the tax reform process, and ignoring this would lead to distorted conclusions in weighing short-run transition costs against long-term benefits.

ASSET REVALUATIONS AND TAX INCIDENCE If border adjustment leads to a large appreciation of the dollar, this would have significant implications for the real values of cross-border assets and liabilities. Assets and liabilities of U.S. individuals and firms denominated in foreign currencies would fall in value, and dollar-denominated assets and liabilities of foreign individuals and firms would rise in value, as measured in home currencies. Aside from wealth effects, this could cause particular problems for foreign private and sovereign borrowers with large dollar-denominated liabilities.²⁵ The wealth effects, in particular, have received attention because they have sometimes been perceived as an unintended and negative consequence of border adjustment.

However, it is worth keeping in mind the role that border adjustment plays in the construction of a DBCFT, or a VAT. As noted above, border adjustment is part of what makes a VAT a levy on domestic consumption. Without a border adjustment, a VAT is a levy on domestic production less investment. Relieving the tax on exports and introducing a tax on imports converts the VAT into a levy on domestic consumption, regardless of the source of the goods and services. The same logic applies to the DBCFT, with the difference that the tax is on consumption financed by sources other than wage and salary income. That is, as discussed above, a DBCFT is effectively a cash-flow tax on U.S.-owned domestic and foreign assets. It is the imposition of this cash-flow tax on foreign assets that effectively leads to these assets' loss of purchasing power. Indeed, this loss would occur regardless of whether the real exchange rate response happened through dollar appreciation or an increase in U.S. wages and prices—either way, the purchasing power of U.S.-owned foreign assets would decline. From the perspective of foreign holders of U.S. assets, the windfall produced by a border adjustment serves to offset the loss of asset value that otherwise would be induced by the imposition of the domestic cash-flow tax. (If the corporate income tax is eliminated as part of the reform, the net windfall to foreigners is the same as the windfall gain they would receive from corporate tax repeal in isolation.) This offset is not exact, due to a variety of complicating factors, such as pricing some

25. Even though international debtors may borrow in dollars because of unstable home currencies, the risk posed by border adjustment could in principle be hedged using swaps against other major currencies, assuming that there is little likelihood of broader adoption of the DBCFT.

foreign assets and liabilities in dollars and the fact that the cash-flow tax falls more on equity owners rather than uniformly on all asset holders. And, of course, transition provisions (for example, whether interest on existing liabilities would still be deductible, or whether depreciation allowances would still be permitted for previous investments) would also affect asset values;²⁶ and short-run effects on U.S. wages and prices can transfer some of the burden of the DBCFT onto U.S. workers, for example, if prices rise and corresponding wage increases lag.

These complications notwithstanding, the DBCFT is still basically a tax on domestic consumption delivered via a cash-flow tax, and therefore one that does not tax consumption financed by wage and salary income—the consumption financed by existing wealth and above-normal returns to future investments. Assuming that this consumption tax falls on the affected consumers, it would be a more progressive tax than a broad-based VAT that, taken by itself, taxes all consumption. As to the net effect on incidence of a switch from the existing corporate and business tax system to a DBCFT, this would also require knowledge of the incidence of the current tax system, about which there has been much dispute. To the extent that the current tax is borne by foreign investors, its elimination would add to the windfalls they receive. But to the extent that the current tax is shifted to U.S. workers, the progressivity of the reform would likely be enhanced.

IV. Conclusions

In late July 2017, a joint statement issued by officials from the White House and Congress announced a plan to pursue a business tax reform that would not include a border adjustment, but would be aimed at accomplishing the main goals of the DBCFT in promoting domestic production, bringing offshore profits back to United States, and protecting the U.S. tax base.²⁷ (Among the provisions that would be preserved from the House Blueprint are lower tax rates on small and large businesses, and investment expensing.) How these objectives can possibly be accomplished in a fiscally responsible manner is, to say the least, not evident, given all we know about this problem.

26. For a discussion and estimates of the effects on the values of foreign and U.S. assets and liabilities (under the simplifying, but not entirely accurate, assumption that all assets are priced in the issuer's currency), see Viard (2017). Auerbach (2017b) estimates the lost value of U.S.-owned net foreign assets, taking account of currency denominations.

27. Paul Ryan, Mitch McConnell, Steven Mnuchin, Gary Cohn, Orrin Hatch, and Kevin Brady, "Joint Statement on Tax Reform," July 27, 2017.

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