Taxing Multinational Companies in the 21st Century

Kimberly A. Clausing, *Reed College*

Abstract

The corporate tax remains a nearly indispensable feature of the U.S. tax system, since 70 percent of U.S. equity income is untaxed at the individual level by the U.S. government. Yet taxing multinational companies presents policymakers with conflicting goals. Although lower tax rates and favorable regimes may attract multinational activity, such policies erode the corporate income tax as a revenue source. Unfortunately, the Tax Cuts and Jobs Act of 2017 did not resolve this policy dilemma. Despite big reductions in corporate tax revenue due to lower rates, the 2017 tax law does not adequately address profit shifting or offshoring incentives within the tax code, nor does it improve the competitiveness of United States–headquartered multinational companies. This chapter proposes a rebalancing of U.S. international tax policy priorities. Starting from current law, there are several simple changes that can raise corporate tax revenue and adequately address profit shifting and offshoring; these changes can be implemented almost immediately within the architecture of current law. In the medium run the United States should partner with other countries to pursue a formulary approach to the taxation of international corporate income. By dramatically curtailing the pressures of tax competition and profit shifting, such an approach allows policymakers to transcend the trade-off between a competitive tax system and adequate corporate tax revenues. There is widespread international recognition of these problems; the current Organisation for Economic Co-operation and Development/Group of 20 process can serve as a steppingstone toward a fundamental rethinking of how we tax multinational companies in the 21st century.

Introduction

The U.S. system of taxing multinational companies is broken. It was broken before the 2017 tax legislation and it remains broken today. The U.S. corporate tax system raises less revenue than the revenue raised in peer nations, despite the fact that U.S. corporate profits are a historically high share of GDP. The international elements of our corporate tax system are mind numbing in their complexity. There is a clear tilt of the economic playing field toward earning income abroad rather than in the United States. The 2017 Tax Cuts and Jobs Act (TCJA) built on a flawed system and, in many respects, made that system worse.

In some respects, the persistent dysfunction of our international tax system is unsurprising. Throughout the world policymakers have been put in an impossible position, facing serious pressures from international tax competition while also attempting to protect the corporate tax base. At the same time, multinational companies are more powerful than they have ever been. They command larger profits and larger market shares than in prior decades, control a large part of the economy, and undertake the vast majority of all international trade. This economic power makes these political actors difficult to resist, especially when companies raise concerns about competitiveness and threaten to take the tax base, investments, and jobs abroad.

In many countries policymakers have responded to tax competition pressures by slowly and steadily lowering corporate tax rates and shifting more of the tax burden onto labor and consumption. These trends are troubling for a number of reasons. In a larger economic context of increasing economic inequality and a declining labor share of income, such tax policy trends risk both exacerbating income concentration and reducing possible public revenue sources. There are also risks to the larger integrity of income tax systems.

In the United States the tax cuts of the 2017 tax law did not resolve the essential tension between making the United States a competitive location for economic activity and protecting the corporate tax base. The law sacrificed large amounts of corporate tax revenue without achieving much (if anything) in terms of competitiveness. At the same time, the system became even more complicated.

Beginning from current law, there are simple changes that would rebalance our international tax system. In this chapter I suggest several useful steps that fit within the architecture of the current law. However, these proposals will be politically contentious, and companies will argue that

their competitiveness is being sacrificed in order to protect the corporate tax base.

While such arguments are vastly overstated, a more-fundamental reform of the U.S. international tax system can put an end to the trade-off between competitiveness and tax base protection, allowing both to be achieved at the same time. This reform would tax multinationals on the basis of their global profits, which would be allocated to countries by the distribution of sales rather than by the ostensible distribution of profits. By moving toward a sales-based formulary system, the tax base will become insensitive to profit-shifting motivations, and policymakers can choose a corporate tax rate without worries about fierce tax competition or profit shifting.

Formulary apportionment of corporate income has many advantages relative to the current system. It curtails conventional profit shifting, it is administratively simpler, it is suited to the global nature of business activity and the modern nature of economic value, and it can become the basis of a stable international tax regime. However, there are also implementation issues, and this system would benefit from efforts toward international consensus building. While such consensus need not be complete, the current political environment, while challenging in many respects, provides a better starting point for international cooperation than many other periods. At present many countries have shown the requisite political will to tackle this problem. The years ahead may provide a rare opportunity to push for an internationally coherent system.

While other reform suggestions have many merits, they also have important drawbacks. The Organisation for Economic Co-operation and Development (OECD)/Group of 20 (G20) framework is too incremental; it is unlikely to fundamentally change the pattern of multinational company tax avoidance. The destination-based cash flow tax (DBCFT) is conceptually straightforward but comes with substantial practical problems, especially surrounding the necessity of a border adjustment tax. Residual profit split methods have key advantages but retain aspects of the current problems associated with the arm's-length standard. Coordinated adoption of minimum taxes is promising, but it leaves open questions about the impact of non-adopting countries.

Formulary apportionment will take work, but it stands the best chance for building an efficient and stable international tax regime. Like democracy, and like capitalism, formulary apportionment could be the worst possible system, except for all the others.

The Challenge: Competing Policy Aims of Multinational Company Taxation

Policy decisions regarding the taxation of multinational companies frequently expose a tension between two competing goals: first, enhancing the competitiveness of the location for multinational company activity; and second, protecting the corporate tax base as a revenue source. In most tax systems these goals are in tension. Countries making their tax system more favorable to multinational companies by lowering their tax rates, or by instituting favorable regimes for particular activities or companies, typically erodes their corporate tax revenues.[1]

On the other hand, raising additional revenue through the corporate tax—by raising rates, clamping down on international profit shifting, or other measures—risks reducing the attractiveness of the location for mobile multinational activity. While booked profits are *far* more tax sensitive than physical investment or employment, the latter activities also respond to tax incentives. Policymakers are particularly reluctant to be aggressive in their corporate tax collection efforts for fear of discouraging jobs or investment.

Corporate tax rates have declined steadily among OECD countries since the mid-1980s: In 1985 the average statutory tax rate among OECD countries was 43 percent; in 2000 it was 30 percent; and in 2019 it was 21.7 percent.

Arguably, corporate taxation has been inhibited by a prisoner's dilemma situation. Absent coordination, countries have an incentive to lower their tax rates to try to gain tax base at other countries' expense. But if countries were to coordinate, they could sustain higher tax rates and a similar distribution of economic activity. (The aggregate amount of investment is far less tax sensitive than investment in any particular location.)

WHY TAX CORPORATE INCOME AT ALL?

One seemingly simple solution to this dilemma is to merely give up on corporate taxation, and to move capital taxation to the individual (shareholder) level. However, this approach encounters several serious problems. First, the lion's share (about 70 percent) of U.S. equity income goes untaxed at the individual level by the U.S. government, as shown in Burman, Clausing, and Austin (2017). It is unclear that there is political will to remove long-held tax preferences for endowments, pensions, retirement accounts, 529 accounts, and so forth, so this lack of individual-level equity-income taxation will remain a sizable consideration.

Second, absent corporate taxation, the corporate form becomes a tax shelter, enabling tax-free growth in investments. The absence of mark-to-market taxation of capital gains, and the highly favorable step-up in basis at death, are important aspects of that problem.[2] At present, both capital gains and dividends are taxed preferentially relative to labor income.

Third, there is reason to think that capital income is undertaxed at present, especially considering the rise of market power and the share of capital income that is not the normal return to capital, but instead some sort of rent or excess profit.[3] Indeed, as of this writing in late 2019, the normal return to most equity-financed investments is exempt from taxation due to full expensing, and the normal return to debt-financed investments receives a net tax subsidy. Corporate tax at present falls nearly entirely on returns above the normal return.[4]

Thus, protecting the corporate tax base is integral to taxing capital (including excess returns), and taxing capital is an important part of the larger income tax system. Since it is far from trivial to simply move capital taxation to the shareholder level, that leaves policymakers with important corporate tax policy trade-offs.

COMPETITIVENESS

Competitiveness is an elusive concept. Even those focusing on the tax elements of competitiveness often have more than one worry in mind. The typical worry concerns the competitiveness of the United States as a location for economic activity. A relatively high domestic corporate tax rate could encourage companies to shift economic activities abroad. Of course, beyond the factor of tax many other factors are important for making the United States a competitive economic location. These factors include the education of the U.S. workforce, the stability of U.S. institutions, research and development funding, infrastructure, and other important considerations.

In addition, many U.S. multinational companies worry about the tax competitiveness of the United States as a headquarters location. In those companies' view, a competitive tax system is one that does not unduly hamper their ability to compete with companies based in other countries. From this perspective, the lighter the tax burden placed on the foreign income of U.S. multinational companies, the more likely they can compete with companies based abroad in foreign markets. Indeed, this concern provides a logical motivation for exempting foreign income from taxation through a so-called territorial system of taxation.

Notice first that there is a tension between these two ideas of competitiveness. Exempting foreign income from American taxation may help United States–based companies compete abroad, but it also means that domestic companies may not view the U.S. as a tax-competitive location for economic activity in comparison with the lowest-tax-rate countries, even if they remain headquartered in the U.S.

Furthermore, the home tax rate being greater than the tax rate abroad provides an incentive to book profits abroad; the greater the difference between the domestic and the foreign tax rate, the larger that incentive. This leads to corresponding erosion in the corporate tax base due to profit shifting (see box 1). An important downside of a territorial tax system is that, without safeguards, it risks eroding the corporate tax base through international profit shifting.

BOX 1.

How Profit Shifting Works

Companies have many different ways to shift profits offshore. Simple methods include mispricing international trade transactions that occur within the multinational company, such that purchases from low-tax affiliates are overpriced and purchases from high-tax affiliates are underpriced. Such techniques make the low-tax affiliates appear disproportionately profitable. Although companies are supposed to price such transactions as if they were occurring at arm's length with unaffiliated companies, there is often substantial leeway regarding transfer prices that can be used to minimize global tax burdens.

Companies may also structure their finance such that interest deductions are more likely for those affiliates in high-tax countries, reducing taxable income accordingly. Companies may also use cost-sharing arrangements or other methods to transfer intellectual property to low-tax foreign jurisdictions, where the resulting profits can then be reported. Finally, companies have been adept at creating opaque chains of ownership and hybrid organizational structures to generate so-called stateless profit that goes untaxed in any jurisdiction.

Prior to the 2017 TCJA legislation, the United States had a purportedly worldwide system of taxation that taxed the foreign income of United States–based multinational companies at the U.S. rate, with two important caveats. First, U.S. tax was not due until the income had been repatriated from abroad, and if the income was held abroad indefinitely, tax was deferred indefinitely, providing a substantial incentive to book income in tax havens. While such income could not be used for U.S. investments or be returned to shareholders, it could (and frequently was) held in U.S. assets, thus making the funds available to U.S. capital markets. In addition, companies could borrow against these funds, achieving the equivalent of a tax-free repatriation.[5]

Second, cross-crediting was allowed, such that tax payments to high-tax countries could offset U.S. tax due on income earned in low-tax countries. However, as the years went by and foreign countries cut their tax rates below the U.S. statutory rate, fewer and fewer companies had excess foreign tax credits, so funds were often held abroad in the hope of more-favorable future tax treatment when the funds were eventually repatriated. And, indeed, more-favorable treatment arrived: first in 2004 as a 5.25 percent repatriation tax holiday within the American Jobs Creation Act, and later in 2017, when Congress enacted special low rates (8 or 15.5 percent) for deemed repatriation (i.e., mandatory repatriation of past earnings) as part of the 2017 tax legislation.

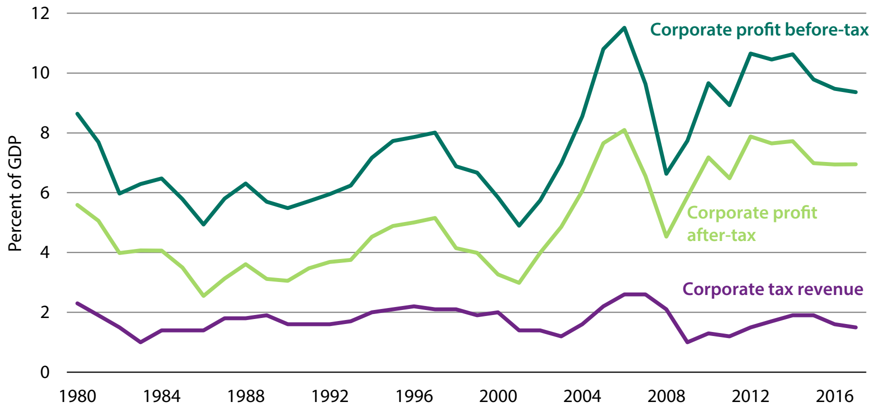
Despite the high statutory tax rate and the purportedly worldwide tax system, there was no evidence that U.S. multinational companies were at a disadvantage prior to the TCJA. That is not to say that the prior system functioned well, or that it did not need reform. But U.S. multinational companies were thriving by every possible measure.

In recent years corporate after-tax profits have soared as a share of GDP (see figure 1). At the same time, U.S. corporate tax revenues have remained flat and are much lower than those of peer nations.[6] In part, low U.S. revenues reflect the profit-shifting abilities of U.S. multinational companies; many multinational companies achieved single-digit effective tax rates as a result of aggressive profit shifting. This combination of historically high corporate after-tax profits and low corporate tax revenues gives pause to the idea that U.S. multinational companies are tax disadvantaged.

Other assessments of the competitiveness of U.S. multinational companies tell a similar story. For example, it is clear that U.S. companies have an outsized presence in the world economy. Consider the list of the world's largest and most successful global companies compiled by Forbes in 2017, the *Global 2000* (Jurney 2017). The U.S. economy is less than one-quarter

FIGURE 1.

U.S. Corporate Profits and Corporate Tax Revenues, as a Share of GDP, 1980–2017



Source: U.S. Congressional Budget Office (CBO; 2019), 1980–2017; U.S. Bureau of Economic Analysis (BEA), 1980–2017.

THE HAMILTON PROJECT
BROOKINGS

the size of the world economy in 2017: 24 percent in U.S. dollar terms, or about 15.5 percent if adjusted for purchasing power.[7] But the United States accounts for 28 percent of *Global 2000* firms by count, 31 percent by sales, and 43 percent by market value; these outsized U.S. shares have been relatively steady in recent years.

And while there have been a few high-profile instances of corporate inversions in recent years—such as a merger that converts a U.S. multinational into a foreign corporation—there is no evidence that corporate inversions were a sizable economic problem on the eve of the 2017 TCJA. Regulatory changes in 2014 and 2016 substantially reduced the incentive for corporate inversions, and observers credited these regulations for stopping several possible corporate inversions.[8]

From this starting point, the 2017 tax legislation cut corporate taxes by more than $650 billion in 10 years, presumably further enhancing the competitiveness of U.S. multinational companies by lowering their tax burden. However, as discussed in this chapter's appendix, the impact of the 2017 tax law on the competitiveness of U.S. multinational companies is, in fact, ambiguous. What is far less ambiguous are the large reductions in U.S. corporate tax revenue.

EFFECTS ON OFFSHORING

If companies can offshore profits without offshoring real investment, then the tax system might not distort the location of production activity. Companies can simply put jobs and investments in their most productive locations, and shift the resulting profit to the most lightly taxed jurisdiction. However, if profit shifting is limited, or if profit shifting is facilitated by having a real economic presence in tax havens, tax rate differences across countries will encourage not only profit shifting, but also the movement of jobs and investments to locations that are taxed more lightly.

While real economic activities are less responsive to tax rate differences across countries than the tax base itself (due to profit shifting), real economic activities still respond to tax rate differences, and the perceived mobility of real economic activity has been a big impetus toward competitive tax rate reductions over previous decades.

Concerns about offshoring generate the same trade-offs that were discussed above. To keep your location as tax competitive as possible, lighter tax rates are desirable; however, lowering corporate tax rates (at current levels) lowers corporate tax revenues, unless rate reductions are offset with other changes in tax rules that broaden the tax base.

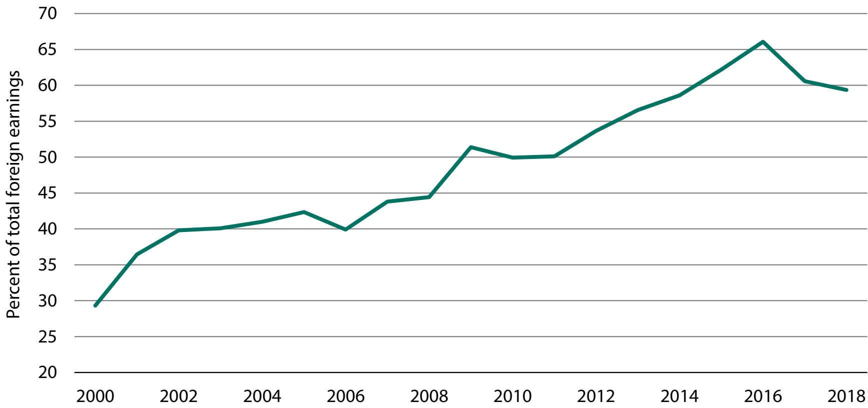
CORPORATE TAX BASE EROSION FROM PROFIT SHIFTING

There is no question that the United States loses a great deal of corporate tax revenue due to the international profit shifting of multinational companies. Depending on the data source used, between 45 percent and two-thirds of all foreign income is booked in just a small group of tax havens, tax havens that together have a population less than that of California.[9] Figure 2 illustrates this with BEA data on direct investment earnings by U.S. companies abroad.[10] In recent years a rising share of foreign profits have been booked in these top tax havens, an amount totaling $307 billion in 2018.

Other excellent data sources come from the tax authorities.[11] The U.S. Internal Revenue Service Statistics on Income database indicates large shares of foreign income in haven countries. The form 5471 data (a controlled foreign corporation information return) show 57 percent of foreign income in these seven havens in 2014, after adjusting for intra-company dividends. Recently, new country-by-country reporting tax data (form 8975) have been released for 2016. While these data are incomplete since filing was not mandatory in 2016, they also indicate large amounts of profit in the big havens.[12]

FIGURE 2.

Share of U.S. Multinational Companies' Foreign Earnings in Big Seven Tax Havens, 2000–18



Source: U.S. Bureau of Economic Analysis (BEA), 2000–18.

Note: The "big seven" havens are Bermuda, the Cayman Islands, Ireland, Luxembourg, the Netherlands, Singapore, and Switzerland. Foreign direct investment earnings are measured after-tax, which increases the share of total income in havens since tax rates in those havens are lower than those in other countries. The BEA data reported here reflect the U.S. ownership share of the underlying profit.

THE HAMILTON PROJECT
BROOKINGS

In prior work (Clausing 2019b, 2019c), I estimate that profit shifting by multinational companies is costing the U.S. government about $100 billion a year in lost revenue at pre-TCJA tax rates. (The revenue cost is lower at current tax rates.) These estimates are broadly compatible with Joint Committee on Taxation (JCT) estimates of the cost of deferral by the JCT (2014) as well as work by Guvenen et al. (2018), OECD (2015), Zucman (2015), and others.[13] These large revenue losses due to profit shifting fit with a changing corporate landscape where market power is increasingly concentrated, corporate profits are rising steadily, and corporate profits are increasingly booked offshore.

These magnitudes are also compatible with the large stocks of accumulated earnings reported in the early country-by-country reporting data. As of 2017, U.S. companies show about $3.2 trillion of accumulated earnings in tax havens.[14]

THE 2017 TAX CUTS AND JOBS ACT

In late 2017 Congress enacted Public Law 115-97, commonly referred to as the TCJA; the law took effect in 2018. The legislation combined large tax cuts for individuals, estates, many pass-through businesses, and corporations, and included sweeping changes in the international taxation

of multinational companies.[15] Overall, the JCT projected the legislation would lose about $1.5 trillion in revenue over the 10-year budget window.

Indeed tax revenues fell sharply relative to GDP in the first year of the legislation, falling from 17.2 percent of GDP in 2017 to 16.2 percent of GDP in 2018.[16] Federal corporate tax revenues fell particularly sharply.[17] Since federal receipts typically increase as a share of GDP during strong economies, the reduced tax revenues are clearly attributable to changes in tax law.

The main provisions that affect the taxation of multinational companies are summarized in table 1, alongside their expected revenue cost (or gain) from the JCT estimates. First, the corporate tax rate is cut permanently, from 35 to 21 percent. Second, the foreign income of corporations is permanently exempt from taxation through the adoption of a territorial tax system, although territorial treatment is subject to the constraints of base protection measures. Under the prior worldwide system, foreign income was taxed at the domestic tax rate (35 percent) upon repatriation, with foreign tax credits for tax paid abroad.

Third, there are two novel base protection measures, including a minimum tax (set initially at half the U.S. rate) known as the global intangible low-taxed income (GILTI). This tax applies to United States–based multinational companies, and it is payable only on returns (relative to physical assets) that exceed 10 percent. Minimum tax is due if companies' foreign income is not sufficiently taxed abroad, but the minimum tax is assessed on a global basis, so foreign tax credits from tax paid in higher-tax countries can offset the minimum tax arising from operations in low-tax countries. (Foreign tax payments are 80 percent creditable.) There is also a second minimum tax known as the base erosion and anti-abuse tax (BEAT) that affects all multinational companies; it is triggered by excessive deductible payments to related parties.

Fourth, there is a deduction for foreign-derived intangible income (FDII). While this will benefit existing companies with large amounts of export income, many doubt this provision will have a large impact on multinational company decision making. First, the provision is likely to be challenged by trading partners as an export subsidy, so the long-term stability of the provision is in doubt. In addition, since the provision only provides a subsidy for profits from exports, companies that also have substantial domestic sales receive more favorable tax treatment under the GILTI than under FDII. Thus, there is little reason to move mobile intangible income to the United States in response to this provision.

TABLE 1.

International Tax Provisions Before and After the TCJA

	Before the TCJA	After the TCJA	10-yr JCT score, in USD billions
Statutory corporate rate	35	21	–1,349
Tax treatment of foreign income	No tax until repatriation, then 35 less foreign tax credit[a]	Not taxable unless subject to minimum tax	–224
Global minimum tax	N/A	0 until threshold, then 10.5; up to 13.125 if blended with income from higher-tax countries[b]	112
Base erosion and anti-abuse tax (BEAT)	N/A	Add-on minimum tax when payments to foreign-related parties exceed threshold	150
Foreign-derived intangible income (FDII) deduction	N/A	Tax preference for profits from export sales above threshold return on assets	–64
Deemed repatriation tax	N/A	Tax on prior earnings held abroad payable over 8 years; 15.5/8% (depending on liquidity)	338

Source: Joint Committee on Taxation (JCT) 2017.

a. Lighter rates may apply, or be anticipated, due to holidays, anticipated holidays, or expectation of future favorable treatment upon transition to a new tax system. Permanently reinvested earnings are not taxed in the United States but might be expected to encounter deemed repatriation tax upon transition to a territorial system.

b. These rates are scheduled to increase after 2025, to 13.125 and 16.4 percent. Only 80 percent of foreign tax payments can be credited. This analysis ignores interaction effects between the provisions.

THE HAMILTON PROJECT
BROOKINGS

Finally, under the TCJA there is a one-time tax on prior unrepatriated foreign earnings of U.S. corporations. These earnings are taxed at a rate of either 8 or 15.5 percent, less foreign tax credits. Since those earnings have already been earned, this provision should not affect future multinational company behavior. The tax rates on the deemed repatriation represent a tax break relative to the tax treatment of repatriated earnings under prior law.

THE EFFECTS OF THE NEW TAX LAW

An appendix to this chapter considers the effects of the new tax law in greater detail. It is clear that the TCJA provided large corporate tax breaks. The net revenue loss due to the corporate provisions was forecast by JCT to exceed $650 billion.[18] However, the effects of the new law on competitiveness, offshoring, and profit shifting are less clear. In summary,

the new law does not appear to substantially improve on prior law in any of these areas for the following three reasons.

First, while domestic companies undoubtedly benefited from the large statutory tax rate decrease, some of the most mobile multinational companies faced increased tax burdens on foreign income, due to the GILTI and the BEAT, potentially harming their competitiveness. Second, there are troubling new offshoring incentives in the law due to the structure of the GILTI and FDII provisions. Third, the law contains conflicting incentives regarding profit shifting, with some provisions increasing the incentive to shift profits offshore, and others reducing this incentive. Only time will tell us the full impact of the legislation, but early evidence (figure 2) shows an unchanged share of U.S. multinational income in tax havens as well as large corporate tax revenue losses for the U.S. government.

The Proposal

STRENGTHENING THE INTERNATIONAL TAX REGIME IMMEDIATELY

The next section describes a fundamental reform of the system of taxing multinational companies that would make the policy dilemma between competitiveness and tax base protection almost moot. However, fundamental reforms take years of careful work on technical implementation issues, and although building international consensus is ideal, it is time consuming.

In the meantime, policymakers should not sit idly by while corporate tax revenues fall precipitously, enormous profits are shifted to havens, and new offshoring incentives take hold. The TCJA was fundamentally flawed, but it can be improved within the basic architecture of current law.

One question is whether to simply repeal the law in its entirety. That has some optical advantages: Congress is simply undoing a mistake. However, in international taxation current law provides a better starting point for reform than prior law in several key respects. First, the TCJA solved concerns about the prior worldwide system by ending the tax due upon repatriation. Today all foreign income is either untaxed or is taxed immediately. Previously, the tax upon repatriation generated immense taxpayer dissatisfaction as well as distortions in multinational company financing. (As explained above, it had fewer real economic consequences, since companies could borrow against their offshore funds, creating the equivalent of a tax-free repatriation. Funds could also be invested in U.S. assets.)

Indeed, moving to a territorial system was a crucial objective of the multinational community with the TCJA. The law addressed the criticism that the U.S. system, unlike that of most peer countries, was not territorial. Now, complaints focus instead on the burdens associated with the GILTI and the BEAT.

Yet the GILTI and the BEAT provide a far better starting point for international cooperation than a toothless territorial tax system. As detailed in this chapter's appendix, the GILTI helps protect foreign tax bases as well as the U.S. tax base, since it lowers the marginal incentive for U.S. multinational companies to shift profits to havens, and it also reduces the sensitivity of U.S. multinational companies to non-haven foreign tax rates.

The BEAT targets, in part, foreign multinational companies, and it is therefore less welcome in the international community. However, it discourages the profit shifting of all companies operating in the United States through a minimum tax that applies when there are excessive deductible payments to related parties abroad. Although it does not support foreign tax bases, the BEAT does signal a U.S. shift away from a nearly unlimited tolerance of profit shifting. In this respect, the BEAT may also be a useful starting point for international reform efforts.

However, in one crucial respect the TCJA is a poor starting point for a reform of multinational company taxation. The massive revenue loss under the legislation, with more than $650 billion in net corporate tax cuts under the law (not including the tax cut on deemed repatriation), makes it difficult to bring the corporate community to the table in favor of future tax reform. In particular, the legislation has already given away the carrot of tax cuts. All that is left are the sticks of higher tax rates and/or more-serious base protection.

Still, a revenue-raising corporate tax reform is the ideal path forward. I propose the following incremental reforms that all fit within the framework of today's corporate income tax. The net revenue consequence is a gain of about $1.4 trillion over 10 years.

- Increase the corporate rate from 21 percent to 28 percent. This should raise about $700 billion over 10 years. A JCT revenue score would likely be higher for 2021–30 due to nominal growth in corporate profits.

- Strengthen the GILTI minimum tax by either moving to a per country version at 21 percent or keeping a global version but harmonizing the

rate to the U.S. rate of 28 percent. The first option is estimated to raise about $510 billion over 2021–30.[19]

- Reform the GILTI by removing the 10 percent exemption for returns on foreign assets. This would raise an unspecified amount of revenue.
- Repeal FDII. This will raise $170 billion over 2021–30.[20]

The rationale for increasing the corporate tax rate is simple: We could not afford the large corporate tax revenue losses under the TCJA, and there are better uses of the forgone revenue (including tax cuts for others or spending on urgent fiscal needs). One argument for the lower corporate tax rate (of 21 percent) is that it is necessary to avoid profit shifting, corporate inversions, and the relocation of activity abroad for tax purposes. However, adequate minimum tax backstops are a better protection against profit shifting, since the vast majority of profit shifting is destined for countries with tax rates below our minimum tax rate.[21] Inversions can be prevented with simple legislative measures, discussed shortly. And, finally, there is little evidence that investment, employment, or wages are sufficiently sensitive to corporate tax rates to justify such a massive cut.[22]

There is more than one way to improve the GILTI minimum tax. One option is a per country minimum tax at three-fourths the new U.S. rate (21 percent, with a new U.S. rate of 28 percent); another option is a global minimum tax at the U.S. rate. Either reform should remove the tax exemption for the first 10 percent return on foreign assets, since that provision directly encourages the offshoring of U.S. assets.

A per country minimum tax would remove a perverse feature of the GILTI that leads some multinationals to prefer high-tax foreign country income to U.S. income. In addition, no companies would be unaffected by the minimum tax, since there would be no ability to shelter haven income from the GILTI tax with tax credits from payments to higher-tax countries. Since *all* haven income would trigger immediate U.S. tax, there would be a more-serious deterrent to profit shifting. The rate is set at three-fourths of the domestic rate. A lower rate than the domestic rate is suggested as a compromise, in order to reduce concerns about competitiveness.

One concern with a per country tax is that it would unduly increase administrative burdens due to the complexity of compliance and administration. Although such concerns are overstated, an alternative is to simply leave the tax as a global minimum but raise the rate to the U.S. rate. A harmonization of the foreign rate with the U.S. rate would remove the tax advantage associated with foreign income relative to domestic income.

This approach would also raise substantial U.S. revenue, and would also help protect foreign non-haven tax bases.[23]

The FDII is unlikely to be effective in its stated aims, as discussed above, and also encourages the offshoring of physical assets, so it should be repealed. Together with the proposed changes in the GILTI, repeal of FDII will eliminate the incentive to offshore physical assets that was introduced by the TCJA.

However, either type of reform to the minimum tax would increase the incentive for corporate inversions, since U.S. tax residence triggers the minimum tax.[24] Thus, a stronger minimum tax should be accompanied by stronger anti-inversion measures. Anti-inversion measures could include a management and control test, an exit tax, and/or a higher ownership threshold for determining foreign ownership.[25] In addition, the BEAT should be retained, and perhaps improved, to further reduce such incentives.[26]

While it will be politically difficult to implement the reforms suggested here, it is important to raise revenue through the corporate tax. The TCJA, unlike prior corporate tax reform proposals from both Democrats and Republicans, was not revenue neutral, and instead lavished net corporate tax cuts on companies without any evidence that these tax cuts were wise policy.[27] Although the administration made rosy predictions that the corporate tax cuts would ultimately favor workers, raising workers' wages by thousands of dollars, both prior experience and the early evidence under the TCJA clearly indicate either very modest or nonexistent benefits for workers.[28]

Indeed, the TCJA has many serious flaws that are detailed elsewhere.[29] The reforms suggested here would respond to several of these flaws. First, they would raise revenue, allowing room in the legislation to undo the regressive effects of other provisions in the law.[30] Second, the reforms would seriously address profit shifting and corporate tax base erosion, making a far larger impact on that problem. Third, the reforms would eliminate the bias in current tax law toward offshoring real economic activity.

On net, these tax changes will also make the tax system more progressive, countering the bias in our tax system in favor of capital (and against labor) and asking more from those at the top of the income distribution. These changes, while not revolutionary, will still require enormous political will. Clausing (2019a) discusses a more-systematic tax reform package that could help build political support for such changes, by pairing the net revenue

increases discussed here with net tax cuts for lower- and middle-income Americans.

FORMULARY APPORTIONMENT

This chapter opened with a discussion of the seemingly inevitable trade-off between a robust corporate tax and the concern that the U.S. tax system not disadvantage either U.S. production or U.S. headquarters. The tax policy proposals of the prior section accept this trade-off but place greater emphasis on corporate tax base protection than the competitiveness of the United States as a headquarters location, which can be mitigated with anti-inversion legislation.

In some respects, the policies of the prior section actually increase the attractiveness of the United States as a production location relative to the TCJA by reducing the tilt of the playing field toward foreign income and operations. Offshoring incentives under the TCJA are removed, and foreign locations are less tax advantaged due to the more-robust minimum tax. Still, companies will argue that the higher tax burdens envisaged in this proposal will lead to less U.S. economic activity and an erosion of the United States' competitive position.

In this author's view, such arguments are exaggerated: Prior to the TCJA there was no evidence of a competitiveness problem, whereas corporate tax base erosion was an increasingly pressing concern. The TCJA furthered this imbalance, giving away $650 billion in net corporate tax cuts without substantially improving the competitive position of the U.S. economy.

Yet, in the end, the merits of the changes suggested above illustrate a fundamental corporate tax policy trade-off between corporate tax base protection and the desires of multinational companies for a competitive tax environment. Observers will differ in their opinion of how to weigh these two key objectives.

In contrast, this section offers a reform that can achieve both objectives at once: the adoption of sales-based formulary apportionment for the taxation of multinational company corporate income.

Under the proposed system of formulary apportionment:

- A multinational company would be taxed based on its global income.
- Some fraction of that company's global income would be assigned to the United States based on a formula. I recommend a sales-only formula: The U.S. tax base would be the product of a company's worldwide

income and the share of its worldwide sales that were destined for U.S. customers.[31]

- Any company with at least $1 million of sales in the United States (indexed for inflation) would pay tax to the U.S. government.[32]
- The tax base would be defined based on the U.S. definition of taxable income. This retains compatibility with any possible U.S. tax base reform, including the reforms suggested by Furman (2020) in this volume.[33]
- Formulary apportionment would be applied to affiliated companies when there is common control of the companies.[34]
- Anti-abuse rules would be included.

More than a decade ago, in an earlier Hamilton Project paper, I suggested a similar reform with coauthor Reuven Avi-Yonah (Clausing and Avi-Yonah 2007). This discussion updates that earlier paper in light of several important changes in the international tax environment. First, corporate tax base erosion problems have dramatically increased in recent years, leading to serious international efforts aimed at stemming the problem. In addition to the OECD/G20 efforts, many countries have pursued their own unilateral policy responses; India has even considered a proposal for unilateral adoption of formulary apportionment.[35] At the same time, policymakers in the United States and elsewhere continue to succumb to tax competition pressures, lowering tax rates and providing loopholes in an attempt to attract mobile multinational activity.

Second, comprehensive new proposals have been offered, including the DBCFT and the residual profit allocation by income proposal (RPA-I); these can be contrasted with the present proposal. Third, we have a greater understanding of the functioning of formulary apportionment in subnational contexts. And, finally, work has continued on the implementation issues surrounding formulary apportionment.

This section will make an argument for a medium-term adoption of sales-based formulary apportionment, after sufficient time has been allowed to handle technical implementation issues and to work on building international consensus. Consensus need not be complete, but ideally some other major countries would choose to adopt the policy along with the United States. Once formulary apportionment has been implemented by some major countries, non-adopters will have a strong incentive to join. I next discuss how such a system would work, explain its key advantages, discuss possible drawbacks and how they might be addressed, compare the

proposal to others that have been offered, and suggest incremental steps forward.

How Does Formulary Apportionment Work?

Under the present system of separate accounting, companies account for income and expenses in each country in which they operate independently. Under formulary apportionment, a multinational company would instead be taxed based on its global income, and some fraction of its global income would be assigned to the United States based on a formula.[36] (See box 2 for a discussion of how formulary apportionment works in U.S. states.)

With a sales-based formula, any company with a threshold amount of sales in the United States ($1 million, indexed for inflation), would pay tax to the U.S. government based on a tax base that was the multiple of its worldwide

BOX 2.

Formulary Apportionment in the States

U.S. states have long used formulary apportionment to tax the companies that have nexus in their states. In large part, this choice reflects the near impossibility of asking companies to separately account for income and expenses in each state where they operate, given the substantial economic integration across U.S. states. A similar argument applies to the multinational operations of intensely global companies; it is not clear where profit is truly *earned* for a multinational company, and these ambiguities generate ample room for tax avoidance.

While some U.S. states use multifactor formulas (including assets, payroll, and sales), over time, more and more U.S. states have increased the sales weight in their formulas in response to concerns that states would lose employment or assets to states with lower tax burdens on those factors. As it turns out, these concerns were typically unfounded: States that increased sales weights did not gain employment or assets at other states' expense, as discussed in Clausing (2016). But, state governments—often lobbied by local companies with large local production—were nonetheless obliging, and state tax competition took the form of increasing formula weights on sales or adopting sales-only formulas.

> In 1986, 80 percent of the 46 jurisdictions (45 states and the District of Columbia) that taxed corporate income used an equal three-factor formula, 20 percent had higher weights on sales, and no states used a single-factor sales formula. Today, only 11 percent of jurisdictions use an equal three-factor formula, 35 percent have a higher (but not sole) weight on sales, and 54 percent have a single-factor sales formula. This steady increase of the sales weight demonstrates the strength of the tax competition dynamic with respect to formula factor choices.

income and the share of its worldwide sales that were destined for U.S. customers. Thus, if a company earned $10 billion worldwide, and half of the company's sales were destined for U.S. consumers, then $5 billion would be taxable in the United States.

Notice that this system transcends the trade-offs that were discussed above. Even if the United States taxed multinational companies at a high statutory rate (say, the 35 percent rate in effect before 2018), companies would still pay tax in the United States *as long as they had U.S. customers*, regardless of their headquarter locations, their production locations, their financial structures, or any other decision they might make. There is simply no way to avoid the tax other than to arrange to have fewer customers in the United States, or more customers abroad, or lower global profit. (Below I discuss how related gaming could be minimized.)

One advantage of beginning with a sales-only formula—as opposed to one that includes assets and/or payroll—is that it resists the political temptation to adjust formula weights in an attempt to attract mobile jobs or investments. If adoption is not multilateral, that would be a particularly important consideration. However, there are also disadvantages to a single-sales formula. First, there are higher stakes associated with the sales factor, so anti-avoidance efforts must be directed at artificial attempts to increase the sales based in low-tax countries; these are discussed further below. Second, there may be fairness or revenue-sharing issues associated with assigning the tax revenue to the market jurisdiction rather than to the production jurisdiction.

To some extent, such concerns might be less important than they seem. If a country consumes about as much as it produces from the corporate sector, then taxing the supply side or the demand side of the market should

provide equal revenues. However, for countries that host highly profitable production locations, but sell throughout the world, they may fear that such a system would put them at a disadvantage. There are also concerns that less-developed countries will be disadvantaged if their production in multinational companies is greater than their consumption of those companies' products. However, since poorer countries have greater losses due to profit shifting (as a share of GDP) than do rich countries, they stand to particularly benefit from international tax reforms that stem profit shifting.[37] In addition, natural resource-intensive industries can be taxed through a separate system in order for local economies to tax location-specific rents from resources like oil and precious metals.

Still, and especially in the presence of an international agreement, other formulas might usefully be considered, such as a formula that would equally weigh both the market of the jurisdiction (sales) and the production activity of the jurisdiction (via payroll and/or employee headcount). It is more difficult to measure and value assets, so in this case I propose that the production side of the market be captured by employment, where we could use either headcount or payroll, or a one-quarter weight on each.

What Are the Advantages of Formulary Apportionment?

1. As already described, the most important advantage of well-designed sales-based formulary apportionment is that it would vastly lessen both tax competition and profit-shifting pressures. There is a long and vast literature in public finance that emphasizes that *real* decisions (e.g., decisions about which consumer markets to serve) are far less tax sensitive than *financial* decisions (e.g., decisions about where to book profits), overviewed in Auerbach and Slemrod (1997), Saez, Slemrod, and Giertz (2012), and Slemrod and Bakija (2008). That difference in tax sensitivity is at the heart of the argument for formulary apportionment. While formula factors like sales will be discouraged by formulary apportionment, it is far more difficult to rearrange these factors than paper profits.

   Furthermore, actual experience under formulary apportionment confirms this lower elasticity of formula factors. In the case of the United States, careful analysis overviewed in Clausing (2016) shows that formula factors do not respond to tax burden differences across states. In other words, employment and assets do not shift toward lower-tax states. While U.S. state tax rates are lower than national tax rates, suggesting this comparison should be viewed with caution, one might also expect tax bases to be more mobile across state boundaries

than across national borders, due to the absence of the many frictions that are associated with international borders. (These frictions include language barriers, exchange rate differences, regulatory differences, cultural factors, larger average distances, and myriad other factors.) Drawing from the Canadian experience, Mintz and Smart (2004) also provide compelling evidence of the reduced tax sensitivity of taxable income under formulary apportionment.

2. In contrast to separate accounting, formulary apportionment is far more suited to both the global nature of multinational companies and the intangible nature of modern economic value. Separate accounting maintains an odd fiction: Affiliated companies should transact with each other as they would with companies that were unrelated, the arm's-length standard. However, the very nature of multinational companies implies that there are higher profits associated with the common ownership of affiliated entities, so that they will together earn more than separate companies would if they were operating at arm's length. Thus, where does this additional profit belong? This ambiguity is more than just a philosophical question: It provides ample opportunities for tax avoidance, as companies arrange matters so that the true source of such value is often an island with a zero-tax rate.

   Similarly, the source of value itself is often ripe for disagreement. In a simple factory with capital and labor, value creation may be easy to spot. But for companies that are producing goods or services that are intensive in intellectual property, or where the customers themselves provide data that adds value, ambiguities in the source of value create ample tax avoidance opportunities. While a formulaic approach might reasonably be viewed as only rough justice, it will prove more accurate than letting accountants and lawyers arrange matters such that the lion's share of foreign profits ends up in tax havens.

3. While there will be many implementation issues to be worked out with formulary apportionment, it has the potential to be far simpler than the present system. The arm's-length standard generates tremendous complexity, large compliance costs, and almost impossible administrative enforcement burdens. The OECD/G20 process that aimed to reduce corporate tax base erosion and profit shifting (BEPS) generated close to 2,000 pages of suggested guidelines. Yet most observers expect profit shifting to continue nearly unabated, and even the most sophisticated tax officials struggle with the enforcement and implementation of BEPS guidelines.

Countries have turned to their own unilateral measures, but that hardly simplifies matters. In the case of the United States, interactions between the GILTI, the BEAT, the FDII, and existing rules only add complexity to an already byzantine system. Abroad, there are myriad efforts that also complicate matters, including the United Kingdom's diverted profits tax, Australia's anti-avoidance law, India's equalization levy, and the recent digital services taxes of Italy and France, as well as others that are still in the proposal stage.

4. Adoption of a sales-based formulary apportionment system, even without complete international consensus, holds out the prospect of becoming a stable regime for the international taxation of multinational companies, by changing the dynamic of international tax competition. While unilateral adoption by a large country can also generate this outcome, it would be ideal if several large countries were to forward together. Imagine, for example, a coalition of the European Union (EU), India, and the United States. Once these countries adopt formulary apportionment, there will be an enormous incentive for other countries to follow. Not only would it ease the compliance costs of their home companies, but also, absent adoption, non-adopting countries will lose tax base to adopters. Shifting profit to the EU, India, or the United States (in this example) would not increase tax liabilities in such jurisdictions (since liabilities are based on formulary apportionment of global income, and paper profit shifting does not affect formula factors), but it would reduce profits at home or in third countries. As far as non-adopting countries are concerned, it would be as if the adopting areas were a giant Bermuda; profit shifting to formulary countries will be an attractive strategy for companies in non-adopting countries.[38]

   Many governments share the goal of building a stable international regime that minimizes tax base erosion. There is now an international recognition that tax base erosion is a serious problem: the OECD/G20 efforts have recognized the importance of this problem, and many countries have summoned serious political will to address these issues unilaterally.

What Are Downsides of Formulary Apportionment and How Could They be Combatted?

1. The first downside is the potential for double taxation or double nontaxation. This problem is mitigated as more countries adopt, and there would be a strong incentive to adopt. However, in the interim, there would likely be many instances of both double taxation and

nontaxation. Of course, at present the problem of profit shifting to tax havens makes double nontaxation a clear danger of the arm's-length standard. Under-taxation of corporate income will persist as long as large amounts of profit shifting are tolerated.

2. Formulary apportionment may encourage the manipulation of formula factors. In the case of asset or employment weights in the formula, companies may respond by moving assets or employment toward locations that are more lightly taxed. In some respects, this may seem worse than paper profit shifting, since jurisdictions lose not just tax revenue, but also economic activity. On the other hand, as noted above, real economic activity is far less tax sensitive than financial accounting, which indeed is a major advantage of formulary apportionment.[39] Moreover, a sales factor is even more difficult for companies to manipulate, given that customers are virtually immobile.

   However, companies could seek to game the sales-based factor in a number of ways. One option is to sell to a low-margin distributor in a low-tax country; in that case, the low-margin distributor would then sell into the higher-tax market. In this event, the firm would make its profit on sales to a firm in a low-tax country, owing no U.S. tax, and the distributor would make sales in the United States, but would have very little profit. However, even if companies were willing to cede control of the distribution of their products, there are possible legal solutions to this problem, including setting rules that look through the distributer to attribute the sales to the destination market. Specific rules of this nature are proposed in Avi-Yonah and Clausing (2019).[40]

   Others have argued that companies might merge in order to minimize their tax burdens. For example, the company Apple could buy a grocery store chain on an island haven. While such responses are theoretically possible, and while tax-motivated mergers are a real concern, this is another case where real corporate behavior is far less sensitive to tax incentives than are financial decisions.[41]

3. Finally, there are many important accounting and technical issues that would need to be addressed. In Avi-Yonah and Clausing (2019), we suggest some simple solutions to common problems, but it will take time to work out additional technical issues. Regarding the application of formulary apportionment, it could be based on a simple threshold of market presences (such as $1 million in sales), replacing the need for a permanent establishment threshold. Instead of defining the nature of unitary enterprises, formulary apportionment could be based solely on common control. The definition of the destination of sales could be

built around the experience with the value-added tax (VAT). And, more generally, the experience of other jurisdictions can provide substantial expertise, including the experience of subnational jurisdictions such as Canadian provinces and U.S. states.

4. As with the incremental proposals of the previous section, many multinational companies will pay much more in tax under formulary apportionment than they would under current law (as of 2019). Due to the large corporate tax cuts of the TCJA, very few companies will have lower tax liabilities under the new system, and therefore companies are likely to object to these changes. Since formulary apportionment effectively shuts down profit shifting and tax competition pressures, political opposition is likely to be particularly vociferous for those companies that have shifted large amounts of profit toward havens and achieved very low effective tax rates on their foreign income.[42]

5. Some observers have expressed concerns about interactions with tax treaties and World Trade Organization (WTO) rules. These concerns have been discussed extensively elsewhere, but they do not present insurmountable obstacles.[43]

How Does This Approach Compare to Other Reform Suggestions?

In recent years there has been increased public scrutiny regarding the large and growing problem of international profit shifting, as sustained attention by journalists focused attention on this issue. Public and NGO pressure culminated in a multiyear effort by the OECD/G20 to address the problem, resulting in the OECD/G20 Inclusive Framework on BEPS. This section will review these efforts and will also discuss three additional academic proposals: the DBCFT, the RPA-I, and a proposal for a coordinated minimum tax suggested by Saez and Zucman (2019).

1. The OECD/G20 BEPS framework is an ambitious attempt to tackle corporate tax BEPS problems. It involves 15 action items that include taxation of the digital economy, hybrid mismatch problems (blamed for the large problem of stateless income discussed by Kleinbard 2011), and country-by-country reporting. The BEPS process was an enormous effort and culminated in close to 2,000 pages of reports and guidelines as well as a multilateral convention to implement tax treaty–related measures to prevent BEPS and was signed by 89 countries between July 2017 and August 2019 (with the notable exception of the United States).

   This sort of cooperation aimed at combatting international tax avoidance is both welcome and laudable and will have a noticeable

impact in several areas. Country-by-country reporting should improve tax transparency and help tax authorities assess possible enforcement issues surrounding profit shifting. While this action item is focused solely on large companies, those are the entities that undertake the vast majority of profit-shifting activity, and country-by-country reporting should help tax authorities gather helpful information.[44] The BEPS process has also helped countries combat hybrid mismatches that create income that is truly stateless and therefore taxed nowhere.

Several areas have been difficult to tackle, and the OECD is presently wrestling with issues surrounding digital taxation and working on a variety of paths forward. In February 2019 the OECD suggested an approach that would simultaneously consider issues of profit allocation (addressing which jurisdictions have taxing rights) and would ensure that multinational companies pay some minimum amount of tax (OECD 2019a).

That work is still continuing, but in October 2019 the OECD proposed reforms that would substantially increase the use of formulary apportionment for digital or consumer-facing companies (OECD 2019b). The proposal establishes a sales threshold (to be determined) as sufficient for taxing such firms, rather than requiring a physical presence.

The proposal would distinguish between routine profits and residual profits; some fraction of residual profits would be assigned to market countries based on a sales-based formula. Profit would be based on consolidated financial accounts. The level of routine profit might be assessed on a business line basis; this is yet to be determined. The proposal includes dispute settlement provisions.

OECD's approach is a hybrid in several respects, which adds substantial complexity. Some companies are included, whereas others (including those in extractive industries) are explicitly excluded. Routine income is taxed under the conventional arm's-length standard that treats affiliated companies as if they were separate entities, whereas residual profits (above some threshold) are taxed based on formulary apportionment. Some (to be determined) fraction of the residual income is assigned to the market jurisdiction, and the remaining fraction is attributed to other factors (to be determined). These fractions may even vary by industry.

These particular policy suggestions are somewhat revolutionary for the OECD, which has traditionally been unwelcoming to the idea of

formulary apportionment. More typically, the approach of the OECD/G20 framework has been one of incremental improvement rather than fundamental change. The arm's-length standard, long sacrosanct at the OECD, remains at the center of most guidelines and recommendations, and it remains to be seen how consensus will evolve regarding these formulary methods.

In general, the OECD/G20 process provides hope of further international consensus building, but the efforts so far will not be enough to tackle the substantial problems surrounding tax competition. Although country-by-country reporting is underway, it has yet to pay large dividends. At present, the scope and magnitude of international profit shifting show no downward trends.

Unfortunately, many incremental steps to shut down international tax loopholes can become akin to the arcade game whack-a-mole. When one arrangement is shut down (e.g., the infamous double Irish with a Dutch sandwich technique of layering affiliates to create stateless income), another arrangement pops up in its place, and the large share of income in tax havens continues unabated, as seen in figure 2. That said, progress should be judged relative to the counterfactual, and the problem of international profit shifting would be even worse without the OECD/G20 framework. Still, this process remains a far cry from an end to profit shifting.

2. The DBCFT is a business tax that would be levied based on company cash flow, with no deductions for interest or imported inputs, but with deductions for labor costs and immediate expensing of investments. This tax proposal has many attractive elements that make it a favorite of some economists. It removes the debt-equity distinction in corporate finance, reducing the distortions associated with excessive leverage in the corporate system. It is both a true tax on rents and difficult to avoid, so it could be levied at higher rates without worries of either distortion or profit shifting. As is often pointed out, the DBCFT is equivalent to a VAT plus a wage deduction. While that sounds a lot like a VAT, it is actually quite different: The absence of tax on wages makes the tax a true tax on rents. Therefore, the DBCFT is a far more progressive way to raise revenue than a VAT.

   The DBCFT was vaulted into the spotlight when it was considered as part of a Republican tax reform plan in early 2017.[45] During the debates surrounding the DBCFT, several weaknesses came to light. Some were idiosyncratic to the particular context of the Republican plan, which lost a lot of revenue in a highly regressive fashion. Such problems could

be fixed in future plans by choosing higher rates and packaging the DBCFT with different associated reforms.

However, other problems were inherent to a DBCFT. The largest problem by far was the need for a border adjustment tax, since taxing the full value of goods and services requires not allowing a deduction for imports.[46] This raises similar implementation issues as with a VAT. However, while a VAT is consistent with WTO rules, the DBCFT is not (in the view of most legal experts), due to the wage deduction component. The wage deduction component is, however, a crucial part of the DBCFT, and one that appears to give domestic production an advantage relative to imported goods. Given the scale of the DBCFT, it would likely entail large objections by trading partners, and risk undermining the world trading system. Moreover, this proposal came forward at a time (the early Trump administration) when the world trading system already faced serious political challenges.

Still, economic theory predicts that exchange rate adjustment would fully offset the apparent domestic advantage provided by a DBCFT. If exchange rate adjustments occur as predicted, that tax need not have real consequences on competitiveness, making the WTO issue one of legal concern but not one of economic substance. Still, a second problem arises if exchange rates do not fully adjust. In that event, since imports were taxed but exports were exempt, the DBCFT would harm U.S. importers and benefit U.S. exporters, generating large sector-specific shocks. Many economists were content to argue why, *in theory*, the exchange rate should perfectly adjust, and they were exactly right. That said, *in practice* there are many possible impediments inhibiting smooth exchange rate adjustment, including the importance of the U.S. dollar in trade invoicing, a large number of countries that peg their exchange rate, and the more-general problem of the utter unpredictability of exchange rate movements.[47] The major countries that have adopted VATs under floating exchange rate systems have not seen their exchange rates adjust as predicted. Thus, while it is tempting to dismiss the concerns of importers like Walmart and Target as the worries of those who do not understand economic theory, there was actually reason to suspect they understood their interests well, and the DBCFT risked subjecting them to large economic shocks. Regardless, these industries mobilized against the border adjustment tax, effectively killing it.[48]

Unlike the DBCFT, formulary apportionment does not require either a border tax or exchange rate adjustment. Under the DBCFT, all imports

are taxed at the border since there is no deduction allowed for imports. This is true regardless of whether the importing company earns any economic profits. Under sales-based formulary apportionment, only companies earning economic profits will pay a tax in the United States that is based on the destination of customers. Therefore, there are far fewer worries regarding either incomplete exchange rate adjustment or the disruption caused by such a substantial strengthening of the U.S. dollar.

Beyond these issues, it was clear that the groundwork had not been laid for the DBCFT to be quickly implemented. There were important questions regarding how to handle firms with losses, the potential for tax driven mergers, difficulties handling financial flows, nontrivial effects on U.S. state revenues, and other serious transition issues.

Finally, like sales-based formulary apportionment, DBCFT risks harming non-adopting countries. Since profit shifting to adopting countries would not affect tax liabilities in DBCFT countries (which are based on the locations of customers), but would reduce tax liabilities at home, other countries' profit-shifting problems could be expected to worsen. In the short run this would lead countries to oppose U.S. adoption (and strengthen those countries' resolve in WTO challenges). Still, if the United States went ahead, other countries would be left with a strong incentive to adopt DBCFT themselves. But, in the meantime, DBCFT would create problems of double-taxation and nontaxation, since tax base systems would be based on different principles in different countries.[49]

Thus, similar to formulary apportionment, it would be ideal if DBCFT were adopted multilaterally. Moreover, there are two additional reasons for multilateral adoption. First, the more countries adopt simultaneously, the less exchange rates have to adjust, and the lower the risk that mis-aligned currencies lead to large sector-specific shocks or other difficult adjustments. Second, the more countries adopt, the more likely that WTO issues could be handled harmoniously, rather than risking new reasons for trade wars.

3. A recent proposal by a group of researchers, Devereux et al. (2019), suggests a compromise between formulary apportionment and the arm's-length standard, a residual profit allocation by income method.

   This RPA-I proposal builds on a residual profit allocation proposal from Avi-Yonah, Clausing, and Durst (2009). Under our proposal, a routine profit would be assigned to each country based on an estimated market

return on the tax-deductible expenses incurred by the multinational group in that country, and then any additional residual income would be divided among countries based on the group's relative sales in each country.

The RPA-I proposal improves on our proposal in detail, addressing several important issues such as interest allocation and losses. However, it differs from Avi-Yonah, Clausing, and Durst (2009) in two key respects. First, instead of adopting a benchmark for routine profits, RPA-I separates routine from residual profit by using the arm's-length standard, relying on comparable parties to calculate case-specific routine profits. This has the advantage of familiarity to practitioners, but it also has the disadvantage of retaining the vast complexity and administrative costs that are endemic to an arm's-length system.

Second, the RPA-I proposal allocates residual profits based on profit measurements that consider both sales and the allocable expenses attributed to those sales, as well as the routine profit. In contrast, our residual profit method simply relied on the destination of sales. While those two outcomes may often be similar, the RPA-I outcome is better suited to situations where profit/cost ratios vary substantially across countries. However, the choice to allocate residual profits in this manner raises complexity a great deal, and also provides avoidance opportunities.

Overall, the RPA-I proposal is a compromise. It uses both arm's-length and formulary methods to determine the tax base, and it allocates parts of the tax base to both the supply and demand sides of the market. The downside of the proposal is that it retains both the complexity of the arm's-length standard, and the tax avoidance opportunities lying therein, albeit in somewhat muted form.

4. In a recent book Saez and Zucman (2019) suggest that countries collaborate in adopting a minimum tax on corporate income. Similar elements have been included in proposals by Avi-Yonah (2015) and others, but the Saez and Zucman approach suggests combining a coordinated minimum tax with a formulary approach to address non-adopting countries.

   This proposal is compatible with the immediate reforms suggested earlier in this chapter. In addition to the United States adopting a per country minimum tax, other countries would also adopt per country minimum taxes; Saez and Zucman (2019) suggest a minimum tax rate of 25 percent. Coordination would be encouraged through international

tax agreements like the OECD/G20 process.[50] Coordination would also be incentivized through the use of other international policy levers such as trade agreements and economic sanctions against tax havens.

Under such a system, companies headquartered in non-adopting countries may have a tax advantage relative to those in adopting countries. And inversions (or new incorporations in low-tax countries) may be tax-encouraged, although Saez and Zucman (2019) note that corporate inversions are small in recent years, and inversions can be effectively limited by regulations.

Still, to support the coordinated minimum tax, Saez and Zucman (2019) suggest a formulary system for taxing the tax deficit of multinational companies that are resident in non-adopting countries. Country-by-country reporting data could be used to calculate tax deficits—the tax that would have been paid in the event that the resident country had enacted a 25 percent minimum tax. A portion of that tax deficit would then be collected by adopting countries using sales-based formulary apportionment.

These reforms would substantially limit international tax competition and profit-shifting pressures. Still, this approach retains the complexity of current tax rules for taxing multinational companies while adding the additional complexity of adopting a formulary system for non-minimum-tax countries. It also puts pressure on the definition of residence for tax purposes, although there are useful legal and regulatory solutions to that problem.[51]

Questions and Concerns

1. What sorts of tax avoidance strategies would be available under sales-only formulary apportionment and how could those strategies be deterred?

One important concern is that a multinational could sell to a low-margin distributor in a low-tax country and thereby lower the rate it faces. The low-margin distributor would then sell into the higher-tax market. It would face a higher tax rate, but on a much smaller total profit.

Avi-Yonah and Clausing (2019) describe one response to this strategy. The rule we suggest is,

> “Goods, services or intangibles which are sold or licensed to an unrelated person will be presumed for purposes of this section to have been sold or licensed for use, consumption, or disposition in the country of destination of the property sold or services

> or intangibles provided; for such purpose, the occurrence in a country of a temporary interruption in shipment of goods shall not constitute such country the country of destination. However, if at the time of a sale of personal property or services or license of intangibles to an unrelated person the enterprise knew, or should have known from the facts and circumstances surrounding the transaction, that the property, services or intangibles probably would not be used, consumed, or disposed of in the country of destination, the enterprise must determine the country of ultimate use, consumption, or disposition of the property, services or intangibles or the property, services or intangibles will be presumed to have been used, consumed, or disposed of in the United States" (849).

We have already discussed in the previous section other downsides of formulary apportionment, and possible responses.

2. Are there incremental steps toward formulary apportionment that policymakers could take?

In moving toward a formulary apportionment system, there are incremental approaches that we could take to increase reliance on easily calculated benchmarks instead of the judgments of tax-minimizing accountants. For example, profit-split methods have been long accepted by the OECD. While these apply formulary approaches at a transaction level, there are useful ways to extend similar methods to a broader arena, some of which have been explored in the context of the BEPS framework.

Building on these methods further may naturally lead us to favor a residual profit-split proposal, such as those suggested by Avi-Yonah, Clausing, and Durst (2009) or Devereux et al. (2019). As discussed above, the latter proposal uses both formulary and arm's-length methods, whereas the former proposal assigns a fixed return on expenses, and then assigns the residual income based on formula. Both proposals lie on a continuum between the arm's-length standard and a formulary system, although the 2009 proposal is closer than the 2019 proposal to the formulary end of the continuum.

Another possibility is to use a formulary system as part of a minimum tax regime, as suggested in a report from the Independent Commission for the Reform of International Corporate Taxation (ICRICT; 2018). Countries could apply a formula to multinational companies' global income and compute the minimum tax payable at some fraction of the regular corporate tax rate. A formulary minimum tax would retain the complexity

of the present system, while layering additional complexity on top, but it might be a suitable rough justice solution for those tax authorities that lack the administrative capability to collect corporate tax from multinational companies under the arm's-length standard.

3. Do sales-based formulas disadvantage the United States, since the United States is home to many profitable multinational companies?

If a country consumes about as much as it produces from the corporate sector, then taxing the supply side or the demand side of the market should provide equal revenues. However, since the United States hosts the headquarters of many highly profitable multinational companies that sell their goods and services throughout the world, there may be fears that such a system would disadvantage the United States.

Still, under the arm's-length system of taxation, U.S. corporate tax revenues have been far lower (as a share of GDP) than those of typical peer nations, due in part to the aggressive profit shifting of U.S. multinational companies. Recent estimates in Clausing (2019b) suggest that the U.S. government loses more than $100 billion each year due to the profit shifting of multinational companies. Thus, the U.S. government has a lot to gain from proposals that stem profit shifting.

Also, it is helpful to remember that U.S. consumers buy many imports. Profitable foreign-headquartered companies will also pay U.S. corporate tax based on sales that are destined for U.S. consumers, assuming they reach a modest $1 million sales threshold.

Conclusion

There is more than one path forward in reforming U.S. international taxation. In the short run, incremental steps are likely to be more practical than systemic reforms. I suggest a reform that raises the corporate tax rate to 28 percent, strengthens the minimum tax, and repeals the FDII deduction. Together, these changes provide substantial gains relative to current law: raising corporate tax revenues in a progressive fashion, curtailing the offshoring incentives caused by the TCJA, and countering profit shifting to tax havens.

In the medium run, a sales-based formulary apportionment system can better counter the pressures of international tax competition and profit shifting. Under such a system, there is no longer a trade-off between competitiveness and corporate tax base protection. Any company serving the U.S. market will pay income tax in the United States based on its global

income and the fraction of its sales that are destined for U.S. customers. Properly implemented, such a system is a major improvement relative to the arm's-length standard. A formulary system better suits the intangible nature of much modern economic value and the global integration of much modern business activity.

As discussed above, there is still important work that needs to be done on the details of implementing formulary apportionment, including both attention to technical and legal issues as well as, ideally, international consensus building with other countries. While such a major reform will benefit from allowing time for careful implementation and consensus building, policymakers can build on prior experience with formulary systems as well as the momentum created by the OECD/G20 BEPS process. In many countries, there is serious recognition of these policy problems as well as substantial political will aimed at solutions. Moving toward a system of formulary apportionment can provide the basis for a stable and sustainable international tax regime.

Regardless of the path chosen, protecting the corporate tax is especially important today. The corporate tax remains the only tool for taxing about 70 percent of U.S. equity income, which goes untaxed by the U.S. government at the individual level. And the individual taxation of capital income, when it exists, also creates important policy challenges.[52] After four decades of increasing income inequality, disappointing wage gains, a shrinking labor share of income, and increasing market power, it is more important than ever to have a tax system that effectively taxes capital.[53] Importantly, much capital income is not the normal return to capital, but rather some excess return, or rent.

In this context, strengthening corporate taxation is especially important. Formulary apportionment remains a very promising medium-term proposal, but there are also many useful steps that can be taken immediately to improve corporate taxation. All that is needed is political will.

Appendix: The Effects of the 2017 Tax Cuts and Jobs Act

THE EFFECTS OF THE NEW TAX LAW ON COMPETITIVENESS AND OFFSHORING

It is clear that the TCJA provided large corporate tax breaks, estimated by JCT at about $650 billion over 10 years. The more than $1.3 trillion in revenue cost from the statutory rate cut was offset in part by base expansion, due to

the repeal of the domestic production activities deduction, less-favorable treatment of net operating losses, amortization of research expenditures beginning in 2023, and the somewhat-less-favorable treatment of debt-financed investments.

The international provisions are more neutral in their revenue effects. While the deemed repatriation tax revenue comes in over the 10-year revenue window, it is a one-time provision, and it represents a tax cut relative to prior law. Although companies were sometimes disappointed that this repatriation tax cut was not even more generous, there is certainly no efficiency rationale for lighter tax treatment, since it is obviously difficult to encourage earnings that have already been earned. This provision is unlikely to have important incentive effects going forward.

As for the other international provisions, some raise revenue (the GILTI and the BEAT), whereas others lose revenue (territoriality and the FDII). On net, the international provision of the tax law (excluding repatriation) have a slight negative revenue consequence over 10 years (a loss of $14 billion).[54] And, more-recent estimates by Horst (2019) suggest a greater negative loss from these provisions than originally estimated by the TCJA.[55]

Focusing on revenue alone, it seems clear that companies should be more competitive post-TCJA than pre-TCJA; the corporate community as a whole received very large tax cuts, netting more than $650 billion, lowering the tax burdens associated with U.S. corporate income.[56] Still, the impact on competitiveness for multinational companies depends on individual company circumstances.

For example, consider a highly profitable multinational company that booked most of its income in tax havens prior to the TCJA. While the company could not access these funds without fear of a repatriation tax, it could borrow against them (and frequently did), creating the equivalent of a tax-free repatriation, as explained above. Thus, the tax treatment of foreign income was arguably already quite competitive. Under the new law, due the GILTI and the BEAT, such a company may find that its overall tax burden on foreign income has increased substantially, actually lowering its (tax) competitiveness relative to prior law.

Arguably, the new territorial tax system is more worldwide than the old one, since the older system raised very little revenue taxing foreign income (because U.S. tax due was either indefinitely deferred, offset with tax credits, or given holiday rates), whereas the new system subjects many multinational companies to immediate taxation on lightly taxed foreign income through the GILTI; also, some companies incur BEAT tax liability.

Because of these provisions, many observers argue that the new system could be less tax-competitive than the old one.

Of course, for purely domestic companies, corporate tax burdens have undoubtedly gone down, but since competitiveness concerns were typically focused on global companies facing foreign competitors, domestic companies were not generally the target.

Beyond tax competitiveness, there are also some troubling new incentives in the TCJA that will increase the offshoring of investment and jobs. Under the GILTI, the first 10 percent return on foreign assets is exempt from the minimum tax. This gives companies an incentive to increase *physical* investments of plant and equipment in low-tax countries in order to reduce the bite of the GILTI tax.

In addition, the FDII *also* encourages the offshoring of real investment. The FDII tax preference for export income applies only for income above a baseline return on assets. Thus, the more U.S. assets, the lower the tax benefit from FDII. For example, imagine moving an asset from the United States to a tax haven; that will lower your assets in the United States, increasing the return on the remaining assets and therefore the FDII deduction. In addition, now that the asset is abroad, it will result in more tax-free GILTI income, since the first 10 percent return on foreign assets is tax free. Together, these two provisions reward the offshoring of U.S. assets.

In general, if a company is indifferent between locating investments in the United States or in a low-tax country abroad, a comparison of the tax treatment under GILTI and FDII will bias the decision in favor of foreign investment. Although the FDII is meant to encourage U.S. activity, it may be perceived as a less reliable tax benefit due to uncertainties regarding its WTO compatibility that may subject it to legal challenges. Even beyond that concern, however, it is typically better for a company to serve the U.S. market from a tax haven, since both foreign and U.S. income receive a tax preference, whereas FDII rewards only U.S. export income. In addition, although increased physical assets increase the amount of tax-free income under GILTI, they reduce the tax benefits of FDII.

Indeed, early evidence from Beyer et al. (2019) shows that the multinational companies with the largest benefits from reducing the pre-TCJA repatriation costs actually have increased foreign, rather than domestic, investment in the wake of the TCJA. This finding is compatible with the new incentives for offshoring under the law.

THE EFFECTS OF THE NEW TAX LAW ON PROFIT SHIFTING

The effects of the new tax law on profit shifting are, in theory, ambiguous. The territorial tax treatment of some income, and the absence of tax upon repatriation, should increase the incentive to shift profit abroad, since there will no longer be concerns about repatriation tax when returning profits to shareholders. The absence of U.S. tax for the first 10 percent return on foreign assets, and the lower tax rate that applies to GILTI income rather than U.S. income, both incentivize earning profits offshore instead of in the United States.

Still, both minimum taxes are targeted at reducing profit shifting. The BEAT does this directly, by taxing companies with excessive deductible payments to related parties. The GILTI has effects that depend on company circumstances. Companies with income earned in both high-tax (or medium-tax) and low-tax countries might not be subject to GILTI tax, since the tax credits from the higher-tax country will offset any GILTI liability on the low-tax income. In this case, the effects of the tax law are to encourage more shifting to tax havens: The excess tax credits shield haven income from the minimum tax, and there is no longer any concern of tax due upon repatriation due to the territorial treatment of foreign income.

In addition, for any company not earning returns of more than a 10 percent return on assets, the new regime would also encourage profit shifting, since the GILTI would not apply, nor would repatriation tax.

However, for companies that are not shielded from the GILTI tax by excess tax credits from their operations in higher-tax countries, profit shifting is discouraged. Relative to the prior tax treatment of haven income, the GILTI raises the tax burden on low-taxed foreign income, while blunting the negative effects of earning income in high tax countries. This reduces the incentive to earn income in low-tax countries, and it also reduces the deterrent of higher tax rates in foreign countries.[57]

Oddly for such companies, the United States is the *least* desirable place to book income. Haven income is the best, since it is taxed at half the U.S. rate.[58] But higher-tax country income is still preferred to U.S. income, since the tax payments abroad shield some haven income from GILTI tax, whereas U.S. income comes with no such benefits.[59]

Still, on net, for companies paying the GILTI, there should be a reduced incentive to shift income to havens, and that should help buttress the U.S. corporate tax base. Under the old regime, a dollar earned in Bermuda (which applies no corporate tax) instead of the United States saved 35 cents

in tax payments. Upon repatriation, that dollar would face some tax (e.g., 8 or 15.5 percent under the deemed repatriation regime), but until then, the income could grow tax free, and a tax deferred is a tax saved.

Now, for companies subject to the GILTI, a dollar earned in Bermuda instead of the United States saves only 10.5 cents in tax payments, which lowers the marginal incentive to shift income to Bermuda and other tax havens. In addition, the BEAT, by taxing companies with excessive deductible payments to related parties offshore, is also likely to weaken profit-shifting incentives.

Given the ambiguities in the law, it is ultimately an empirical question whether the TCJA will reduce profit shifting relative to prior law. Considering the JCT revenue estimates of table 1, it appears that the negative effect of territoriality on corporate tax revenues, as well as the FDII, narrowly exceed the positive effects of the BEAT and the GILTI, implying that the international provisions as a whole do not raise revenue. Still, these assessments depend on many uncertainties. Estimates based on early financial data from Horst (2019) imply larger revenue losses.

In Clausing (2019c), I consider the effects of the statutory rate change, together with the GILTI, on profit-shifting incentives. Based on analyses of U.S. multinational companies' tax responsiveness, I estimate that profit shifting will decrease in the long run, causing an approximately 20 percent reduction in the U.S. affiliate tax base in haven countries, which results in a modest increase in the U.S. tax base.

Of note, a per country minimum tax would have a much larger effect on profit-shifting behavior than the global minimum tax, since *all* companies would be disincentivized from booking income in havens, as tax credits from operations in high-tax countries would no longer cushion against the tax liability associated with haven income. Indeed, the positive U.S. revenue effects from the per country tax are estimated to be more than 2.5 times those of the global minimum tax. A per country tax would also remove the tax preference for foreign income relative to U.S. income due to the global-averaging feature of the GILTI.[60]

Early evidence from the first year of the tax law indicates little effect of the TCJA on the location of U.S. multinational companies' profits. As figure 2 shows, the share of foreign income booked in the seven most important tax havens is almost constant between 2017 (the last year under the old law) and 2018 (the first year under the new law).

To some extent, the constant nature of profit shifting is unsurprising, particularly in the short run. The companies that undertake the vast majority of profit shifting are large multinational companies with vast accounting and legal expertise. Once such companies have invested in the expertise required to minimize their global tax burden, it hardly makes sense for them to stop doing that just because the marginal rewards from profit shifting have diminished. The rewards are still substantial.

Still, over time we expect economic actors to respond to marginal incentives, and the marginal incentive for profit shifting has been reduced for some companies, so that should ultimately lead to some reduction in profit shifting. Of course, the details of implementing regulations and tax planning, as well as the tax laws of other countries, can make a big difference. In the end, only time will tell.

COMPLEXITY AND ADMINISTRATION

The international tax provisions under the TCJA are mind-numbingly byzantine. In many respects the complexity is nothing new; the U.S. international tax system has always been enormously complicated. However, the new provisions (GILTI, FIDII, and BEAT) confound even legal and accounting experts. Furthermore, the provisions together are more complicated than any provision alone, since there are interaction effects between the provisions, as well as the additional complications of foreign tax credits, expense allocations, interest deduction limitations, and so forth.

In part this complexity originates with the inevitable conflicts between two of the competing tax policy goals discussed above: encouraging the competitiveness of U.S.-based multinational companies while also protecting the corporate tax base from profit shifting. Indeed, complexity is unavoidable if one is striving to couple a territorial tax system with corporate tax base protection. Thus, while the additional complexity is troubling, the TCJA should be commended for providing some limits on tax avoidance through the GILTI and the BEAT. Given the present imbalances in the U.S. international tax system, the legislation is better with these base protection measures than without them.

Acknowledgments

I am grateful to The Hamilton Project staff, and especially Jay Shambaugh, for their work on this project and constructive feedback. I also received helpful feedback from Jason Furman, Reuven Avi-Yonah, and participants at The Hamilton Project author's conference.

Endnotes

1. Some countries might be able to combine low tax rates and high corporate revenues (relative to GDP) by becoming one of the first few tax havens of choice. However, this is not a feasible strategy for most countries.
2. There are important policy proposals that would counter or eliminate these problems. However, these proposals face important political, legal, and/or technical obstacles. Overcoming these problems would make the taxation of capital income at the individual level more attractive, although it would not eliminate the importance of strengthening the corporate layer of taxation, given the large amount of U.S. equity income that is tax exempt.
3. There is ample evidence of an increased role of market power in the U.S. economy; see Philippon (2019) for a full treatment of this concern.
4. Expensing allows companies to write off the full cost of their investment in the year it was made, rather than asking those companies to depreciate the investment over time. Since the expense of making the investment is deductible, the only part of investment income that is taxed is the income above the cost of capital. Furthermore, since debt-financed investments also generate additional interest deductions, those investments receive a tax subsidy under current law.
5. While the interest earned abroad would be taxed, the interest paid at home would be deductible. Thus, if the interest rates are the same, companies would have tax-free access to their offshore funds for investment.
6. While the United States has a large pass-through business sector, corporate tax revenues have been steady despite soaring corporate profits.
7. The United States is 15.5 percent of the world economy in 2017 if we adjust for price-level differences across countries. These purchasing power parity measures account for higher price levels in richer countries, so rich-country purchasing power is lower than it would appear if we simply compare dollar measurements across countries. In contrast, countries like China and India have higher purchasing power than U.S. dollar measures of GDP indicate.
8. As one example, see the post by Steven Rosenthal on the Tax Policy Center's TaxVox blog (Rosenthal 2018).
9. For the purpose of this analysis, I focus on the seven havens of figure 2. With country-by-country income, I also include income that is described as stateless. Data sources paint a different picture of the relative importance of haven income, and no data source is perfect. They differ in terms of how income is defined, in terms of what companies are included, and in terms of potential sources of bias or measurement error. Nonetheless, the broad picture of large amounts of income in haven countries is undisputed.
10. Bureau of Economic Analysis (BEA) data are considered some of the best available data for analyzing multinational company profit shifting, as discussed in OECD (2015).
11. In contrast, analyses from accounting databases such as Orbis or Compustat omit most profit shifting since most income in tax havens is not observable.
12. See Clausing (2019b) for an analysis of the magnitude of profit shifting that uses these data.
13. Other studies that suggest very large magnitudes of profit shifting include Bilicka (2019); Crivelli, de Mooij, and Keen (2016); Tørsløv, Wier, and Zucman (2018); and Wier and Reynolds (2018). Studies that use accounting databases such as Orbis frequently find smaller magnitudes of profit shifting due to the near absence of tax haven data in the analysis. Recently, Blouin and Robinson (2019) have called into question the large size of some profit shifting estimates. However, their method of adjusting the BEA data generates its own puzzles, including negative amounts of income in some important havens in recent years as well as total stocks of haven income that are incompatible with our knowledge regarding accumulated earnings in such countries. See Clausing (2019b) for a discussion of these issues.
14. Data are from 2017. This calculation includes the big seven tax havens referenced in this section as well as other jurisdictions showing effective tax rates below 10 percent in 2017. Half of the stateless income is counted in this total, to allow for potential uncertainties regarding how we should interpret that part of this data series.
15. Many provisions in the legislation are temporary, including the tax cuts for individuals, estates, and many pass-through businesses; these provisions expire after 2025, and they are not considered

further here. The corporate provisions are permanent, although there are some changes in particular provisions over time.

16. Data are from the U.S. Federal Reserve FRED database (2017–18). Monthly receipt data through December 2018 are aggregated to generate annual totals, which are then compared to GDP.
17. Revenue data are from the Department of the Treasury (n.d.). GDP data are from the Bureau of Economic Analysis (BEA) and accessed via the FRED database (BEA 1980–2018).
18. This sets aside the revenue from the deemed repatriation tax, which raises revenue in the 10-year window but is a tax break relative to prior law.
19. This estimate counts only incremental revenue relative to JCT estimates of revenue under GILTI for the same period. The estimate follows the method described in Clausing (2019b). I assume a 4 percent annual growth rate in foreign profits to scale to the 2021–30 budget window, and numbers are nominal following JCT convention. This is similar to the revenue estimate in Clausing (2019a), but there are both method and data set differences between Clausing (2019a) and Clausing (2019b). Still, much of the difference in the 10-year revenue number is due to scaling for nominal growth in foreign profits, since the Clausing (2019a) estimate of $340 billion simply multiplied a 2016 number by 10, whereas this number accounts for 4 percent nominal growth between 2016 and 2030.
20. There is a 10-year gain of $127 billion, using JCT estimates for 2021–27 and adding three more years at the average of the 2026 and 2027 numbers. (That was also the method for calculating the lost GILTI revenue.) In addition, for FDII I multiply by the ratio (28/21) to account for the higher corporate tax rate.
21. See Clausing (2019b, 2019c).
22. See Clausing (2019a) for a thorough review of the evidence.
23. A global minimum at 28 percent will increase U.S. revenue relative to a 21 percent per country minimum for those companies with many haven operations and little high-tax foreign income. However, since cross-crediting would reduce minimum tax due for companies with foreign profits spread across both high- and low-tax countries, their minimum tax payments to the U.S. government may be lower than under a 21 percent per country minimum. Thus, the relative revenue consequences of these two minimum taxes are unclear. One common criticism of minimum taxes is that they would encourage other countries to match the minimum tax rate. However, this is a feature of the policy: With rates harmonized, there would be no incentive to shift profits or business operations for tax purposes.
24. Both prior Treasury regulations (in 2014 and 2016) and the TCJA have reduced the problem of corporate inversions. Under the TCJA there is no longer tax due upon repatriation, so one powerful motive for prior inversions is removed. In addition, the TCJA included other measures to limit inversions, although the GILTI and other features of the tax code still serve as an incentive for corporate inversions.
25. See Clausing (2014); Kleinbard (2014, 2017); and Shay (2014) for a discussion of anti-inversion measures.
26. The BEAT is a novel and previously untried provision. Experience will inform the path of possible improvements.
27. Both the Obama administration and the House Ways and Means Committee under the Republican leadership of Chairman Camp suggested revenue-neutral business tax reforms. In fact, these two reforms had many common elements. Both paired a reduction in the corporate rate (to 25 or 28 percent) with revenue-raising provisions affecting the international income of multinational companies.
28. Regarding the administration claims, see White House (2017). For a thorough review of the economics literature on this question, the evidence of other countries who have undertaken similar reforms, and the early evidence from the experience under TCJA, see Clausing (2019a).
29. See Clausing (2019a) for a thorough discussion.
30. For example, Congress should reverse the repeal of the health insurance mandate, which reduced the subsidization of health insurance for low-income Americans, thus increasing the uninsured population and raising insurance premiums throughout the health-care system.
31. Other formula choices are discussed below.
32. This replaces the need for a permanent establishment threshold to determine whether a company is taxable in the jurisdiction. The OECD has suggested similar changes, discussed below.

33. There are other options. For example, the tax base could instead be defined to follow companies' headquarters country tax base definitions, or it could be defined by multilateral agreement, perhaps following international accounting standards. See also endnote 36.
34. This is simpler than grouping companies based on lines of business. The distinction is discussed further below.
35. For a discussion of India's proposal, see Avi-Yonah (2019).
36. One approach is to define global income based on the home government of the multinational company in question. Thus, U.S. multinational companies would use the U.S. government definition of the tax base, applying it to the entire multinational enterprise. Since U.S. multinational companies already have to calculate earnings and profits of controlled foreign corporations for purposes of Subpart F and the foreign tax credit, there would be little additional administrative burden. In the presence of a multilateral agreement, countries could also agree to a common definition of the tax base, perhaps relying on international accounting standards. Use of international accounting standards would have the advantage of more closely aligning book and tax profit, reducing the overstatement of the former and the understatement of the latter.
37. See Crivelli, de Mooij, and Keen (2016) and International Monetary Fund (IMF; 2019) for more on developing-country revenue losses due to profit shifting. The IMF paper indicates that emerging and developing economies would gain from many, but not all, formulary approaches. In the case of U.S. multinational companies, 2015 BEA data on U.S. multinational companies indicate that developing countries gain under virtually any formula. The major developing countries in the survey include Argentina, Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, Guatemala, Honduras, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, Philippines, South Africa, Thailand, Turkey, and Venezuela. In 2015 the share of foreign direct investment earnings of U.S. affiliates in these countries was 8.5 percent after-tax and 12 percent before-tax. Such shares are far lower than the share of real activities in these countries; the less-developed countries host 22 percent of sales, 48 percent of employment, and 22 percent of employee compensation. (Asset shares are more in line with income shares, but they may be distorted by the influence of profit-shifting incentives on asset measurement.)
38. In fact, the same dynamic holds even if the United States is the sole adopter. But because such a move would put tremendous tax pressure on trading partner tax bases, and because there would be a greater risk of double taxation, or nontaxation, with unilateral adoption, it is both better economics and better politics to go forward with partner countries.
39. Altshuler and Grubert (2010) perform simulations that suggest that formulary apportionment could lead to tax responsiveness that is similar to the present system. However, data based on the actual past experience under formulary systems suggest that formula factors are far less tax-responsive than are paper profits. See Clausing (2016) and Mintz and Smart (2004).
40. In particular, the rule we suggest is, "Goods, services or intangibles which are sold or licensed to an unrelated person will be presumed for purposes of this section to have been sold or licensed for use, consumption, or disposition in the country of destination of the property sold or services or intangibles provided; for such purpose, the occurrence in a country of a temporary interruption in shipment of goods shall not constitute such country the country of destination. However, if at the time of a sale of personal property or services or license of intangibles to an unrelated person the enterprise knew, or should have known from the facts and circumstances surrounding the transaction, that the property, services or intangibles probably would not be used, consumed, or disposed of in the country of destination, the enterprise must determine the country of ultimate use, consumption, or disposition of the property, services or intangibles or the property, services or intangibles will be presumed to have been used, consumed, or disposed of in the United States" (849).
41. One possible response to this problem would be to apply formulary apportionment by line of business rather than by common control. This solution would lead to much additional complexity; if the underlying tax responsiveness of merger activity is low, such complexity may not be warranted. For this reason, I suggest basing formulary apportionment on common control.
42. Financial accounting data of particular companies indicate that both technology and pharmaceutical companies are particularly likely to see their effective tax rates rise in the wake of such reforms. For example, see Kiernan (2019).

43. See, e.g., Avi-Yonah and Clausing (2008, 2019). One item that has changed since the 2008 article is that there is now a consensus that treaties need to be changed to eliminate the permanent establishment requirement.
44. See Wier and Reynolds (2018) regarding the high concentration of profit shifting among the largest companies.
45. See Avi-Yonah and Clausing (2017) for a lengthier discussion of this DBCFT proposal.
46. This is not a small matter. The tax would not have worked as intended without the border adjustment. There would be large tax avoidance opportunities.
47. Gopinath (2017) argues that, even in theory, such border adjustment taxes are unlikely to be neutral in either the short run or the long run. For more on the utter unpredictability of exchange rates, see Rogoff (1999), who notes, “The extent to which monetary models, or indeed, *any* existing structural models of exchange rates, fail to explain even medium-term volatility is difficult to overstate. The out-of-sample forecasting performance of the models is so mediocre that at horizons of one month to two years they fail to outperform a naïve random walk model (which says that the best forecast of any future exchange rate is today’s rate). Almost incredibly, this result holds even when the model forecasts are based on actual realized values of the explanatory variables” (444).
48. Even *assuming* perfect exchange rate adjustment, such that the U.S. dollar appreciates exactly and instantly, that adjustment still poses serious threats to the world economy. Since many debts worldwide are dollar denominated, a large dollar appreciation harms many emerging economies as their debt burdens rise in domestic terms. In addition, since many countries target (implicitly or explicitly) the value of their currency relative to the dollar, dollar appreciation creates adjustment difficulties in other countries. Dollar appreciation would also cause a large redistribution of foreign asset wealth away from Americans and toward foreigners. The value of foreign-owned assets in the United States would rise, whereas the dollar value of U.S.-owned foreign assets abroad would fall for American investors.
49. For example, U.S. export income goes untaxed at home and may also be untaxed abroad, whereas foreign companies selling into the U.S. market may be double-taxed on that income.
50. The OECD (2019a) also envisions measures to ensure a minimum level of tax as part of its work addressing the tax challenges of the digital economy. That work is still in progress and is designed to focus on a subset of multinational companies.
51. For the United States, one possible rule is that a U.S. resident company would be defined to include both U.S.-incorporated firms and foreign firms with their mind and management in the United States. Foreign firms that have some managerial presence in the United States and that use the U.S. dollar as their functional currency would face a rebuttable presumption that they are U.S. firms. See Kleinbard (2017).
52. For example, raising capital gains tax rates does not raise much additional revenue since it generates an increased lock-in problem, whereby individuals are incentivized to hold assets too long, or even until death, to benefit from tax deferral and/or the step-up in basis at death. Mark-to-market taxation addresses that problem, but it comes with important technical difficulties regarding valuation, liquidity issues, and losses. A wealth tax provides another mechanism for taxing capital income, but in addition to similar technical difficulties, it will undoubtedly be challenged on constitutionality grounds (regardless of the merits), so back-up plans should be included in any such proposal, as suggested by Gamage (2019).
53. Capital taxation is not just about equity, but it is also about efficiency. The present corporate tax largely exempts the normal return to capital from taxation and even subsidizes debt-financed investment. In this context, much capital income actually reflects above-normal returns to capital due to risk, luck, rents, or some combination. There are strong efficiency arguments for improving the taxation of these above-normal returns to capital. Recent literature has also suggested good arguments for higher taxes on the normal return to capital. For example, see Conesa, Kitao, and Krueger (2009); Farhi et al. (2012); and Piketty and Saez (2012, 2013).
54. This number includes some minor international provisions that are not discussed here. Together, the four international provisions discussed here lose $25 billion over 10 years.
55. This analysis is preliminary and based on an incomplete sample of companies’ 10-K financial statement data. Horst (2019) finds that the combined effect of the GILTI, FDII and BEAT is negative. If this finding proves generally true, this is a far more negative outcome than predicted by the JCT,

which indicated a combined revenue effect from the three provisions of almost $200 billion over 10 years. Horst (2019) finds that BEAT will raise far less revenue than expected, the FDII will cost more revenue than anticipated, and the GILTI will likely raises somewhat more revenue than anticipated.

56. This sets to one side the deemed repatriation revenue during the 10-year budget window, which is a tax cut relative to prior law, even if it raises revenue during the window.
57. The effects of the GILTI can be complicated by the circumstances of individual companies regarding expense allocation rules, the effects of losses, and so on. There have been many instances of companies complaining that expense allocation rules caused them to fall prey to the GILTI minimum tax despite having relatively high foreign effective tax rates. However, it is important to remember that expense allocation rules themselves are meant to counter the artificial inflating of foreign income relative to U.S. income due to booking expenses in the United States rather than the foreign country. So, although expense allocation rules may reduce some companies' abilities to use foreign tax credits to offset GILTI, that result may follow from artificially high foreign income. In addition, Treasury regulations have been responsive to the concerns of companies and blunted these sorts of effects (Rubin 2019).
58. Tax rates rise in 2026 from 10.5 percent to 13.125 percent. In addition, some haven income will be taxed at more than 10.5 percent (up to 13.125 percent) since foreign tax credits are only partially creditable. See Clausing (2019c) for a full description.
59. For companies facing the GILTI, the marginal tax rate associated with non-haven income becomes $10.5 + 0.2\ t_f$, where t_f is the foreign tax rate. This rate is lower than the new U.S. rate of 21 percent for all foreign tax rates below 52.5 percent. For example, consider the marginal effect of earning a dollar in Korea, where the tax rate is 25 percent. This dollar generates an additional 10.5 cents in GILTI liability, and 25 cents in tax payable to the Korean government. But 80 percent of the Korean tax payments are creditable against haven GILTI liability, reducing those taxes by 20 cents. The next effect is 15.5 cents in tax, or $.105 + .2\ t_f$.
60. However, the effects of the U.S. minimum tax on foreign non-haven tax countries are similar, regardless of whether a per country or global minimum tax is adopted. The global minimum tax helps foreign non-haven countries by blunting the tax responsiveness of U.S. multinational companies to their higher tax rates; a per country minimum tax does not have such an effect. However, the per country minimum tax reduces profit shifting to havens more effectively, which helps all non-haven countries recover tax base relative to havens.

References

Altshuler, Rosanne, and Harry Grubert. 2010. "Formula Apportionment: Is It Better Than the Current System and Are There Better Alternatives?" *National Tax Journal* 63 (4, part 2): 1145–84.

American Jobs Creation Act of 2004 (Pub.L. 108–357).

Auerbach, Alan J., and Joel Slemrod. 1997. "The Economic Effects of the Tax Reform Act of 1986." *Journal of Economic Literature* 35 (June): 589–632.

Avi-Yonah, Reuven S. 2019. "A Break in the Dam? India's New Profit Attribution Proposal and the Arm's Length Standard." *Tax Notes International*: 1183–90.

———. 2015. "Hanging Together: A Multilateral Approach to Taxing Multinationals." Working Paper, University of Michigan Law School, Ann Arbor, MI.

Avi-Yonah, Reuven S., and Kimberly A. Clausing. 2008. "Reforming Corporate Taxation in a Global Economy: A Proposal to Adopt Formulary Apportionment." In *Path to Prosperity: Hamilton Project Ideas on Income Security, Education, and Taxes*, edited by Jason Furman and Jason E. Bordoff, 319–44. Washington, DC: Brookings Institution Press.

———. 2017. "Problems with Destination-Based Corporate Taxes and the Ryan Blueprint." *Columbia Journal of Tax Law* 8: 229–55.

———. 2019. "Toward a 21st-Century International Tax Regime." *Tax Notes International* 95 (9): 839–49.

Avi-Yonah, Reuven S., Kimberly A. Clausing, and Michael C. Durst. 2009. "Allocating Business Profits for Tax Purposes: A Proposal to Adopt a Formulary Profit Split." *Florida Tax Review* 9: 497–553.

Beyer, Brooke, Jimmy F. Downes, Mollie E. Mathis, and Eric T. Rapley. 2019. "The Effect of the Tax Cuts and Jobs Act of 2017 on Multinational Firms' Capital Investment: Internal Capital Market Frictions and Tax Incentives." Working Paper, UNC Tax Center, Kenan Institute of Private Enterprise, University of North Carolina, Chapel Hill, NC.

Bilicka, Katarzyna. 2019. "Multinationals' Profit Response to Tax Differentials: Effect Size and Shifting Channels." *American Economic Review* 109 (8): 2921–53.

Blouin, Jennifer and Leslie Robinson. 2019. "Double Counting Accounting: How Much Profit of Multinational Enterprises Is Really in Tax Havens?" Available at the Social Science Research Network (SSRN).

Bureau of Economic Analysis (BEA). 1980–2017. "Corporate Business: Profits After Tax." Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis, St. Louis, MO.

———. 1980–2017. "Corporate Business: Profits Before Tax." Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis, St. Louis, MO.

———. 1980–2018. "Gross Domestic Product (GDP)." Bureau of Economic Analysis, Suitland, MD. Retrieved from FRED, Federal Reserve Bank of St. Louis, St. Louis, MO.

———. 2000–18. "U.S. Direct Investment Abroad: Balance of Payments and Direct Investment Position Data." Bureau of Economic Analysis, Suitland, MD.

———. 2015. "Activities of U.S. Multinational Enterprises (MNEs)." Bureau of Economic Analysis, Suitland, MD.

Burman, Leonard E., Kimberly A. Clausing, and Lydia Austin. 2017. "Is U.S. Corporate Income Double-Taxed?" *National Tax Journal* 70 (3): 675–706.

Clausing, Kimberly A. 2014. "Corporate Inversions." Urban Institute–Brookings Institution Tax Policy Center (TPC), Washington, DC.

———. 2016. "The U.S. State Experience Under Formulary Apportionment: Are There Lessons for International Reform?" *National Tax Journal; Washington* 69 (2): 353–86.

———. 2019a. "Fixing the Five Flaws of the Tax Cuts and Jobs Act." Working Paper. Available at the Social Science Research Network (SSRN).

———. 2019b. "How Big Is Profit Shifting." Working Paper. Available at the Social Science Research Network (SSRN).

———. 2019c. "Profit Shifting Before and After the Tax Cuts and Jobs Act." Available at the Social Science Research Network (SSRN).

Clausing, Kimberly A., and Reuven Avi-Yonah. 2007. "Reforming Corporate Taxation in a Global Economy: A Proposal to Adopt Formulary Apportionment." Discussion Paper 2007-08, The Hamilton Project, Brookings Institution, Washington, DC.

Conesa, Juan Carlos, Sagiri Kitao, and Dirk Krueger. 2009. "Taxing Capital? Not a Bad Idea After All!" *American Economic Review* 99: 25–48.

Crivelli, Ernesto, Ruud A. de Mooij, and Michael Keen. 2016. "Base Erosion, Profit-Shifting, and Developing Countries." *Finanz - Archiv* 72 (3): 268–301.

Devereux, Michael P., Alan J. Auerbach, Michael Keen, Paul Oosterhuis, Wolfgang Shoen, and John Vella. 2019. "Residual Profit Allocation by Income." Oxford Legal Studies Research Paper 41/2019. Available at the Social Science Research Network (SSRN).

Dyreng, Scott D., Robert Hills, and Kevin S. Markle. 2019. "Untaxed Foreign Earnings." Working Paper.

Farhi, Emmanuel, Christopher Sleet, Iván Werning, and Sevin Yeltekin. 2012. "Non-Linear Capital Taxation Without Commitment." *Review of Economic Studies* 79 (4): 1469–93.

Furman, Jason. 2020. "How to Increase Growth While Raising Revenue: Reforming the Corporate Tax Code." In *Tackling the Tax Code: Efficient and Equitable Ways to Raise Revenue*, edited by Jay Shambaugh and Ryan Nunn. Washington, DC: The Hamilton Project.

Gamage, David. 2019. "Five Key Research Findings on Wealth Taxation for the Super Rich." Indiana University School of Law. Available at the Social Science Research Network (SSRN).

Gopinath, Gita. 2017. "A Macroeconomic Perspective on Border Taxes." *Brookings Papers on Economic Activity*: 433–47.

Guvenen, Fatih, Raymond J. Mataloni, Dylan Rassier, and Kim J. Ruhl. 2018. "Offshore Profit Shifting and Domestic Productivity Measurement." Working Paper 23324, National Bureau of Economic Research, Cambridge, MA.

Horst, Thomas. 2019. "Preliminary Effects of the Likely Actual Revenue Effects of the TCJA's Provisions." *Tax Notes International* (September): 1153–58.

Independent Commission for the Reform of International Corporate Taxation (ICRICT). 2018. "A Roadmap to Improving Rules for Taxing Multinationals." Independent Commission for the Reform of International Corporate Taxation, Buckinghamshire, UK.

International Monetary Fund (IMF). 2019. "Corporate Taxation in the Global Economy." Policy Paper, International Monetary Fund, Washington, DC.

Joint Committee on Taxation (JCT). 2014. "Estimates of Federal Tax Expenditures for FY 2014–2018." Joint Committee on Taxation, Washington, DC.

———. 2017. "Estimated Budget Effects of the Conference Agreement for H.R.1, The "Tax Cuts and Jobs Act." Joint Committee on Taxation, Washington, DC.

Jurney, Corinne. 2017. "The World's Largest Public Companies 2017." *Forbes,* May 24.

Kiernan, John S. 2019. "2019 Corporate Tax Rate Report." WalletHub, online.

Kleinbard, Edward D. 2011. "Stateless Income." *Florida Tax Review* 11 (9): 699–773.

———. 2014. "Competitiveness Has Nothing to Do with It." *Tax Notes* 144 (September).

———. 2017. "The Right Tax at the Right Time." *Florida Tax Review* 21: 208–388.

Mintz, Jack, and Michael Smart. 2004. "Income Shifting, Investment, and Tax Competition: Theory and Evidence from Provincial Taxation in Canada." *Journal of Public Economics* 88: 1149–68.

Organisation for Economic Co-operation and Development (OECD). 2015. *Measuring and Monitoring BEPS: Action 11 Final Report*. Paris: Organisation for Economic Co-operation and Development.

———. 2019a. *Addressing the Tax Challenges of the Digitalisation of the Economy*. Paris: Organisation for Economic Co-operation and Development.

———. 2019b. *Secretariat Proposal for a "Unified Approach" under Pillar One*. Paris: Organisation for Economic Co-operation and Development.

Philippon, Thomas. 2019. *The Great Reversal: How America Gave Up on Free Markets*. Cambridge, MA: Harvard University Press.

Piketty, Thomas, and Emmanuel Saez. 2012. "A Theory of Optimal Capital Taxation." Working Paper 17989, National Bureau of Economic Research, Cambridge, MA.

———. 2013. "A Theory of Optimal Inheritance Taxation." *Econometrica* 81 (5): 1851–86.

Rogoff, Kenneth. 1999. "Perspectives on Exchange Rate Volatility." In *International Capital Flows*, edited by Martin Feldstein, 441–53. Cambridge, MA: National Bureau of Economic Research.

Rosenthal, Steven M. 2018. "Obama's Anti-Abuse Rules Slashed Inversions." Urban–Brookings Institution Tax Policy Center (TPC), Washington, DC.

Rubin, Richard. 2019. "Tax Changes Hit Overseas Profits of Some U.S. Companies." *Wall Street Journal,* March 27.

Saez, Emmanuel, Joel Slemrod, and Seth H. Giertz. 2012. "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review." *Journal of Economic Literature* 50 (1): 3–50.

Saez, Emmanuel, and Gabriel Zucman. 2019. *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make Them Pay.* New York, NY: W. W. Norton & Company.

Shay, Stephen. 2014. "Mr. Secretary, Take the Tax Juice Out of Corporate Expatriations." *Tax Notes*, July.

Slemrod, Joel, and Jon Bakija. 2008. *Taxing Ourselves*. Cambridge, MA: MIT Press.

Tax Cuts and Jobs Act of 2017 (TCJA). Pub.L. 115-97, Stat.:131 Stat. 2054.

Tørsløv, Thomas, Ludvig Wier, and Gabriel Zucman. 2018. "The Missing Profits of Nations." Working Paper 24701, National Bureau of Economic Research, Cambridge, MA.

U.S. Congressional Budget Office (CBO). 2019. "The Budget and Economic Outlook: 2019 to 2029." Congressional Budget Office, Washington, DC.

U.S. Department of the Treasury. n.d. "Monthly Receipts, Outlays, and Deficit or Surplus, Fiscal Years 1981–2019." Accessed March 2, 2019, at https://www.fiscal.treasury.gov/reports-statements/mts/current.html.

White House. 2017. "Corporate Tax Reform and Wages: Theory and Evidence." Council of Economic Advisers, White House, Washington, DC.

Wier, Ludvig, and Hayley Reynolds. 2018. "Big and Unprofitable: How 10% of Multinational Firms Do 98% of Profit Shifting." Working Paper, United Nations University World Institute for Development Economics Research, Helsinki, Finland.

Zucman, Gabriel. 2015. *The Hidden Wealth of Nations*. Chicago, IL: University of Chicago Press.