

# **The Consequences of the TCJA's International Provisions: Lessons from Existing Research**

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## **Abstract**

This paper reviews the most important international tax provisions of the recent Tax Cut and Jobs Act (TCJA). It also discusses their potential consequences, drawing on existing theoretical and empirical research. The TCJA's dividend exemption provision is expected to eliminate the distortions to the amount and timing of dividend repatriations that characterized the pre-TCJA regime. However, the efficiency gains from increased repatriations – which are primarily expected to increase shareholder payout – are likely to be modest. Using the observed behavior of firms during the 2005 repatriation tax holiday to infer the relative magnitudes of tax burdens, it is shown that the TCJA's new "Global Intangible Low-Taxed Income" (GILTI) tax increases the tax burden on US residence for many, and perhaps most, US multinational firms. Existing empirical evidence suggests substantial efficiency costs from such residence-country tax burdens. The GILTI and "Foreign-Derived Intangible Income" (FDII) provisions are predicted to create substantial distortions to the ownership of assets, both in the US and around the world; prior evidence suggests that these distortions may have substantial efficiency costs. Overall, the international provisions of the TCJA can reasonably be expected to create potentially large efficiency losses. It also generates considerable uncertainty about the future of tax policy.

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## 1) Introduction

In December 2017, Congress enacted what is formally known as “An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018” (Public Law 115-97). This legislation is informally (and rather more concisely) referred to as the “Tax Cut and Jobs Act of 2017” (TCJA). Among other things, the TCJA enacted far-reaching reforms to the US system of international taxation. The aim of this paper is to review some of the most important of these new international tax provisions and to discuss their potential consequences, drawing on existing theoretical and empirical research. An important caveat to bear in mind is that many uncertainties remain about the interpretation and future implementation of these provisions. Moreover, some of the new rules are quite novel, and there are thus significant challenges in extrapolating from prior research. For these reasons, this paper should be viewed merely as a preliminary attempt to understand the consequences of the TCJA. The paper is also limited in scope, addressing some of the most significant international provisions but ignoring many complications and details in the interests of clarity and brevity.

As has been widely discussed, the US prior to the TCJA imposed a system of worldwide taxation on US-based multinational corporations (MNCs) (e.g. Dharmapala, 2017). The income generated by foreign affiliates of US parents was taxed by the US, albeit with deferral of US taxation until the dividends were paid (or “repatriated”) to the US parent. A substantial body of empirical evidence shows that this “old regime” gave rise to a number of inefficiencies. The US tax imposed upon the repatriation of dividends created an incentive to delay repatriation. In turn, this led to the accumulation of cash holdings - estimated at about \$2.1 trillion in 2015<sup>1</sup> - in foreign affiliates. It was frequently argued that these funds were “locked out” of the US parent, with the US tax cost of repatriation hindering the frictionless allocation of internal funds within the MNC.

This “lockout” effect (e.g. Graham, Hanlon and Shevlin, 2010) constituted one component of the additional tax burden imposed by US taxation on the foreign activities of MNCs resident in the US, beyond the burden of source-based taxes imposed by host countries. MNCs resident in countries with “territorial” (or, more precisely, “participation exemption”) tax regimes, in which income attributable to the activities of foreign affiliates is exempt, face no such additional home-country tax burden. One well-publicized consequence was the growing pressure for “inversion”

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<sup>1</sup> This estimate is from the Citizens for Tax Justice report on “\$2.1 Trillion in Corporate Profits Held Offshore: A Comparison of International Tax Proposals” at <http://ctj.org/pdf/repatriation0715.pdf>.

transactions, where the erstwhile US parent becomes a subsidiary of a foreign parent. Inversions were strongly deterred by anti-inversion rules adopted in 2004.<sup>2</sup> However, inversions are arguably merely a symptom of the tax disadvantages of US residence, which the anti-inversion rules do not solve (and indeed exacerbate).

More generally, contemporary theories of multinational business emphasize that the identity of the firm that owns an asset significantly affects the productivity of that asset. This insight has led tax scholars to formulate a principle of “capital ownership neutrality” (CON). This entails that tax rules that do not distort patterns of ownership of assets across locations (Devereux, 1990; Desai and Hines, 2003). Empirical evidence on cross-border mergers and acquisitions suggests that the tax burden on US residence affected global patterns of ownership of assets, with US MNCs being at a disadvantage in acquiring foreign assets. In particular, distortions are created when a US MNC would be the most productive owner of a foreign asset, but that asset is instead owned by a non-US MNC due to the US tax burden on the US MNC. The efficiency cost in this scenario is the lower productivity of such assets as a result of ownership distortions. In addition, the tax burden on US residence entails that US MNCs are disfavored as vehicles for global portfolio investment. Desai and Dharmapala (2009) find evidence that the additional US tax on foreign income induced US portfolio investors to supply less capital to the US MNCs. Moreover, the US appeared increasingly isolated in its insistence on imposing worldwide taxation, especially after major territorial reforms in the UK and Japan in 2009.

The TCJA established a dividend exemption system for repatriations from foreign affiliates to their US parents. As discussed below, this reform solves the lockout problem. However, the TCJA regime is a far cry from the participation exemption ideal advocated by proponents of territorial taxation. In particular, it imposes a fundamentally new type of US tax on foreign income, known as the “Global Intangible Low-Taxed Income” (GILTI) tax. This is a tax on the income of a US MNC’s foreign affiliates, net of a presumptive “routine” return on tangible assets. It is imposed on an immediate basis (i.e. without regard to whether the foreign income is repatriated). Although it does not distort repatriation decisions, it imposes a potentially significant US tax burden on US residence. The analysis below uses the observed behavior of firms during the repatriation tax holiday implemented in 2005 to infer the relative magnitudes of the burdens created by the repatriation tax under the old (pre-TCJA) regime and by the GILTI tax. It concludes

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<sup>2</sup> IRC § 7874. For an account of the background to inversion transactions, see e.g. Marples and Gravelle (2014).

that the GILTI tax – and thus the TCJA, when taking all of its provisions into account - increases the tax burden on US residence for many, and perhaps most, US MNCs.

Another important element of the TCJA is the “Foreign-Derived Intangible Income” (FDII) provision. This is an export subsidy that establishes a preferential 13.125% tax rate (as opposed to the standard 21% rate) for US corporations’ income, net of a presumptive “routine” return on tangible assets, based on the fraction of the corporation’s income derived from exports. The GILTI-FDII framework introduced by the TCJA adopts a formulaic approach to taxing income that is presumptively derived from intangible assets. The analysis below shows that this framework is likely to create substantial ownership distortions. In particular, US MNCs are now tax-favored owners of tangible assets in foreign countries and tax-disfavored owners of tangible assets in the US, potentially creating ownership distortions and lowering the productivity of assets. The GILTI-FDII framework has not previously been implemented in any other country (perhaps, as discussed below, with good reason), and so there is no evidence directly on its impact. However, simulations undertaken by Altshuler and Grubert (2010) to study a broadly similar context – formula apportionment based on tangible assets – suggests that large changes to ownership patterns and substantial inefficiencies will ensue.

There are a number of other notable international provisions of the TCJA that are not addressed here in detail due to a lack of space. These include the “Base Erosion Anti-Abuse Tax” (BEAT), a new minimum tax regime that disallows deductions for payments to foreign related parties in certain circumstances. The TCJA also imposes a one-time tax on foreign cash holdings (through a deemed repatriation mechanism), but this is not intended to have ongoing applicability. The drastic reduction in the corporate tax rate from 35% to 21% has various implications for international taxation, for instance with regard to incentives for profit shifting, that are briefly discussed below.

Section 2 analyzes the potential consequences of the abolition of the US repatriation tax. Section 3 broadens the discussion to the likely impact of the TCJA reforms – and especially of the new GILTI tax - on the tax burden associated with US residence. Section 4 provides simple examples of how the GILTI and FDII provisions may lead to ownership distortions. Section 5 discusses the wider implications of the reforms, and Section 6 concludes.

## 2) The End of the Repatriation Tax

One of the elements of the TCJA's international tax reforms that has enjoyed wide support is the abolition of the repatriation tax. As is well-known, the old regime imposed US tax on dividend repatriations from foreign affiliates at the time of repatriation. There is a substantial body of empirical evidence (e.g. Desai, Foley and Hines, 2001) showing that repatriations by foreign affiliates of US MNCs were sensitive to the repatriation tax. Moreover, empirical evidence on the effects of the 2009 tax reforms in the UK and Japan – which also abolished repatriation taxes – bears out the natural expectation that dividend exemption will lead to increased repatriations. Egger et al. (2015) find a substantial increase in repatriations by UK-owned foreign affiliates, using affiliate-level data; their estimated effect amounts to over 25% of the mean level of repatriations by UK-owned affiliates in their sample. Hasegawa and Kiyota (2017) find that repatriations from Japanese-owned foreign affiliates with large amounts of retained earnings increased after Japan's 2009 reform. Increased repatriations would be expected to lead to lower levels of cash being accumulated within foreign affiliates; indeed, Xing (2018) finds that Japanese-owned foreign affiliates that previously faced high tax costs of repatriation reduced cash holdings after the reform.

While it is thus reasonable to expect higher levels of repatriations from US-owned foreign affiliates, what consequences might flow from increased repatriations? The clearest evidence on this question is from a body of literature on the American Job Creation Act (AJCA) enacted by Congress in 2004. The AJCA contained a provision that enabled US MNCs to repatriate at a significantly reduced US tax rate of 5.25% during 2005. This provision gave rise to a dramatic temporary increase in repatriations (as documented, for instance, in Redmiles (2008)). Researchers have used this episode to construct quasi-exogenous shocks to repatriations that can shed light on the consequences of repatriation increases. For instance, Dharmapala, Foley and Forbes (2011) use an instrumental variables (IV) strategy based on ownership characteristics (such as the presence of tax haven affiliates and holding company structures) that were determined prior to the AJCA. They identify the effects of exogenous increases in repatriations on a variety of outcomes related to firm behavior.

The general consensus from this literature (e.g. Blouin and Krull, 2009; Dharmapala, Foley and Forbes, 2011) is that the primary impact of increased repatriations is an increase in shareholder

payout. In contrast, the AJCA had no detectable impact on US investment or employment levels.<sup>3</sup> While the ability to freely repatriate funds from abroad to finance share repurchases or dividends is undoubtedly beneficial to firms and their shareholders, the efficiency gains are likely to be modest. This is because the change in shareholder payout is primarily a matter of timing – firms are able to accelerate payout relative to the delayed timing under the old regime. However, shareholders’ intertemporal pattern of consumption is unlikely to have been distorted by the deferral of payout under the old regime, as stock is mostly owned by households with higher incomes and access to credit.

On the other hand, it is possible that dividend exemption may reduce agency costs of free cash flow in foreign affiliates. For example, Hanlon, Lester and Verdi (2015) find smaller positive market responses to announcements of acquisitions when the acquirer is a US MNC with large tax-induced foreign cash holdings. Egger et al. (2015) find that UK-owned foreign affiliates reduced investment following the 2009 dividend exemption reform. It is possible that the tax advantage to deferring repatriations created the potential for obfuscation about whether the retention of cash in foreign affiliates stemmed from tax motivations or from agency costs (as in the model of corporate tax avoidance developed by Desai and Dharmapala (2006)). It should be remembered, however, that dividend exemption does not eliminate these agency costs; it merely limits one particular channel for obfuscation. Thus, the extent to which the reform will affect the prevalence of negative-value investments remains to be seen.

Prior to the passage of the TCJA, the Council of Economic Advisors (CEA) claimed that “U.S. workers would retain 30 percent of the 2016 profits of U.S. firms earned abroad and not currently repatriated” (CEA, 2017, p. 9). While there is some ambiguity about how this should be interpreted, the suggestion appears to be that higher repatriations will result in substantially higher wages for US workers.<sup>4</sup> The posited mechanism is rent-sharing between employers and employees. Conceptually, this claim is problematic, as the foreign profits of US MNCs are reported *net* of rents shared with workers employed by foreign affiliates; it is unclear why the firm would bestow part of its own share of these rents on US workers (who played no role in generating them).

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<sup>3</sup> However, there are some papers that argue that a subset of US MNCs that were financially constrained increased their domestic investment (e.g. Faulkender and Petersen, 2012).

<sup>4</sup> Alternatively, this claim may refer to profit shifting rather than to repatriations. Note, however, that there is also no evidence that reductions in outbound profit shifting would increase wages.

In any event, the proposition that repatriations increase US wages *has* already been tested: Dharmapala, Foley and Forbes (2011, p. 768, Table III, Columns 3 and 4) regress employee compensation at US MNCs' domestic operations on AJCA repatriations. The OLS estimate is essentially zero, albeit statistically insignificant. The IV estimate (using the strategy described above) is negative but very imprecise. To be sure, this is not evidence of the absence of an effect; however, it suggests that there is no evidence supporting the claim that increased repatriations will increase US wages.<sup>5</sup>

### **3) The Overall Tax Burden on US Residence**

The repatriation tax and its consequences (such as the lockout effect) represent only one component of the tax burden placed on US corporate residence. To see this, imagine a system of immediate worldwide taxation by the US of foreign affiliates' income, without deferral (as advocated, for instance, by Peroni, Fleming and Shay (1999)). Such a system would not create any distortion to the amount or timing of repatriations. However, it would clearly impose a tax burden on US residence, as foreign activity would be subject to US taxation in addition to source country taxation. It is thus important to focus on the broader question of how the TCJA's provisions, taken together, affect the tax burden on US residence.

A central focus of the recent literature on MNCs is the importance of patterns of ownership of assets that maximize their productivity. Assets' productivity typically depends on the identity and characteristics of the firm that owns them. A substantial and growing body of evidence shows that residence-based taxation of foreign income has significant effects on the patterns and value of cross-border mergers and acquisitions (M&A), thus creating distortions to patterns of ownership (in particular, to which affiliates are owned by which parents).<sup>6</sup> For example, Huizinga and Voget (2009) estimate that eliminating the US residence-based tax would have increased the prevalence of post-merger entities with US domiciles from 53% to 58% for cross-border M&A transactions over 1985-2004. Voget (2011) finds that a 10 percentage point higher repatriation tax increases MNCs' propensity to relocate their headquarters by a third. Feld et al. (2013) find that the number of M&A transactions with a Japanese acquirer increased by about 32% following the 2009

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<sup>5</sup> It should be noted, however, that wages may in principle be affected by other provisions of the TCJA (although there are reasons to be skeptical here as well, as discussed in Section 5 below).

<sup>6</sup> This evidence is discussed in more detail in Dharmapala (2017).

Japanese reform. They also estimate that a similar reform of the US tax system would increase the number of M&A transactions with US acquirers by 17%.

Residence-based taxation can also lead to distortions to the scale of MNC activity, as well as to ownership patterns. Liu (2018) finds that the 2009 UK territorial reform increased UK MNCs' investment in lower-tax foreign countries, where the repatriation tax was previously most burdensome. However, this increase was not accompanied by a detectable decrease in activity in higher-tax foreign countries or in the UK itself.

Overall, the available evidence and the experience of the UK and Japan suggest that there are considerable potential benefits from reducing the burden of residence-based taxation. While the dividend exemption provision of the TCJA (taken in isolation) reduces the tax burden on US residence, other provisions of the TCJA may end up vitiating the types of benefits that the UK and Japan have achieved through territorial tax reform. Particularly important in this context is the GILTI tax. This is a new US tax on above-normal foreign returns, imposed immediately (i.e. without deferral). Thus, it does not distort repatriation behavior and does not create a lockout problem; nonetheless, it creates a potentially significant burden on US residence.

A crucial question is thus whether the burden of the GILTI tax is likely to exceed the burden of the old regime's repatriation tax. Suppose that under the old regime, the foreign affiliates of a US MNC earned (aggregate) pretax income of  $Y_F$ , taxed by the foreign governments at a rate  $\tau_F \leq 0.35$ . At some future time, the affiliates repatriate the remaining amount  $(1 - \tau_F)Y_F$  to the US parent. At that time, the amount subject to US tax was "grossed up" to  $Y_F$ , with a foreign tax credit (FTC) for the tax paid to foreign governments. Thus, the US tax liability imposed upon repatriation was  $(0.35 - \tau_F)Y_F$ . However, the overall burden of the repatriation tax should take account of the value of deferral and of the costs of tax planning incurred by firms. Thus, the burden of the repatriation tax can be characterized as:

$$\delta(0.35 - \tau_F)Y_F + C_P \tag{1}$$

Here,  $\delta$  denotes a discount factor that takes account of the expected deferral of repatriation (and so measures the burden of the tax in present value terms), while  $C_P$  is the cost of tax planning to achieve deferral of the repatriation tax.<sup>7</sup>

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<sup>7</sup> This is assumed to be a fixed cost, but it could be assumed to be a function of  $\delta$  and/or  $\tau_F$  without affecting the basic argument.

Of course, both  $\delta$  and  $C_p$  (and hence the expression in Equation (1)) are difficult to observe. However, the AJCA repatriation tax holiday described above allows some inferences to be drawn about its relative magnitude. Under the AJCA, US MNCs were permitted to repatriate in 2005 at a tax rate that was reduced by 85% (with the FTC also reduced by the same proportion). This implied a tax rate of 5.25% instead of the usual 35%, with an FTC of 15% of foreign taxes paid. The US tax imposed on repatriations under the AJCA was thus  $0.15(0.35 - \tau_F)Y_F$ .<sup>8</sup>

As is well-known, large amounts were repatriated under the AJCA (e.g. Redmiles, 2008). What is less often emphasized is that only a relatively small fraction of US MNCs chose to repatriate under the AJCA, despite that apparently very favorable tax rate. Redmiles (2008) reports that there were 843 AJCA repatriators out of 9700 US firms that report owning foreign affiliates (controlled foreign corporations, or CFCs) on their tax returns. This represents 7% of the universe of (publicly-listed and privately-held) US MNCs. Blouin and Krull (2009) construct a sample that consists of all firms in the Compustat database (i.e. publicly-listed US firms) that report items related to foreign activity. They hand-collect data on whether these firms repatriated under the AJCA from firms' 10-K disclosures. Of their sample of 2696 firms, 357 (about 13%) repatriated under the AJCA. Repatriating firms tended to be larger in size. If firms are weighted by their worldwide assets, then about 49% of asset-weighted firms repatriated. Thus, even when weighting by assets, repatriation under the AJCA was far from universal.<sup>9</sup> For those firms that chose not to repatriate under the AJCA, it can be inferred that:

$$0.15(0.35 - \tau_F)Y_F > \delta(0.35 - \tau_F)Y_F + C_p \quad (2)$$

That is, the tax liability they faced under the AJCA in 2005 exceeded the burden of the US repatriation tax that they typically faced in non-AJCA years.

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<sup>8</sup> There were certain limitations on the amount that could be repatriated, based on the amounts that had previously been designated as “permanently reinvested earnings” (PRE) in financial statements. Firms were also required to produce a “dividend reinvestment plan” (DRIP), as the AJCA ostensibly required that funds repatriated at the lower tax rate be used to increase US investment and employment (but note that the findings discussed earlier that firms increased shareholder payout do not indicate violations of the AJCA, due to the fungibility of the repatriated funds – see Graham, Hanlon and Shevlin (2010). However, the transactions costs of repatriating under the AJCA were relatively small, and are ignored in what follows.

<sup>9</sup> The fraction of repatriators is higher in Dharmapala, Foley and Forbes (2011, p. 764): they report that 261 out of 924 firms in their sample (i.e. about 28%) repatriated under the AJCA. However, their sample consists of firms for which both micro-level BEA data and Compustat data are available, so the universe it represents is less clear. Graham, Hanlon and Shevlin (2010) find that 105 out of 411 firms that responded to their survey repatriated under the AJCA; again, however, it is unclear what population the 411 respondent firms represent.

The GILTI tax<sup>10</sup> involves first computing what is termed the “tested income” of a US parent. This is the pretax foreign income (denoted above by  $Y_F$ ) aggregated over all of its foreign affiliates (more precisely, its CFCs), subtracting certain exclusions and deductions. The exclusions relate mostly to Subpart F income, and are ignored here. The deduction that is of most relevance here is for foreign taxes. Thus, simplifying significantly, tested income can be defined as  $(1 - \tau_F)Y_F$ . The GILTI concept allows the US corporation a presumptive return of 10% on its tangible foreign assets, denoted by  $A_F$ . The value of  $A_F$  is determined by the affiliates’ basis in depreciable physical assets, or “Qualified Business Asset Investment” (QBAI).<sup>11</sup> GILTI is defined as the excess of tested income over the presumptive 10% return on foreign tangible assets. Net interest expense is added to GILTI, but it is assumed here that net interest expense is zero.<sup>12</sup> Thus:

$$GILTI = (1 - \tau_F)Y_F - 0.1A_F \quad (3)$$

The GILTI tax liability is determined by applying a 10.5% tax rate to GILTI (as defined in Equation (3)). This represents a 50% deduction relative to the baseline 21% corporate tax rate. From 2026, the GILTI rate will increase to 13.125%; however, the current 10.5% rate is used in the calculations below.<sup>13</sup> In addition, a partial FTC is allowed for foreign taxes paid. This entails grossing up GILTI by these foreign taxes under § 78, using an inclusion percentage that is the ratio of GILTI to tested income. Only 80% of the foreign tax may be used for the FTC. Thus, the GILTI tax liability, denoted  $T_{GILTI}$ , can be defined as follows:

$$T_{GILTI} = 0.105 \left( (1 - \tau_F)Y_F - 0.1A_F + \frac{(1 - \tau_F)Y_F - 0.1A_F}{(1 - \tau_F)} \tau_F \right) - 0.8 \left( \frac{(1 - \tau_F)Y_F - 0.1A_F}{(1 - \tau_F)} \tau_F \right) \quad (4)$$

for  $\tau_F \leq 0.13125$  (otherwise,  $T_{GILTI} = 0$ ).

Whether the tax burden on US residence increases or decreases under the TCJA depends on whether  $T_{GILTI}$  (as defined in Equation (4)) exceeds the burden of the repatriation tax defined in Equation (1). For firms that chose not to repatriate under the AJCA, it can be inferred that the

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<sup>10</sup> § 951A

<sup>11</sup> This basis is adjusted for GILTI purposes using straight-line depreciation. Thus, it would not be affected by the expensing provisions in the TCJA.

<sup>12</sup> Assuming a positive net interest expense would make the GILTI tax more burdensome, and thus would tend to reinforce the basic conclusions below.

<sup>13</sup> Again, a higher rate would make the GILTI tax more burdensome, and thus would tend to reinforce the basic conclusions below.

AJCA tax liability of  $0.15(0.35 - \tau_F)Y_F$  exceeded the usual burden of the repatriation tax defined in Equation (1) – see Equation (2). Thus, for non-repatriators, a sufficient condition for the GILTI tax to increase the tax burden on US residence is that  $T_{GILTI} > 0.15(0.35 - \tau_F)Y_F$ . Simplifying Equation (4) and multiplying both sides by  $(1 - \tau_F)/A_F$  yields the following condition for  $T_{GILTI}$  to exceed the AJCA tax:

$$\left( (1 - \tau_F) \frac{Y_F}{A_F} - 0.1 \right) (0.105 - 0.8\tau_F) > (1 - \tau_F) \left( 0.0525 \frac{Y_F}{A_F} - 0.15\tau_F \frac{Y_F}{A_F} \right) \quad (5)$$

The solution to Equation (5) depends on the ratio  $Y_F/A_F$  of pretax foreign income to foreign tangible assets. It is possible to compute a proxy for this ratio using data from the Bureau of Economic Analysis (BEA) survey of US MNCs. The most recent benchmark survey – for 2014 – implies a ratio of net income to net plant, property and equipment (PPE) for US-owned foreign affiliates (aggregated across all foreign countries) of about 0.65.<sup>14</sup> This may seem quite high, but note that this arguably reflects the important role of intangible assets in generating US MNCs’ income.

Equation (5) can be solved straightforwardly, although the solution is algebraically cumbersome. When  $Y_F/A_F = 0.65$ , the condition in Equation (5) is satisfied for  $\tau_F < 6.8\%$  - i.e. for foreign tax rates below about 6.8%. To place this in context, Blouin and Krull (2009) report that the mean foreign tax rate (based on financial statement data from Compustat) for firms in their sample that did not repatriate under the AJCA was 8.1%, while the median foreign tax rate for non-repatriators was zero.<sup>15</sup> These numbers suggest that Equation (5) would be satisfied for a substantial fraction, and probably a majority, of firms that did not repatriate under the AJCA. For non-repatriating firms for which Equation (5) is satisfied, it follows *a fortiori* that the GILTI tax burden is larger than the burden of the repatriation under the old regime – i.e. that:

$$T_{GILTI} > \delta(0.35 - \tau_F)Y_F + C_P \quad (6)$$

It should be emphasized that Equation (5) is a *sufficient* condition for Equation (6) to hold among non-repatriators; it is not a necessary condition. Moreover, it is also possible that many

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<sup>14</sup> The 2014 benchmark survey data is available at: <https://www.bea.gov/international/xls/usdia2014r/PartI-A1-A4.xls>. It reports net income (aggregate over all US-owned foreign affiliates in all foreign countries) of \$1,280,839 million. Net PPE is \$1,947,194 million. Note that this may be an underestimate of  $Y_F/A_F$ , as PPE does not take account of the adjustments to basis from depreciation deductions. Using the 2015 preliminary BEA survey data (available at <https://www.bea.gov/international/pdf/usdia2015p/1-2015.pdf>) yields an even higher ratio of 0.75.

<sup>15</sup> The BEA’s 2014 survey shows that – across all US-owned foreign affiliates in all foreign countries – the average foreign tax rate is about 12.5%. Foreign income taxes (in the aggregate) are reported to be \$160,550 million, while net income is \$1,280,839 million – see <https://www.bea.gov/international/usdia2014r.htm>.

AJCA repatriators face a higher US tax burden under the GILTI regime. For instance, suppose that a firm faces  $\delta = 0.16$  and  $C_p = 0$ . Such a firm would choose to repatriate under AJCA for any  $\tau_F$ . Suppose in particular that  $\tau_F = 0$ . Then, it can straightforwardly be shown that, for the average  $Y_F/A_F = 0.65$ , the GILTI tax liability exceeds the burden of the old repatriation tax.

A number of caveats should be noted. The 2005 AJCA episode is now several years in the past; however, there has been no subsequent event that provides quasi-exogenous variation in repatriations. The characterization of the GILTI tax above simplifies the applicable law considerably. However, the features that are ignored – such as net interest expense and the future increase in the GILTI tax rate, as mentioned earlier, and others (such as limitations on the availability of the FTC due to expense allocation rules) – generally tend to increase the burden of the GILTI tax. Thus, taking account of these features would only strengthen the basic conclusion.

The discussion above has also ignored the financial accounting cost of repatriating foreign earnings that have previously been designated as “permanently reinvested.” This designation allows the firm to defer recognition of the US repatriation tax for financial accounting purposes. However, if the firm were to subsequently repatriate these earnings, it must recognize the US repatriation tax expense (thereby resulting in lower reported after-tax earnings). Blouin, Krull and Robinson (2012) use BEA micro-level data for the pre-AJCA period (1999-2004) and find that these financial reporting incentives decrease repatriations by 17 to 21%. The financial reporting incentives apply to both AJCA and non-AJCA repatriations (and thus to both sides of Equation (2)). However, if the perceived cost of lower reported earnings is convex, firms may have reduced repatriations under the AJCA to avoid “bunching” financial reporting costs in 2005. Even so, however, it appears unlikely that this would substantially change the conclusion that a significant fraction of US MNCs may be worse off under the GILTI tax.

In summary, the TCJA may well increase the tax burden of US residence for many (and perhaps most) US MNCs. It follows that the TCJA may not generate the types of benefits documented in the empirical literature on the territorial reforms carried out in the UK and Japan. Rather, there may well continue to be at a possibly increased level impetus for inversions, a competitive disadvantage for US MNCs in cross-border acquisitions, and a tendency for US MNCs to be disfavored as vehicles for portfolio investment. All of this assumes, of course, that the GILTI tax cannot be easily avoided, an issue addressed in the next section below.

#### 4) Ownership Distortions from the GILTI and FDII Provisions

As described above, the GILTI tax is a novel provision that imposes immediate US tax (without deferral) on the above-normal foreign returns of US MNCs. As such, it burdens US residence, and (as discussed above) may do so to greater extent than the repatriation tax regime that it replaces. It is important to note that, despite the use of the term “intangible” it has no formal connection to intellectual property – rather, foreign returns in excess of 10% of foreign tangible assets are presumed to result from intangibles. This presumptive element results in the GILTI tax having some commonalities with a formula apportionment (FA) system based on tangible assets.<sup>16</sup> In particular, the nature of the inefficiencies these taxes create is similar, involving ownership distortions. However, the incentives are somewhat different. An FA system with a formula based on tangible assets would encourage firms to acquire tangible assets in low-tax countries. The GILTI tax instead encourages US firms to acquire tangible assets in foreign countries, regardless of the local tax rate.

It is readily apparent from the definition of GILTI (Equation (3)) that the acquisition of tangible assets abroad creates a tax shield against the GILTI tax. To illustrate this more fully, consider the simple example depicted in Figure 1. Suppose that a US MNC has affiliates in two foreign jurisdictions – country F (which imposes a 25% tax rate) and a haven (with a zero tax rate). The F affiliate owns tangible assets with basis of \$1000 (i.e.  $A_F = \$1000$ ) and generates \$200 of income, all of which is shifted to the H affiliate (which owns no tangible assets). Applying the formula in Equation (3),  $GILTI = 200 - 0.1(1000) = \$100$ . Applying the formula in Equation (4), the GILTI tax liability =  $0.105(100) = \$10.50$ .

Now suppose that (as shown in Figure 2) the F affiliate acquires an additional \$1000 of tangible assets that generate routine returns, for instance by buying a factory or a chain of restaurants in F (that may or may not have any connection to the MNC’s primary line of business). Assume that these additional tangible assets generate income of \$66.67, net of depreciation deductions. Given the routine nature of the activity, it is assumed that this income cannot be shifted to the H affiliate.<sup>17</sup> Thus, the F affiliate pays tax of \$16.67 to the F government. Applying the

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<sup>16</sup> For instance, Avi Yonah, Clausing and Durst (2008) propose an FA system that would impute a fixed “normal” return to routine activities, and use a formula (based, in their proposal, on sales rather than tangible assets) to allocate the returns to nonroutine activities.

<sup>17</sup> Note that if the routine income could be shifted to H, then the purchase of these assets would be even more attractive to the US MNC.

formula in Equation (3),  $GILTI = 266.67 - 16.67 - 0.1(2000) = \$50$  (note that the equivalent of  $\tau_F$  in Equation (3) is not the tax rate in country F but rather a blended tax rate across F and H, which in this instance is about 6%). Applying the formula in Equation (4), the Section 78 gross-up is \$3.33 and the FTC is  $(0.8)(3.33) = \$2.67$ . Thus, the GILTI tax liability =  $0.105(66.67 + 3.33) - 2.67 = \$2.93$ . The US MNC's GILTI tax liability thus falls by \$7.57 when it buys the additional tangible assets in country F. This simple example illustrates how foreign tangible assets earning routine returns provide a tax shield against the GILTI tax.

Thus, one of the inefficiencies created by the GILTI tax is that US MNCs become tax-favored buyers of routine foreign tangible assets. If the US MNC were to pay the fair market value of the new assets (taking account of local taxes, depreciation deductions and other determinants of price), it would enjoy a surplus of \$7.57 per year in GILTI tax savings. A domestic F buyer (or a non-US MNC) of course would not enjoy the GILTI tax savings. Thus, the US MNC would be willing to bid more for these assets than would other potential buyers. For instance, assuming the \$7.57 GILTI tax savings are enjoyed in perpetuity and the discount rate is 5%, the US MNC would be willing to bid about an additional \$150 for the asset.<sup>18</sup> Thus, the US MNC will acquire for tax reasons assets that are less productive under its ownership than they would be under alternative ownership: the principle of capital ownership neutrality (CON) is clearly violated, as the GILTI tax affects which firms own which assets.

Deadweight losses from GILTI tax-induced changes in ownership are likely because there may be negative synergies between the US MNC's core business activities and the routine activities associated with the new assets. For example, a technology firm may have limited expertise in operating a chain of restaurants. Such losses would be minimized if sale-leaseback transactions were to be respected for GILTI tax purposes, so that US MNCs could buy foreign tangible assets and lease them back to the prior owners, while using the assets' basis in computing the GILTI tax. The TCJA provides that:<sup>19</sup>

“The Secretary shall issue such regulations or other guidance as the Secretary determines appropriate to prevent the avoidance of the purposes of this subsection, including regulations or other guidance which provide for the treatment of property if

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<sup>18</sup> A complication is that the benefit from the GILTI tax reduction depends on the basis, and hence on how much is paid. However, this does not change the basic point.

<sup>19</sup> § 951A(d)(4)

- (A) such property is transferred, or held, temporarily, or
- (B) the avoidance of the purposes of this paragraph is a factor in the transfer or holding of such property.”

However, it is not yet clear what restrictions will be placed on asset acquisition and transfer.

Given the novelty of the GILTI tax, there is of course no evidence on its effects. However, some idea of the sensitivity of the ownership patterns of routine assets to tax considerations can be gleaned from a study by Altshuler and Grubert (2010). They model the differences between the then-existing corporate tax system and a hypothetical alternative – an FA system with a formula based on tangible assets. Their model consists of two countries – one high-tax and the other low-tax – with two different types of capital – high-tech and routine – located in each country. An FA system renders strategic transfer pricing pointless. However, there is scope for changes in the ownership of capital across countries to affect tax liabilities. In particular, there is an incentive for MNCs to increase their in-house capital in the low-tax country by buying the assets of what would otherwise be arm’s-length suppliers.

Altshuler and Grubert (2010) use simulations to estimate these changes in the ownership of capital as a result of the FA system. When there is a 10 percentage point difference between the high-tax country and the low-tax country (which approximates the GILTI tax rate when there is no FTC, as in Figure 1), their simulations imply that routine in-house capital owned by the MNC in the low-tax country would increase by 23%. Indeed, they find that the efficiency costs of these ownership distortions essentially cancel out the efficiency gains from moving to an FA system, even when assuming very large resource costs of income shifting under the then-current system. While their results are derived from a different context, they suggest that ownership patterns of routine assets outside the US would be highly sensitive to the incentives created by the GILTI tax regime. Indeed, it should be remembered that under the GILTI regime, the purchase of tangible assets could be in any country (not only in low-tax countries, as under FA), and so might be expected to be even more responsive to taxes.

The FDII provision, which can be viewed as a domestic counterpart to the GILTI tax, provides a reduced tax rate for US firms’ export income. In particular, the component of income (above a presumed normal return on US tangible assets) derived from exports is taxed at 13.125% rather than the standard 21% rate. This has been viewed as a distinctive US version of the “patent box” (or “intellectual property (IP) box”) regimes adopted by a number of European countries and

China. The latter involve favorable treatment of income derived from patents, while the FDII does not depend in any direct way on the holding of IP, but rather solely on generating extra-normal returns relative to tangible assets. The existing evidence suggests that MNCs are highly responsive to tax differences in deciding which of their affiliates holds IP (e.g. Dischinger and Riedel, 2011; Karkinsky and Riedel, 2012; Alstadsæter et al., 2018). This suggests that countries can attract substantial IP holdings by applying lower tax rates, which perhaps explains the spread of this type of policy.

Unlike the existing patent box regimes, however, the FDII provision applies *only* to exports. As such, it potentially violates WTO rules and thus faces at best an uncertain future. Extensive analysis of its structure and consequences may thus represent misplaced effort. However, a brief description is presented here. Let  $Y_{US}$  be the pretax income of a US corporation, and let  $Y_{USE}$  be that corporation's export income (derived from property sold to a foreign buyer for a foreign use or services provided to anyone outside the US). Assume that the US corporation has basis of  $A_{US}$  in tangible assets located in the US. Then, the concept of FDII is defined as:

$$FDII = (Y_{US} - 0.1A_{US})\left(\frac{Y_{USE}}{Y_{US}}\right) \quad (7)$$

Thus, FDII is defined as a presumptive return to intangible assets held in the US, with a 10% normal return on tangible assets being allowed (as in the calculation of GILTI). The US corporation's US corporate tax, denoted  $T_{US}$ , is then defined as:

$$T_{US} = (0.13125)FDII + (0.21)(Y_{US} - FDII) \quad (8)$$

As the formula in Equation (7) indicates, lowering the amount of US tangible assets enables more of the firm's income to benefit from the FDII tax preference. To illustrate this, imagine a US firm with \$1000 of tangible assets located in the US. Suppose that these routine tangible assets generate (domestic) income of \$63.33. In addition, the firm generates \$200 of export income from intangible assets. Applying the formula in Equation (7), the firm's  $FDII = (263.33 - 0.1(1000))(200/263.33) = \$124$ . Suppose now that the firm sells its tangible assets to an unrelated party. Thus, it no longer generates the routine return of \$63.33. The firm's FDII is now \$200. Applying the formula in Equation (8), the firm's US tax liability falls by about \$10. Thus, divesting itself of US tangible assets enables more income to be taxed at the favorable FDII rate.

As in the GILTI example, if the firm were to sell its US tangible assets at fair market value, it would enjoy a surplus of about \$10 per year in FDII tax savings. For instance, assuming the \$10

FDII tax savings are enjoyed in perpetuity and the discount rate is 5%, the firm would find the tangible asset to be worth \$200 less than would a buyer that had no export income (or that earned only routine returns below 10%). Thus, the firm will sell for tax reasons tangible assets that are more productive under its ownership than they would be under alternative ownership: the principle of capital ownership neutrality (CON) is clearly violated, as the FDII tax affects which firms own which assets.

This ownership inefficiency is of course in addition to the obvious inefficiencies created by the international trade effects of the export subsidy. These inefficiencies could be mitigated by a generous treatment of reselling transactions (where US firms are able to pay the lower FDII tax rate on income generated by selling products to foreign intermediary entities that then sell the products to US customers). However, the precise contours of how the FDII provision will be implemented remain to be determined.

As with the GILTI provision, some insight into the consequences of the FDII tax preference can be gained from the simulations conducted by Altshuler and Grubert (2010). In particular, they consider a scenario in which an FA system is implemented with a formula that depends on tangible assets, where the tax rate difference between the two countries is 10 percentage points (which approximates the 7.875 percentage point advantage to FDII under the TCJA). In these circumstances, the MNC, which is based in the high-tax (home) country, has an incentive to divest itself of what would otherwise be in-house routine capital located in the high-tax country. The simulations of Altshuler and Grubert (2010) imply that the amount of routine capital owned by the MNC in the home country declines by 24%. This suggests that ownership patterns of routine assets in the US may be highly sensitive to the incentives created by the FDII regime.

## **5) Discussion**

Taken together, the GILTI and FDII provisions have been described as an attempt to induce US MNCs to locate IP in the US, rather than in foreign jurisdictions. It has been pointed out that the FDII rate roughly matches Ireland's statutory corporate tax rate of 12.5%. It should be remembered, however, that tax planning strategies using Irish affiliates that have been widely discussed in the literature (such the "Double Irish Dutch Sandwich" described, for instance, in Kleinbard (2011)) are ultimately designed to pay the tax rate applicable in Bermuda (i.e. zero),

rather than that in Ireland, on non-US profits.<sup>20</sup> Thus, it seems naïve to think that US MNCs were previously paying the Irish rate and would therefore be roughly indifferent to now paying the FDII rate. Rather, it appears that US MNCs are more likely to respond along other dimensions than relocating IP to the US (such as buying sufficient foreign tangible assets to avoid the GILTI tax, or various other potential strategies to plan around the GILTI regime).

In any event, the efficiency gains and losses from reallocating IP across affiliates are likely to be small, especially if formal ownership of IP can be assigned without shifting the location of actual R&D activity. The TCJA thus arguably attempts to address problems that have limited efficiency costs (such as locating IP in one affiliate rather than another) with the GILTI-FDII framework that is likely to give rise to potentially large efficiency costs (for instance, from ownership distortions. This is a cure that appears to be far worse than the disease.

To the extent that tax planning around the GILTI regime – whether through ownership changes or along other dimensions - is successful, the GILTI tax ceases to be binding. The tax burden of US residence discussed in Section 3 above would be reduced or eliminated, apart from the tax planning costs that firms incur. Of course, it would surely be better to achieve this outcome via repeal of the GILTI-FDII framework, rather than imposing on society the costs of tax planning and ownership inefficiencies.

On the other hand, to the extent that anti-avoidance rules are sufficiently effective that firms are unable to plan around the GILTI regime, a substantial new burden on US MNCs' foreign activity will be created, as argued in Section 3 above. The evidence regarding potential consequences for cross-border acquisitions and investment has already been outlined. New evidence is now emerging that provides insights into the wider social and human costs of attempts to constrain profit shifting. Until it was repealed by Congress in 1996 (albeit with a 10-year transition period), § 936 provided favorable treatment for the income reported by US firms in Puerto Rico and other US territories (“possessions”). It has been documented that this provision led to extensive profit shifting by US firms to their Puerto Rican affiliates (Grubert and Slemrod, 1998).

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<sup>20</sup> Recent changes to Irish tax law – especially with regard to the “management and control” criterion for corporate residence – imply that these strategies cannot be implemented in the ways that have been discussed in the prior literature. However, it is thought that alternative strategies yielding similar tax benefits have emerged.

Suarez Serrato (2018) uses establishment-level data to identify US firms that had Puerto Rican establishments (and hence, presumably, Puerto Rican affiliates that used the tax credits available through § 936), and to link these firms to their establishments located in the (mainland) US. He finds that the repeal of § 936 led to substantial declines in investment and employment in the (mainland) US operations of US firms that previously engaged in profit-shifting to Puerto Rico. These US firms tended to be concentrated in certain local regions and labor markets within the US, and Suarez Serrato (2018) uses a relatively new approach that emphasizes local labor markets and limited worker mobility (e.g. Kline and Moretti, 2014) to examine impacts on workers. He finds a long-term decline in employment and wage growth in areas that were more exposed to § 936-using firms. These results suggest that provisions intended to limit MNCs' tax planning (such as the GILTI tax and the BEAT) may have deeply harmful effects on local communities.

In summary, the GILTI-FDII framework introduced by the TCJA is difficult to justify. There is, in principle, an argument for a minimum tax regime on foreign income as a means of restraining base erosion and profit shifting (e.g. Altshuler and Grubert, 2013). However, any minimum tax regime involves a trade-off. Reducing outbound profit shifting will reduce firms' tax planning costs and increase revenue. However, it will also deter profit shifting from high-tax foreign countries to low-tax foreign countries, thereby reducing national welfare (e.g. Dharmapala, 2017). Moreover, a minimum tax regime will reduce both national and global welfare by imposing a home country tax burden on resident MNCs and thereby creating ownership distortions. It is telling that neither Japan nor the UK adopted a GILTI-type regime upon reforming their tax systems in 2009. This suggests that the costs of a minimum tax regime outweigh the benefits. It has not been explained why the cost-benefit calculation would be drastically different for the US.

Another prominent feature of the TCJA – the drastic reduction in the corporate tax rate – has significant implications for international taxation, although of course its ramifications are broader. The new statutory tax rate is particularly relevant for cross-border profit shifting. Dharmapala (2014) reports that the consensus of the recent literature using micro-level data is a semi-elasticity of reported income with respect to the tax rate differential across countries of 0.8.<sup>21</sup>

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<sup>21</sup> However, it should be noted that larger estimates of the magnitude of profit shifting have been found using aggregate country-level data (e.g. Clausing, 2016). The relatively small estimates have also been argued to be inconsistent with descriptive statistics on the fraction of MNC profit reported in tax haven jurisdictions (e.g. Gravelle, 2009). Dowd, Landefeld and Moore (2017) use US corporate tax return data for 2002-2010, with an empirical specification that allows for nonlinearities in the effect of the tax variable. Using this approach, they find a substantially larger semi-elasticity of reported profits with respect to the tax variable for zero-tax locations. However, their results would not

This entails that a 10 percentage point increase in the tax rate difference between an affiliate and its parent (for instance, because the tax rate in the affiliate's country falls from 35% to 25%) would increase the pretax income reported by the affiliate by 8% (for example, from \$100,000 to \$108,000). When combined with typical state corporate tax rates, the TCJA's rate moves the US to something roughly approximating the OECD average rate (about 24%). Given this, and the empirical evidence on the magnitude of profit shifting in the academic literature, revenue gains to the US from firms switching to inbound profit shifting are likely to be quite modest.

Moreover, there are significant questions about the sustainability of the TCJA's new 21% tax rate. One of the most common themes in arguments for tax reform over many years was the repeated invocation of the claim that the US had one of the highest corporate tax rate in the OECD, and in the world more generally. While this had, of course, an element of truth, it should also be remembered that - for reasons that have been widely debated but not fully resolved (e.g. Shaviro, 2018) - the US has a peculiar fiscal structure that does not include a value-added tax (VAT). The US is thus (both before and after the TCJA) a relatively low-tax country, but a relatively high *income* tax country (e.g. Dharmapala, 2018).

Comparisons with other OECD countries should take account of the absence in the US of an efficient business tax (the VAT) that can be used to make up revenue losses from reduced corporate income tax rates. It is possible that (conditional on the absence of VAT) the optimal US corporate income tax rate is indeed higher than that of other countries (at least if optimality is understood in a constrained sense, where governments are limited to incremental change to existing tax instruments). Arguably, the US cannot afford a corporate tax cut, especially of this magnitude, without introducing a VAT. Given that there is politically no current prospect of a US VAT, an expectation that the corporate tax rate will increase in the future is far from unreasonable. Such an expectation would moderate any response by firms to the TCJA's tax rate reduction, especially with regard to new corporate investment (and hence to long-run wage increases) and to changes to the structure of profit shifting.

The TCJA abounds in ironies. For many years, the longstanding debate on reforming the international aspects of the US tax system was characterized by a division between advocates of participation exemption (i.e. territorialism) and advocates of worldwide taxation (i.e. of repealing

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seem to imply that profit shifting into a country with a roughly average tax rate (such as the post-TCJA US) would be particularly large.

deferral). The TCJA arguably opts for a “worst of both worlds” approach that increases the tax burden on US residence, while also creating extensive tax planning opportunities. Ultimately, Congress may have occasion to ponder the old saying: “Legislate in haste, repent at leisure.” In any event, the tax reform process that gave rise to the TCJA provides, in many respects, an illustration of the definition of politics that is attributed (perhaps apocryphally) to Groucho Marx, as “the art of looking for trouble, finding it everywhere, diagnosing it incorrectly and applying the wrong remedies.”

## **6) Conclusion [to be written]**

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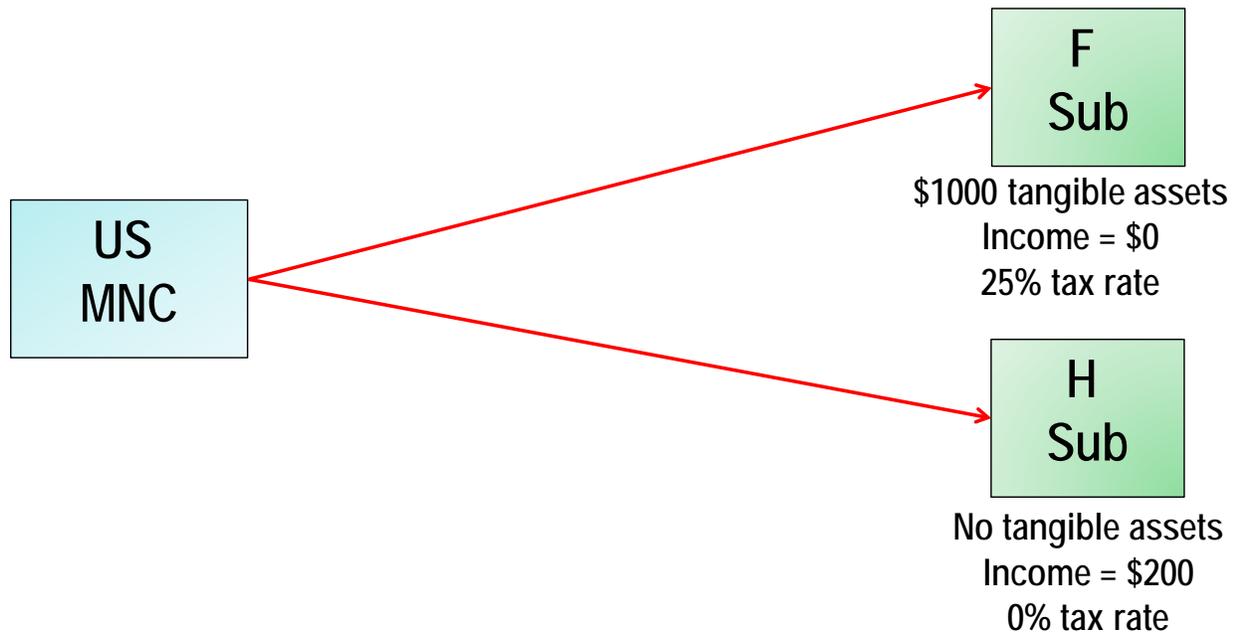
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**Figure 1: GILTI Tax**



**Figure 2: Ownership Distortions from the GILTI Tax**

