



The Mirage of Mobile Capital

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Abstract

Capital mobility has preoccupied scholars of international taxation for more than 30 years. According to prevailing narratives, when capital is highly mobile, countries compete to attract investment, creating a race to the bottom; capital mobility also enables multinational enterprises (MNEs) to shift profits. The appeal of these narratives has culminated in the OECD's proposed Global Minimum Tax, which declares the aim of substantially curtailing tax competition. This paper suggests, however, that the significance of mobile capital for international taxation may be largely an illusion.

Four deflationary arguments are advanced. First, the rising importance of intangibles for MNEs makes capital less, not more, mobile. Intangibles may seem mobile only because the rights to tax returns to them are arbitrarily assigned, but that is a fact about tax law itself, not an independent fact that tax policy responds to. Second, modelling profit shifting as capital mobility generates conceptual confusion and is often factually inaccurate. Third, empirical evidence for tax competition is very weak, and there are good explanations as to why. Fourth, the international provisions of the CIT generate externalities that likely dominate those from the setting of rates and domestic tax base. The lens of capital mobility sheds little light on such provisions, leaving the nature of their externalities and the scope of any cooperative surplus poorly understood.

Keywords: capital mobility, global minimum tax, intangible capital, profit-shifting, tax competition.

Introduction

For more than 30 years, economists and legal scholars studying international taxation have been preoccupied with one idea: *the mobility of capital*. Several familiar narratives reveal the nature of this preoccupation. In the first narrative, when capital is highly mobile, countries find themselves in the midst of global competition to attract productive investments. Higher taxes on capital (such as the corporate income tax or CIT) drive capital away, leading to less investment in the taxing country. This in turn may lower domestic productivity and wages, as well as discourage projects that would have brought superior technology. Lowering taxes to attract mobile capital, however, initiates a race to the bottom with countries that are similarly situated. While international coordination could stop such a race and allow more revenue to be raised, countries for a long time failed to strike mutually beneficial bargains to secure such coordination.

In another closely-related narrative, as a result of capital mobility, multinational enterprises (MNEs) find it increasingly easy to shift profits from high-tax to low- or zero-tax countries, even when they choose to invest in high-tax countries. On the one hand, low- or zero-tax countries, many of whom

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have come to be labeled “tax havens”, seem to mitigate the competition for real investment – if an MNE can invest in high-taxed countries but shield its profits from high taxes through profit shifting, then the high taxes imposed by those countries no longer drive productive capital away. On the other hand, the countries willing to play the role of tax havens directly cause high-tax countries’ revenue losses.

These popular intellectual narratives have both been fueled by and fed back into national and international debates about tax reform. For example, Pillar Two of the Organization for Economic Cooperation and Development’s (OECD) “Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy” was originally formulated as a proposal for the OECD advanced economies to incrementally strengthen anti-tax-avoidance rules applied to MNEs. In 2021, it came to be cast as a global effort to substantially curtail tax competition. For its academic proponents,¹ Pillar Two represents the culmination of many years of advocacy for global cooperation aimed at curtailing beggar-thy-neighbor policies adopted in response to capital mobility. For other commentators, the evaluation of Pillar Two also begins with assuming the existence of international corporate tax competition, the threat posed by tax havens, and ultimately, the centrality of capital mobility.²

This paper advances a contrary perspective and argues that the lack of conceptual rigor among scholars—legal scholars included but especially economists—has given rise to a pervasive intellectual mirage about capital mobility. The mirage leads us to see capital mobility, tax competition, and beggar-thy-neighbor policies where, upon both theoretical reflection and empirical examination, little of such phenomena can be expected to be, or actually are, found. It is important at least to examine the possibility of such an illusion, because it would have introduced substantial distortions to social scientific and normative discourses about international taxation. Especially given international taxation’s current political prominence, political exigencies will likely further magnify such distortions.

In the following, I lay out the case that the significance of capital mobility is a mirage in the study of international taxation in four steps. First (Section 1), I ask whether it makes sense to refer to intellectual property (IP) and knowledge intangibles that drive MNEs global expansion as mobile capital. The answer, I suggest, is No. IP and other knowledge intangibles are essentially characterized by non-rivalry. Because such assets can be simultaneously deployed in different parts of the world, the metaphors of being in one place as opposed to another, of motion, and consequently of competition, do not apply. In this regard, knowledge intangibles are very different from physical and financial capital, which are rival in use. Other intangibles, such as organizational and customer capital, may be immobile (in addition to being characterized by non-rival deployment) by virtue of their embodiment in employees and customers. All this implies that the rising importance of intangible capital in the world economy implies *less*, not more, capital mobility. Intangibles may seem mobile only because the rights to tax returns to them are often arbitrarily assigned (e.g., by reference to corporate residence), but that is a fact about tax law itself, not an independent fact that tax policy responds to.

Second (Section 2), I question whether economic theory has offered any coherent narrative about tax competition for profits. Models of such competition tend to begin by depicting profit shifting opportunities entailed by certain contingent tax rules adopted by countries from which profit is shifted. They then label shifted profit as a form of mobile capital and examine how countries may strategically set tax rates in response to profit shifting. No justification is given, however, for why the rules that allow profit shifting in the first place should be taken as given, and not as strategic choices. By arbitrarily

¹ See, e.g., Clausing et al 2021.

² See, e.g., Devereux 2023.

assuming such rules to be given, the models create an illusion of exogenously mobile capital, where “mobility” merely refers to the consequences of the unexamined tax rules. Moreover, economic models for tax competition for profit poorly fit countries commonly referred to as tax havens, and empirically unsupported and pejorative claims about such countries are used to motivate the application of the models. In reality, the externalities tax havens supposedly pose for non-haven countries can easily be recast as externalities that laws in the latter countries pose for the former countries. In any case, little of the policy problems posed by tax havens is associated with capital mobility *per se*.

Third, Section 3 highlights the weakness of empirical evidence for the very existence of international tax competition. There is wide consensus among economists that declining corporate tax rates around the world do *not* represent adequate evidence for tax competition for capital/profit, even though such declining rates have come to be accepted in policy discourse, unjustifiably, as the main evidence for tax competition. Extensive econometric studies have uncovered no evidence that countries compete over effective marginal tax rates to attract productive capital. While there is some evidence for competition in respect of statutory tax rates, its interpretation is problematic, even putting aside objections to the coherence of theories of tax competition for profits. In particular, few studies offer research design to rule out well-known alternative interpretations, such as that information flows (rather than the flow of real resources) account for strategic tax rate setting. The weak empirical evidence for tax competition, however, is quite consistent with well-known theories of MNEs that emphasize the dominance of horizontal foreign direct investment (FDI) structures and the importance of firm-specific, non-rival intangibles in the formation of MNEs.

Fourth, Section 4 argues there are many important ways in which CIT rules impose externalities on foreigners, even in the absence of mobile capital. Most importantly, the so-called traditional methods for relieving double taxation—exemption of foreign income and foreign tax credits (FTC)—can be (and historically have been) seen as subsidies for exports and outbound investments, potentially conferring positive benefits on other nations. Meanwhile, CIT rules for taxing inbound FDI may substantially resemble optimal tariffs and other instruments for taxing location-specific rent, and thereby export tax costs to foreigners. Adding the further premise of capital mobility sheds little light on these central aspects of international income taxation. That is, as a consequence of scholars’ obsession with capital mobility and the unjustified assumption that tax competition is the primary way countries impose externalities on one another in levying income taxes, we possess no better understanding of these institutions than 30 years ago. The power of the mirage of mobile capital, therefore, lies in no small part in how it conceals many of the more important ways in which countries cooperate (or fail to cooperate) in the realm of international income taxation.

To motivate these arguments, a few remarks about the existing economic literature on international income taxation at the start may help. Economists came to study international income taxation relatively late. In the first *Handbook of Public Economics* published in 1985, the chapter on “Tax Policy in Open Economies” touched on the taxation of capital movement only in a few paragraphs at the very end, as a special case of commodity taxation.³ But in the next treatment of this subject by Gordon and Hines in the *Handbook* published in 2002,⁴ income taxation of mobile capital became the central topic. As Gordon and Hines acknowledge, this was attributable to two factors: (1) OECD countries liberalized capital controls in the 1980s, and (2) important economic models about capital taxation within closed economies had previously been developed and awaited extension in the open economy

³ Dixit 1985.

⁴ Gordon and Hines 2002.

context. However, Gordon and Hines also acknowledge the complexity of interactions among very diverse tax systems in the international context and point out that economic theories had up to that point failed to rationalize many of the main features of international income taxation, such as positive source country taxation, unilateral double tax relief, and the design of bilateral tax treaties.⁵ In other words, although economists were theoretically predisposed to view the main subject of international taxation as the taxation of mobile capital, that theoretical lens did not initially penetrate the existing structure of international taxation.

In the next installment of the *Handbook*, however, Keen and Konrad 2013 took to apply models of tax competition, initially designed to study the impact of mobile capital, to analyze profit shifting by MNEs. This new focus tracked policy developments, but it begs the question: how does profit shifting arise, and why has it increased in prominence? One casual answer may be that capital has, somehow, become even more mobile in the 21st century than in the early 1990s. But might such an answer not merely express an unexamined assumption that international taxation *must* be about mobile capital? There is an obvious, alternative answer: profit shifting rose in prominence because of evolutions of international tax rules adopted by different countries—changes in precisely those structures of international taxation that economic theories had not yet been able to rationalize. In that case, we have a situation where an economic theory (interpreting problems of international taxation in terms of mobile capital) failed to explain one set of phenomena, but continues to be applied to theorize about a second set of phenomena that directly originate from the first. This should raise suspicions about the theory. This paper aims to demonstrate that such suspicion is correct: models of mobile capital fail to capture *both* the reality of MNE investments and the reality of profit shifting.

1. Are IP and Other Intangibles Mobile Capital?

What does “mobile capital” mean in scholarly analyses of international taxation? At first, one might think it refers to wealth deployed in the global stock, bond, and other financial markets. That is, “capital” comprises financial assets and claims, and the “mobility” of capital denotes the ability of investors to buy and sell such assets and claims on markets around the world. However, even though the impact of tax policies on global movements of financial (or “portfolio”) capital is an important topic in its own right,⁶ economic theories regarding international taxation are primarily concerned with capital understood in a different sense: “capital flows are taken to lead directly to changes in production.”⁷ If, for example, the ownership of a firm changes but nothing changes in the firm’s production, then notwithstanding financial assets passing among shareholders, there is no capital flow or “investment” into the firm.⁸ By contrast, “property, plant and equipment” and other tangible assets represent not merely financial claims, but productive inputs indispensable for the generation of actual goods and services.

While noting this difference between tangible capital goods and financial capital is important, the two also resemble each other in two fundamental ways that allow both to illustrate capital mobility. First, both are characterized by *rival use*. The owner of \$1 million of financial capital who uses that fund to buy one thing cannot use the same fund to buy other things at the same time. This is also true for

⁵ Cui 2022 highlights some of these unresolved puzzles of international income taxation.

⁶ See Gordon & Hines 2002, at 1956-1964; Keen & Konrad 2013, at 281-282; Gordon and Bovenberg 1996.

⁷ Keen & Konrad 2013 at 265.

⁸ When international capital flows do not increase real investment but only change ownership of existing investments, non-standard conclusions about optimal tax policy follow. See Becker & Fuest 2011.

tangible assets, which can be used only at one place at a time. The rival use of financial and tangible capital is why firms and countries must compete for them by offering attractive returns.

Second, financial capital is *mobile* when the owner of such capital can freely purchase goods and services in different parts of the world and when financial claims can easily be exchanged across borders. The supposition that physical capital used in production is internationally mobile is more of an idealization: it requires “some suspension of disbelief” to talk as though “factories and the like can be shifted from one country to another.”⁹ Yet this may be taken as a reasonable approximation: even though assets already installed in one place may be cumbersome to move, new physical assets can typically be manufactured and sold to users anywhere in the world. Therefore, whether any business can install new tangible assets in a particular place will depend on whether it can offer attractive returns to investors on global markets, who supply funds to businesses around the world looking similarly to install new tangible assets.

Implicit in this second similarity between tangible capital and financial capital is the idea of fungibility or homogeneity. Scholars of international taxation tend to speak as though all business firms, and even most countries in the world—insofar as the sizes of their economies are small relative to the total size of the world economy—face a supply of capital that has a price determined in the global capital market.¹⁰ The idea of a “world price” for capital assumes that businesses around the world—the “demand side” for capital—want the same thing. It is, of course, easy to think of financial capital as fungible. But tangible assets can also be thought of as fungible when they are readily produced. Both tangible and financial capital are thus *homogeneous*.¹¹

a. Non-rivalry and limited appropriability imply non-mobility

Despite these familiar examples of mobile capital, economists as well as policy commentators have increasingly used intellectual property (IP) rights—patents, copyrights, and trademarks—to back up their claims about the policy consequences of capital mobility.¹² IP is considered highly mobile, and the rising importance of IP in world economies in general and in the operation of MNEs, in particular, is taken to imply ever greater capital mobility. This, in turn, is often offered as a key reason why international tax rules from the 20th century may become obsolete.

The appeal of IP as an illustration of capital mobility is understandable. Unlike mere financial claims, IP rights are inputs into production. IP’s importance is thus most naturally captured by theories that model capital as a productive input. If IP is, in addition, mobile, then the notion of “capital” can be expanded to be “a metaphor for anything that is mobile internationally and generates real output where it is applied.”¹³ However, just as the resemblance between financial and tangible capital is only partial, IP

⁹ Keen & Konrad 2013 at 265.

¹⁰ Gordon & Hines 2002, at 1937-1941 (summarizing standard economic models of international taxation that assume that “the domestic interest rate is determined by the world capital market”); Devereux et al 2021, at 24, 36, 78; Auerbach, Devereux & Simpson 2010, at 856; Griffith, Hines & Sørensen, 2010, at 925.

¹¹ Keen & Konrad 2013 at 265 (in economic theory, “capital” is considered as a non-lumpy and homogenous good, with foreign- and domestically-owned variants indistinguishable). A useful analogy for physical capital is oil, which is a relatively homogeneous good that is traded on global markets and that can be shipped to most places of use.

¹² See De Mooij et al 2021; Dischinger and Riedel 2011; Karkinsky & Riedel 2012; Graetz & Doud 2013; Griffith et al 2014; Shaviro 2020.

¹³ Keen & Konrad at 265.

assets critically differ from both financial and tangible capital. In a fundamental sense, it does not make sense to say that IP is mobile.

This is because the idea of mobility, fundamentally, connotes both deployment across borders and rival use. While IP's cross-border deployment is evident and critical, it is often characterized precisely by non-rivalry. The same patented invention, copyrighted work, and trademark can be deployed in different places simultaneously. The consumption of a pharmaceutical product by one country's population does not preclude its consumption by the population in another. The use of one copyrighted software by one firm does not prevent its use by other firms. And the product quality associated with a trademark can be relied on by buyers simultaneously in all different places. The notion that an asset must be used in some place *instead of* others simply does not match IP's global deployment.¹⁴

Moreover, the non-rivalry of IP assets implies no "world price" for their productive service. What the owner of an IP asset charges one set of users (in one country) depends on what such users are willing to pay for the use, not what users elsewhere might be willing to pay. IP owners thus discriminate geographically, charging different prices in different places. Conversely, the services IP assets provide are also non-fungible: patents, copyrights, and trademarks are, by definition, unique. The non-rivalrous nature of IP, instead of its homogeneity, underlies its global deployment.

The metaphor of mobile capital is inaccurate when applied not just to patents, technical know-how, or other "knowledge capital" deployed by firms, but also to other important intangible assets used in production. In fact, the objections to this metaphor carry even greater force in connection with other types of intangibles. Besides assets generated by R&D, two broad types of intangibles that represent high shares of values of large successful firms today are "organizational capital" and "customer capital".¹⁵ Organizational capital, when it is understood as distinct from assets created by R&D and from "brand capital" mainly yielded by advertising expenses, denotes intangible capital that is firm-specific and embodied in "key labor inputs such as managers, engineers, sales people, and research employees."¹⁶ Organizational capital is estimated by some to represent 30% of all intangible assets in the United States,¹⁷ and 23%-27% of firm value on average among U.S. listed firms.¹⁸

Like patents and other IP, organizational capital can be non-rival and create increasing returns to scale in a firm, as the same organizational capital can be used as inputs to additional product lines, plants, etc. At the same time, organizational capital is often embodied in specific personnel, reflecting the limited appropriability of certain intangibles.¹⁹ In this sense, organizational capital can also be

¹⁴ Crouzet et al 2022 define a productive input as non-rival when it "can be applied when other factors of production are replicated." See also Jones 2019.

¹⁵ See Corrado, Hulten, and Sichel 2009, Crouzet and Eberly forthcoming, and Belo et al 2022 for important studies that quantify the significance of different types of intangibles in U.S. firms.

¹⁶ Eisfeldt & Papanikolaou 2013, 2014.

¹⁷ Corrado, Hulten, and Sichel 2009. Crouzet and Eberly forthcoming provide evidence that organizational capital is especially important for measuring innovation in the consumer sector.

¹⁸ Belo et al 2022 (capturing organizational capital through the value of "installed labor").

¹⁹ Eisfeldt and Papanikolaou 2014 argues that because essential talent is necessary for a firm to efficiently deploy organization capital, property rights over such capital are different from property rights over physical capital: the necessary key talent essentially owns the cash flows from intangible capital they generate. Therefore, organizational capital will not fully show up in a firm's book value or even market value. Recent theoretical

thought of as having a determinate location tied to the location of such personnel. Consequently, organizational capital is *non-mobile* in two different senses: first, it can be used as a productive input in different places at the same time (just like IP); second, the employee embodiment requirement makes it immobile, insofar as employee locations do not easily change.

It is worth noting here that some tax scholars have written about organizational capital as though it is mobile.²⁰ This may be due to the intuition that firms, as legal entities, must be the vessels of organizational capital, and the legal residence of firms (corporations) is highly mobile. It may also be because “synergies” between different parts of a firm used to be cited as illustrating organizational capital, and “synergies” may seem so amorphous that they must be attributed to legal fictions. However, a more compelling way of thinking is that “synergies” simply refer to the non-rival use of intangibles. And because some intangibles are embodied in (or can be exploited only through) specific individuals, and the appropriation of such intangibles requires complex contracts including ones relating to firm ownership, such intangibles become “organizational”. The ultimate vessel of the intangibles, however, comprises real persons, not legal fictions.

Yet another significant type of intangible asset, “brand capital” or “customer capital”, is also non-mobile in two senses.²¹ First, it can be non-rival. A firm’s brand (aside from the trademark itself) may be useful at different locations at the same time. Even the use of a customer list is non-rival in that it can market different products simultaneously. But a customer list is also immobile in an obvious sense: it is of value only in respect of the customers on the list—whose locations are relatively fixed.

Intangible assets represent up to 70% of the value of U.S. listed firms.²² It is plausible that this proportion is even higher among MNEs.²³ If intangibles are characterized by non-mobility, this implies that only a minority portion of MNE assets are mobile (physical and financial) capital. What, then, has given rise to the widespread claim (or implicit assumption) that IP and other intangible assets increase global capital mobility?

b. Tax-law-endogenous mobility

This claim likely rests mainly on the fact that IP rights may be assigned to legal entities formed anywhere. Yet it seems that such fact reflects no more than legal artifice. When lawyers in New York and Menlo Park write up documents that result in ownership of certain IP rights being assigned from a U.S. corporation to a Cayman entity, does anything actually move from the U.S. to the Caymans? The artificiality here arises not just from the awkwardness of talking about intangible things’ movement across space. Financial claims are also intangible, and one can argue that the same artifice is found when we speak of funds moving across borders. Yet, the mobility of financial capital ultimately connotes more than legal artifices: it is anchored in the fact that the purchasing power of a given amount of financial capital is rival in nature. What real mobility can be said to anchor the artificial mobility of IP rights?

explorations of the nature of intangibles emphasize not only their non-rivalry, but also the varying degrees of appropriability. See Crouzet et al 2022.

²⁰ See, e.g. Bankman et al 2019.

²¹ Gourio and Rudanko 2014. Belo et al 2022 estimate that brand capital accounts for 5-9% of U.S. firm value, and similar to the contribution of installed labor (i.e., organizational capital), this share has remained relatively constant over the last four decades.

²² Belo et al 2022.

²³ Antras and Yeaple 2014, at 65.

Indeed, even the mere fictional character of IP legal ownership probably is insufficient in itself to impart intuition about IP’s mobility. If IP assignment to legal entities had no tax consequences, its arbitrariness might be little known. What is important is that such assignment determines where the return to IP is taxed: IP assets seem mobile primarily for tax purposes. But obviously, the fact that the ownership of IP assets by legal entities is significant for tax law is not a fact exogenous to the tax law. It is an interesting question why the U.S. tax system treats a Bermudian IP-holding subsidiary of a U.S. MNE differently from a U.S. IP-holding subsidiary of the same MNE—what implicit tax policy can be attributed to this differential treatment. But the mere fact that IP rights can be assigned arbitrarily to any of a number of legal entities surely does not constitute an answer. To put it differently, U.S. tax law’s differential treatment of U.S. and Bermuda members of the same MNE (in terms of the consequences of IP holding) is often what *explains* why the IP ownership is assigned to the Bermuda entity; it is not a *response* to the fact that such assignment can be made.

The practice of referring to IP as an important (even central) case of mobile productive capital thus cannot withstand scrutiny. In fact, many economists are hesitant to talk about the location of IP, recognizing the ease and artificiality with which ownership of IP can be reallocated. I believe the arguments offered above, based on non-rivalry and limited appropriability regarding the non-mobility of intangibles are novel. But scholars have likely recognized other senses in which IP is immobile. Patents, for example, essentially store successful R&D services. The location of R&D services is far from mobile, particularly because innovation is characterized by substantial agglomeration effects.²⁴ This natural ambivalence about location assignments for patents gives little license to the metaphor of mobility. Yet, many scholars who register their ambivalence about patent location in scholarly analyses seem willing, in a non-scholarly setting, to embrace the metaphor of mobility. This is loose talk; it is a rhetorical device for framing policy issues, but it is fundamentally inaccurate.

Using the “mobility” of IP to “explain” the difficulty of taxing MNE profits associated with IP is not informative, given that IP is not, in any interesting sense, mobile. All that is said is some countries’ tax rules make it easy for profits associated with IP not to be taxed. The following section argues that such pseudo explanations are even more common in economic scholarship (and policy debates) about profit shifting.

2. What Is Tax Competition for Profit?

Consider two hypothetical invocations of capital mobility. First, in 1935, the Bahamas became a popular jurisdiction for wealthy Americans to set up personal holding companies in.²⁵ “Profit shifting” to the Bahamas on the part of individual American taxpayers shortly came to the attention of the Roosevelt administration. Legislative change was introduced in the Revenue Act of 1937 to require the undistributed profit of foreign personal holding companies to be included in their U.S. shareholders’ income,²⁶ anticipating wider practices later in the 20th century to tax MNE’s foreign subsidiary income.

Second, the United States adopted several tax rules in the 1990s that led to substantial increases in American MNEs’ profit shifting. The 1997 check-the-box regulations resulted in lower U.S.

²⁴ Moretti 2013.

²⁵ Thorndike 2021 (even so, at the time, the Canadian provinces of Newfoundland and Prince Edward Island were more popular personal holding company jurisdictions than the Bahamas.)

²⁶ Blakey and Blakey 1937.

tax collection from MNEs, but its main effect appears to be making it easier for U.S. MNEs to engage in tax planning with respect to foreign countries and reduce foreign tax payments.²⁷ Similarly, the 1995 regulations on cost sharing agreements substantially facilitated arrangements by U.S. MNEs to move profits from IP to low-tax jurisdictions. However, a subsequent tightening of the cost sharing rules appeared to have led to a tapering off of profit shifting.²⁸

a. Profit shifting without changes in capital mobility

Do we want to say, in respect of the first example, that profit shifting to the Bahamas before 1937 occurred due to capital mobility? In fact, capital mobility in the Americas was largely unchanged during the first decades of the 20th century.²⁹ The increased incidence of profit shifting to the Bahamas can be explained just by increases in top income tax rates in the U.S., and more wealthy taxpayers becoming aware of a loophole implicit in U.S. tax law from the beginning. To say that increased capital mobility explains profit shifting to the Bahamas would be like saying that liquor mobility increased when the United States enforced the Prohibition.³⁰ This fanciful usage would be both misleading and redundant: capital mobility need not be part of the narrative at all. Moreover, since there was no reported change in the law in the Bahamas corresponding to American taxpayers' new penchant for holding companies there, it is reasonable to say that the tax law in the United States generated a minor positive externality on the Bahamas: it creates American demand for Bahamian legal services, just as the Prohibition had revealed the Bahamas' utility for American bootleggers.

Similarly, in respect of changing profit shifting patterns among U.S. MNEs that followed the cost sharing and check-the-box regulations in the 1990s, would it be at all useful to invoke capital mobility? Again, the answer seems to be no. There was no clearly relevant change in capital mobility during the period. A simple statement of the facts would be that U.S. international tax rules changed, exerting substantial externalities on others.

These examples show that the phenomenon of MNE profit shifting can often be easily captured without reference to capital mobility. Indeed, the scholars just cited documenting these episodes in U.S. international taxation do not invoke capital mobility. Profit shifting is also often best explained by deliberate changes in the tax rules in the countries from which MNEs emanate. Nonetheless, many economists operate with background models that insist on portraying profit shifting as a form of capital mobility—as involving countries acting strategically to induce “capital” inflow and exerting externalities on others. One should ask: is such framing not superfluous, even misleading?

Consider a standard model of profit shifting based on commodity tax competition.³¹ In such competition, jurisdictions set tax rates with the view that shoppers from neighboring jurisdictions may cross borders to make purchases, who incur a transport cost but save on taxes. In this theoretical setting, jurisdictions with small populations are especially likely to set lower tax rates, as the revenue benefit of inflowing shoppers outweighs the revenue cost of reducing tax rates on purchases made by local consumers. One can analogize MNEs to cross-border shoppers: at a transaction cost, they shift profits to low-tax jurisdictions. Facing such MNEs, a “small” country—in the sense of hosting lower

²⁷ Blouin and Krull 2021.

²⁸ Guvenen et al 2022.

²⁹ Ghosh and Qureshi 2016.

³⁰ The Prohibition turned the Bahamas into a smuggling launch pad. Thorndike 2021.

³¹ See Keen and Konrad 2013, 274-7 (discussing the Kanbur-Keen model).

aggregate profits from real activities”— has incentives to lower tax rates, as it loses little revenue from its own small tax base but can gain revenue by attracting taxable profit from elsewhere.

Note, however, that any “mobility” of MNE profit depicted here may simply correspond to the ease with which, given a particular type of tax rules, the MNE’s profit can fall outside the tax base of a certain jurisdiction (and potentially into the base of another). No fact external to tax law needs to be conveyed. The analogy between the transaction costs of profit shifting and the transport cost of cross-border shopping is just that, a modeling analogy. Saying that “mobile profit” represents a different “type of mobile capital”³² may merely be reiterating the metaphor.

This suspicion is confirmed by more complex models of profit shifting, which similarly assume certain highly contingent international tax rules to conjure up the appearance of mobility. An important model developed in Devereux et al 2008,³³ for example, purports to analyze tax competition when countries operate with two tax instruments: one that determines the effective marginal tax rate (EMTR) on productive capital, and another, the statutory tax rate, which impacts both productive capital and “mobile profit”. In the model, whether a quantity of profit is reported by an MNE group in one country or another is a function of the transfer price of an intermediate good traded between MNE group members. The only constraint on how much this transfer price diverges from the true cost of the intermediate good is the expected penalty that may accrue to transfer mispricing.³⁴ Taking this penalty to be an exogenously given function of profit shifted, Devereux et al show how countries may use the two tax instruments strategically to attract shift-able profit.

But this model raises several questions. First, why isn’t the penalty on egregious transfer pricing itself a tax instrument that governments can choose to vary—why is it exogenously given? Is it plausible that a government must take the range of transfer pricing rules as fixed, but can only change other parts of the tax law such as statutory tax rates and the income tax base? Second, the model assumes that the CIT is only source-based, and the home country of an MNE cannot tax the income of a foreign subsidiary. The “mobile profit” metaphor, therefore, merely states a consequence of the exemption system when an MNE operates in two countries. Again, why is the exemption system more fixed than the choice of tax rates and the income tax base? Third, isn’t it transparent that besides the trade in an intermediate good, nothing mobile is actually needed?

The general point here is that many types of profit shifting opportunities are simply logical consequences of the tax rules of the countries from which the profit is shifted. It is not at all clear why one would be justified in taking such rules as given, treating the resulting MNE profit shifting response as an exogenous phenomenon of “mobile profit”, and *then* studying how nations may “respond” to this type of “capital mobility” by varying their tax rates, as though rate variations are the only policy instruments at governments’ disposal.³⁵

A further example illustrates the oddity of referring to profit shifting as exemplifying capital mobility. We normally think of capital controls as reducing capital mobility. But capital controls can strengthen incentives for transfer mispricing: businesses operating in the capital control jurisdiction will want to overstate the cost of imported inputs and understate the price of exported output so as to un-

³² *Id.*, et 283.

³³ I return to the important empirical analysis of tax competition offered in Devereux et al 2008 in Section 3.

³⁴ *Id.*, at 1214-5.

³⁵ In Section 2.c below, I consider two possible responses to this question.

trap profit or cash.³⁶ The metaphor of “mobile profit” thus means that capital controls may create its own kind of “capital mobility.” Clearly, this is a misuse of terms.

b. Who competes for shift-able profit, and how?

Confusing metaphors are not the only consequence of referring to profit shifting as capital movement. Such framing is also often factually inaccurate and normatively problematic.

In the models for tax competition for mobile profit referred to above, competing countries are motivated partially by the tax base they can attract from higher tax jurisdictions. Straightaway, such a depiction seems to be a bad fit for countries that are the destinations of profit shifting but that have no income tax at all, e.g., the Bahamas and Bermuda. Further, it also seems to poorly capture countries that have always had low-income tax rates, prior to the advent of easy profit shifting.³⁷ Hong Kong and Singapore, for example, have adopted low-income tax rates and open financial systems for a long time, even before they became prominent destinations for profit shifting. These examples also imply that in empirical studies of tax competition, many of the well-known “tax haven” jurisdictions would not provide the relevant identification variations. Consequently, whatever limited evidence of tax competition is observed through such studies may bear little relation to which countries are most likely offered as illustrations of participants in tax competition. A natural question, therefore, turns out to be rather difficult for theorists of tax competition to answer: which countries have been competing for mobile profits?³⁸

Discrepancies between theoretical predictions of which countries drive tax competition and real-world observations have been noted before. For example, in the Kanbur-Keen model, the more likely participants in tax competition are countries that are small in aggregate corporate profits, not necessarily in population or geographical size. Yet countries identified as “tax havens” in fact tend to be small in population and area.³⁹ Moreover, it has been pointed out that many low-tax countries are not tax havens. At the same time, the “quality of governance” appears to be an important predictor of haven status. If tax havens compete for shifted profits—as many economists explicitly postulate⁴⁰—they must also compete through instruments other than statutory tax rates.

Noticing these discrepancies, Keen and Konrad 2013 suggests that “tax havens compete with each other regarding the quality of their concealment or profit-shifting services and in how much they charge for them.” MNEs then determine “how much of their tax base to shift, bearing in mind ... taxes or ‘fees’ charged by the haven, the cost of setting up the appropriate international firm structure, and potentially some economic cost from adjustments required for the actual business operations.” Indeed,

³⁶ Indeed, businesses may engage in profit shifting away from a low-tax jurisdiction that imposes capital controls (Xing et al 2018).

³⁷ Of course, if the “mobility of profit”—the ease of profit shifting—is largely a function of the tax laws of various non-haven countries, dating changes in “capital mobility” will need to be an entirely different exercise from dating changes in capital controls and other economic institutions affecting financial and real capital flow.

³⁸ Devereux and Loretz 2013 highlight several studies in the 2000s that empirically identify small Eastern European countries that newly entered the EU in the 1990s as responsible for increased tax competition in Europe. Such countries are certainly not the focus of recent policy discussions about profit shifting. Notably, many of them, including Hungary, have relatively high tax-to-GDP ratios and rely on taxes other than the corporate income tax for revenue to a greater degree. See Blanchet et al 2022.

³⁹ Dharmapala and Hines 2009.

⁴⁰ Keen and Konrad 2013, 310-4, survey this literature. A recent example can be found in Johannesen 2022.

perhaps “[tax] havens [are] similar...to tax consultancy companies which offer legal means to reduce the tax burden, charge a fee for this service, and compete among themselves.”⁴¹

However, such claims about competition in the provision of tax avoidance services among haven countries not only are not supported by empirical evidence, but may in fact be false. The corporate, trust, and other administrative services that represent inputs from professionals in tax havens often play a marginal role in corporate tax planning. Most of the legal and accounting activities involved likely occur in non-haven countries. Many international tax practitioners can testify to this: in most tax planning involving what would be labeled profit shifting, the bills from service providers located in London, New York, or other non-haven jurisdictions dwarf charges from service providers in haven countries like the Caribbean Islands, or even Luxembourg, Hong Kong, and the Netherlands.⁴² It is simply not plausible that the cost of profit shifting depend in any significant way on charges from service providers in haven countries, let alone their governments.⁴³

The idea that tax haven countries go out of their way (“compete”) to induce profit shifting “into” them does not originate from economic theory. Nevertheless, it has gained a strong foothold among scholars theorizing about international taxation. While agreeing that the meaning of the term “tax haven” is elusive, Keen and Konrad 2013 suggests that in essence, tax havens are characterized by “low taxation that is not a reflection of high revenue, relative to needs, from other sources; the attraction of profit-shifting and other tax arbitrage activities more than real activity; and imperfect sharing of information.” When characterized this way, the authors suggest, the existence of tax havens supports the standard theories of tax competition for productive capital and profits.

Yet such support comes at the expense of significant distortions. Consider the idea of concealment services. Such services—based on bank secrecy or disguised beneficial ownership—are mostly not needed in MNE tax planning. The U.S. Internal Revenue Service (IRS), for instance, requires U.S. MNEs to report extensive information regarding their foreign subsidiaries: there is nothing about the tax haven subsidiaries of U.S. MNEs that the IRS cannot actually or potentially obtain directly from the MNEs themselves. Moreover, in most types of corporate tax planning, U.S. tax service providers will have far more information about their clients’ arrangements than their tax haven counterparts. If the U.S. government wants any taxpayer information, it should request them from tax planners on its own shores. If such information is protected by attorney-client privilege or other confidentiality requirement in non-haven countries, it is not clear why one should expect such protection to be waived in haven jurisdictions.⁴⁴ Finally, even if, counterfactually, the governments in haven countries are in significantly better positions to obtain MNE taxpayer information, it is also not transparent why sharing such

⁴¹ Id, at 312.

⁴² Much tax planning involving Luxembourg, for example, is delivered by professionals from the Netherlands. A similar example, though not involving tax havens, is the “China Business Trust” (de Haldevang 2019), which has far more to do with the quirks of U.S. tax law than Chinese law, and therefore is more likely to feature in U.S. rather than Chinese tax advisory service.

⁴³ A recent study of financial service provision booked through offshore financial centers (OFCs) provides suggestive evidence corroborating this common anecdotal observation. Miethe 2020 finds that, remarkably, the international bank sector in OFCs does not seem to react to severe hurricanes that adversely affect other economic activities on Caribbean islands. Moreover, the frequency of business formation in the OFCs is determined just as much by holidays in London, Tokyo, and New York as by the calendars in the OFCs.

⁴⁴ This example is based on the administrative powers of a government that imposes residence-based taxation, and therefore most pertinent to profit-shifting concerns of countries of MNE parent companies. Similar powers, however, could be wielded by source country governments sufficiently committed to anti-avoidance rules.

information with other countries should be viewed as the natural state of affairs, so that those governments that do not share information should be viewed as uncooperative. The U.S. government, for example, fails to gather or share many types of taxpayer information with other countries.⁴⁵

It is not my intent here to purvey the moral and political controversy surrounding the designation of countries as tax havens.⁴⁶ Instead, my argument is that such controversy has infected economic models of tax competition, in the sense that accepting the pejorative labelling of certain countries as tax havens (and thus ignoring the controversiality of such labelling) may have become a precondition to finding such models plausible. There is a straightforward, two-step test for disinfecting economic models of such controversy. First, in modelling the tax competition for profit, consider why one should take the rules that enable profit shifting as given, or as choices prior to countries' strategic interactions (instead of as strategic choices themselves). Second, given that externalities are always reciprocal, consider whether the causal origin of the externalities lies in non-haven countries.

c. Which rules should be taken as given in modeling competition for profit?

A few years ago, the American legal scholar Steven Dean made the trenchant remark: "If you think the Bahamas has ruined your global tax system, you have a pretty terrible global tax system."⁴⁷ The critique this Section has offered of economic models of tax competition for corporate profits makes essentially the same point.⁴⁸ I now briefly consider two potential replies to this critique.

First, it may be objected that in modelling tax competition, *some* assumptions about the CIT have to be made. What features of the CIT can be safely regarded as given in such a model, and which features must be viewed as strategic? This, I believe, is indeed an important question for the theorists of tax competition themselves to reflect on: it is genuinely hard to identify any CIT rules that (i) may have implications for profit shifting and (ii) are not policy choices under the CIT. Certainly, whether a country adopts an exemption or worldwide system, whether it allows foreign tax credits and what type, whether it has anti-deferral rules and how strong they are, how it taxes different types of income, with whom it enters into tax treaties, etc. are all policy decisions as variable as tax rates themselves. The arm's length standard in transfer pricing is itself far from immutable. Moreover, as Section 4 argues, many of these rules intentionally exert externalities on other countries. Conversely, it is odd to think of tax rates or the delineation of the domestic tax base (e.g., the method of depreciation) as the most important source of the CIT's international externality.

Second, it may be claimed that the majority of the international tax rules that countries have adopted predate capital mobility, or the ascent of intangibles, or the digitization of the economy, or some other new feature of globalization. In other words, in some broad sense, all or most profit shifting is the consequence of outdated and mal-adapted tax rules. Surely, it may be suggested, *some* of those rules can be taken as given, setting the stage for profit shifting and the competition for shift-able profit. Objecting to the choice of specific rules is simply nit-picking.

⁴⁵ Noked and Marcone 2022.

⁴⁶ See Dean and Waris 2021.

⁴⁷ Thorndike 2021. Dean and Waris 2021 further elaborates this argument by reference to the "Liberia" problem (an episode in which the European Union blamed war-torn Liberia for tax avoidance by Europeans).

⁴⁸ See also Dharmapala 2021 (arguing that unilateral instruments are available for dealing with most types of profit shifting).

Such a claim is unlikely to be helpful for any specific model of tax competition. Even so, it has become increasingly popular for commentators on international taxation to refer to some mythical past when international tax rules mostly worked. However, such assertions are generally rhetorical and not backed by historical evidence. Actual historical scholarship on international taxation points in the opposite direction.⁴⁹ For instance, the work of the League of Nations on double taxation in the 1920s took place when countries were beginning to impose income taxes, and when they had little information regarding how income tax rules would affect cross border transactions.⁵⁰ This state of affairs persisted even until the early 1940s.⁵¹ If the notion of capital mobility can only be propped up by invoking a mythical past of international taxation, then it is fragile indeed, as such mythical past is inconsistent with existing historical scholarship.

3. Why Is Evidence for Tax Competition So Weak?

Many commentators on international taxation take the existence of tax competition for granted.⁵² Increasingly, the existence and severity of international tax competition are accepted even among economists. However, credible econometric evidence for corporate tax competition at the national level is quite weak.⁵³ Recent scholarship has tended to loosen the definition of tax competition in order to classify evidence as counting in favor of the existence of international tax competition. However, this choice comes at the expense of one's ability to draw policy conclusions from such evidence.

a. Spatial-econometric evidence for tax competition

Currently, the most credible evidence for international tax competition comes from studies that test whether countries engage in strategic interactions in tax rate setting.⁵⁴ Specifically, theoretical models of tax competition predict that a country engaged in tax competition would set its tax rate lower (higher) if its competitors lowered (raise) their tax rates. A positive correlation among changes in observed tax rates would therefore constitute evidence for such prediction, although spatial econometric techniques are required to correctly identify such correlations.⁵⁵ A notable pattern from this recent literature is that in the most carefully designed studies, one finds at best only evidence for strategic interactions in respect of statutory corporate tax rates. Generally, the studies have found no evidence for strategic interactions in respect of effective marginal tax rates (EMTR).⁵⁶

⁴⁹ I discuss this scholarship in separate work ("The State of Nature in International Taxation").

⁵⁰ Jogarajan 2018.

⁵¹ Teo 2023.

⁵² Within legal scholarship, this is so even when scholars offer divergent normative appraisals of tax competition's implications. Compare, for instance, Avi-Yonah 2000, Dagan 2018, Elkins 2016 and Schoen 2019.

⁵³ The literature for subnational tax competition evolved separately. Agrawal et al 2022 offers a recent review.

⁵⁴ Devereux and Loretz 2013 discusses problems with an earlier body of scholarship on tax competition that does not directly identify strategic interactions among governments. Heimberger 2021 offers a briefer discussion and mainly reviews "second generation" studies of tax competition that do aim to identify strategic interactions. Leibrecht and Hochgatterer 2012 similarly comments on the transition from "first" to "second generation" studies.

⁵⁵ The econometric techniques for identifying such "positively-sloped reaction functions" emerged in the 1990s in the study of political yardstick competitions among subnational governments. However, it was not until the 2000s that they were applied in the international context.

⁵⁶ See the literature review in Devereux and Loretz 2013; Overesch and Rincke 2011 also conclude that evidence for competition over average effective tax rates is weak.

The null finding regarding tax competition in respect of EMTR is significant, because in both theory and policy discourse, tax competition is commonly understood as about attracting mobile productive capital, and such capital should be responsive to marginal tax rates. There are no generally agreed-upon explanations for this null finding: I will discuss some potential explanations below. More often, scholars have chosen to emphasize that the evidence for strategic interaction in statutory tax rate setting already provides ample support for the existence for tax competition. In particular, they conclude that countries clearly compete “for corporate profit.”

As Section 2 above argued, it is difficult to construct a coherent theoretical narrative according to which countries compete for corporate profit, and even harder to apply such a narrative to the real world. Remarkably, even putting this difficulty aside, it turns out that the econometric evidence for tax competition in respect of statutory tax rates still faces significant challenges.

First, ironically, the literature that generated the econometric techniques for testing strategic rate setting already suggests important alternative explanations for observed strategic interactions.⁵⁷ For example, governments may mimic one another as a consequence of political yardstick competition, in which voters in one jurisdiction take the actions of peer jurisdictions into account in assessing the performance of their own politicians. Alternatively, governments may copy one another in following a common intellectual trend. In a helpful term used in this literature, tax competition may occur because of *information spillovers*, and not to attract real resource flows.⁵⁸ Any appeal to the evidence of strategic rate setting to support a story about international tax competition in the way it is conventionally understood must rule out these alternative explanations.

Consider, for instance, the recent “proliferation” of digital services taxes (DSTs), first in Europe and then elsewhere in the world. It is conceivable that positive reaction functions can capture the spread of DSTs in empirical studies of strategic rate setting. But there is no clear sense that countries compete for mobile bases in adopting DSTs. Instead, this can be seen as just an example of strategic interactions based on the spread of ideas and not resource flows.⁵⁹ In earlier decades, the value added tax also spread across the world—indeed during the same period as CIT rates began to decline—and such spread also cannot be explained by resource flows, even if they are captured by positive reaction functions in tax rate setting.

Few studies of strategic corporate tax rate setting consider such alternative explanations.⁶⁰ A notable exception is Devereux et al 2008, which makes ruling out such explanations a central part of its research design. Studying 21 OECD countries over the period 1982-1999, the authors find that countries engaged in strategic rate setting in respect of statutory corporate tax rates, but only after countries removed capital controls. They argue that there is no reason why strategic rate setting based on information spillovers would not have occurred when capital control was in place, and therefore the

⁵⁷ See Agrawal et al 2022, Sections 2 and 7, and citations therein.

⁵⁸ Even in terms of competitions involving real resource flows, explanations other than tax competition are also possible: jurisdictions may, for instance, engage in expenditure competition (aiming to attract mobile resources through spending), which in turn may result in tax rates mimicking one another’s.

⁵⁹ Cui 2019a and 2019b argue that DSTs target a new form of location specific rent from user participation on multi-sided platforms.

⁶⁰ Indeed, in their survey of the tax competition literature, Devereux and Loretz 2013 specially broaden the definition of tax competition to include strategic interactions based on information spillovers.

relevance of capital controls helps to rule out explanations in terms of information spillovers. This key argument in their paper, however, has largely been neglected in the subsequent literature.⁶¹ The few studies of tax competition among developing countries, for example, fail to control for the fact that many such countries still have significant capital control regimes in place.⁶² This generates tensions with Devereux et al 2008 in two ways. First, it suggests, oddly, an agnosticism about whether capital controls matter to the mobility of productive capital or to the “mobility” of profits.⁶³ Second, it entirely ignores the task of ruling out alternative explanations of strategic interactions.

Second, consistent findings for statutory tax rate competition are simply hard to come by. For example, Azemar et al 2020 offered a careful study of corporate tax competition of a large set of countries during the 1995-2014 period, finding *no* strategic tax rate setting (for statutory corporate tax rates) among EU countries after the 2000s, despite the fact that, on average, corporate tax rates continued to decline during this period. The authors explain the difference between their findings and Devereux et al 2008’s in terms of the econometric challenge of separating strategic interactions from time trends during this later period.⁶⁴ Yet at the same time, the study provides strong evidence that, during this period, tax rate setting was responsive to (out-of-trend) economic growth in competitor countries. This finding in itself raises the question of whether previous studies purportedly finding strategic tax rate setting suffered from omitted variable bias.

There is arguably a third difficulty facing evidence for the strategic setting of statutory tax rates. A positively-sloped reaction function should be detected even when countries raise tax rates. For example, if some countries, as a matter of exogenous shocks, raise their corporate tax rates, tax competition would also predict the competitor countries to increase their tax rates. Exogenous shocks that lead to increased CIT rates are not hard to find (e.g., as a result of demographic changes, changes in political parties, etc.). If some countries increase their CIT rates, but other countries do *not* respond by increasing such tax rates, this should count as evidence against tax competition. However, current policy and scholarly discourses seem only to treat downward trends of corporate tax rates as an indication of tax competition, but inconsistently do not treat the lack of upward trends as contrary evidence.

The most important point, however, is that there is general consensus within the public economic literature that the trend of declining statutory corporate tax rates in Europe or elsewhere in the world does *not* represent adequate evidence for tax competition. This consensus is at odds with prevalent policy discourse.⁶⁵ International tax competition is *not* a self-evident phenomenon, if it is difficult to support in theory and garners weak empirical evidence from those who carefully study it.

⁶¹ In Heimberger 2021’s meta-study, fewer than 15% of the empirical analyses surveyed included interactive terms between a control variable and the spatial lag variable, which is the general method used by Devereux et al 2008 to detect the effect of capital controls (Azemar et al 2020 and Overesch and Rincke 2011 are two other studies that adopted this method).

⁶² See, e.g. Crivelli et al 2016. Conversely, one study often cited as providing evidence for tax competition in Europe, Overesch and Rincke 2011, failed to find the effect of capital controls, thus contradicting Devereux et al 2008’s findings. But the authors offer no discussion of why information spillovers cannot explain their evidence of statutory rate competition.

⁶³ See discussion in Section 2.b above

⁶⁴ However, Overesch and Rincke 2011 were able to separate tax competition effects and time trends despite the fact that the period they study (1983-2006) overlaps with Azemar et al 2020.

⁶⁵ An example of a recent policy discussion that equates declining statutory corporate tax rates with tax competition is Edelberg et al 2022.

So far, I have argued that both the theory and empirical evidence for tax competition *for profit* are problematic. I turn next to what theories might be consistent with the dearth of evidence for tax competition for productive capital.

b. Explanations of null findings on the existence of tax competition

One explanation that has been offered for the finding that countries do not compete in respect of EMTRs is that small open economies take the world price of capital as given and therefore do not engage in strategic tax rate setting.⁶⁶ In fact, some well-known theories long predicted that small open economies set the tax on capital to zero regardless of what others do.⁶⁷ However, it is also generally recognized that such prediction contradicts reality: many open economies set positive tax rates on capital substantially above zero.⁶⁸ The “small open economy” reasoning, therefore, cannot explain the absence of strategic interactions in setting positive tax rates.

Theorists who assume the reality of tax competition have also suggested ways in which such competition can be mitigated if countries practice some form of discriminatory taxation.⁶⁹ For example, preferential tax regimes with low effective tax rates may be offered for “more mobile” types of capital, while a regular tax regime with higher rates is applied to “less mobile” capital. Countries can also achieve such discriminatory taxation by varying the strength of its anti-avoidance rules, allowing “more mobile” capital to shift more profits to tax havens. If cross-country data does not capture such discriminatory preferential taxation but only the regular tax regimes, one may not be able to identify tax competition empirically. Such theories, however, are generally quite vague about what the “more mobile” types of capital consist of.⁷⁰ They are therefore unlikely to be helpful in rationalizing evidence against the existence of tax competition.

More promisingly, economists have appealed to location-specific rent (LSR) to explain why countries set positive tax rates (including EMTR). If some profit can only be earned in a particular jurisdiction, the government in that jurisdiction can tax that profit without fear of reducing the return to capital below the world price. But public economists’ conceptions of how and when LSR may arise appear to be limited. Some point to agglomeration economies as a source of LSR. Others consider non-renewable resources as generating LSR. All these intuitions, however, suggest that the existence of LSR is the exception and not the rule: we should not expect most countries to have LSRs as the main corporate tax base.⁷¹ Although among trade economists, LSR is taken to be much more prevalent as a consequence of the structure of particular product markets, the economic analysis of international

⁶⁶ Devereux and Loretz 2013.

⁶⁷ In the theory laid out in Devereux et al 2008, small open economies set positive EMTRs *only* because they are simultaneously competing for shift-able profit through statutory tax rates.

⁶⁸ Devereux and Loretz 2013; Gordon and Hines 2002.

⁶⁹ See Keen and Konrad 2013, pp 304-6 and 312-3 for a review of this literature.

⁷⁰ Keen 2001 suggests that portfolio capital is mobile while FDI is less mobile. However, this does not address the issue of tax competition for MNE investment, the main focus of the tax competition literature. Hong and Smart 2010 suggests that MNEs are mobile while purely domestic corporations are immobile, but it is unclear how purely domestic corporations would be affected by tax competition. In general, it would be tautological to say that countries offer preferential treatment to profit that can be shifted, if the preferential treatment simply means providing opportunities of profit shifting.

⁷¹ Similarly, even in the absence of LSR, trade costs may imply that larger market countries are less subject to the pressure of tax competition. This would not explain why non-large countries still impose positive taxes on capital.

taxation has not generally embraced this approach, perhaps because the corporate income tax does not seem targeted at particular product markets.⁷²

There is a source of LSR for MNEs, however, that is surprisingly little recognized: non-rival intangible assets that are simultaneously deployed in different parts of the world *by definition* generate LSR. When the same intangible assets can serve as input to production at physical establishments in different places, they enable the economy of scale/scope and necessarily generate rent. At the same time, the rent is location-specific in that it is specific to where the intangible is used as an input. To put it differently: when intangibles are complementary to other input, the rent they generate can be located by the location of such other input.⁷³ Thus as long as MNEs' global operations are significantly driven by the deployment of non-rival intangibles—if, that is, capital and labor inputs used by MNEs are often mixed with such intangibles—taxing the productive capital MNEs deploy should be feasible without too much fear of tax competition. This point, of course, is directly related to the argument in Section 1 that the notion of movement is difficult to apply to non-rival inputs to production. And it is worth noting that mainstream theories of multinational firms have increasingly made non-rival intangible assets a central component of their models.⁷⁴ Empirical evidence for such theories is also rapidly gathering.⁷⁵

Finally, both the theory of and empirical studies of MNEs point to fundamental “immobile” aspects of MNE operations. It has long been observed that horizontal FDI dominates among MNEs: that is, MNE structures are most often octopus-like, with each “of the octopus’s arms [doing] essentially the same thing, [and] its head coordinating the movements...The MNE’s various affiliates replicate each other with guidance from the home headquarters.”⁷⁶ This phenomenon can be rationalized in several ways, even apart from firm-specific, non-rival assets. For example, FDI can be thought of as a substitute for pure export of goods: goods may be produced in different countries, instead of produced in a single country and exported, because of transport costs and tariffs.⁷⁷ This predicts that production will be replicated through foreign affiliates located where goods are eventually sold. In the case of the provision of non-storable services, proximity to the service recipient also necessitates horizontal FDI structures.⁷⁸ Because of such requirements of establishing operations in ultimate market countries, the structure of MNEs possesses intrinsic “destination-like” features. When MNEs expand, they mainly move closer to customers. Many scholars of international taxation have argued for destination-based taxation of MNE profits as a solution to the problem of tax competition.⁷⁹ But if MNE investments intrinsically display

⁷² Cui 2022 discusses this contrast.

⁷³ Cui 2019a and 2019b.

⁷⁴ See the literature review by Antras and Yeaple 2014, which incorporates firm-specific headquarter services into models of both horizontal and vertical FDI structures. See also James R. Markusen’s work on knowledge capital cited in Davies and Markusen 2021.

⁷⁵ See, e.g. Arkolakis et al 2018 and Alviarez et al 2023.

⁷⁶ Davies and Markusen 2021, at 3445. This is contrasted with the snake-like structure of vertical FDI, where “each part of the snake performs a separate activity, all of which adds up to a well-functioning whole. A firm may organize itself so that different affiliates perform different activities that combine together to produce a finished output.” Id.

⁷⁷ See Antras and Yeaples 2014, Section 4 (The Proximity-Concentration Hypothesis).

⁷⁸ Davies and Markusen 2021 (at 3447) thus note that “in addition to manufacturing industries such as autos, cement and chemicals, many service firms and industries closely fit the horizontal structure. Fast food restaurants, hotels, accounting, and consulting and legal services all perform roughly the same activities in many countries and within countries.”

⁷⁹ Auerbach et al 2010, Avi-Yonah et al 2009, Devereux et al 2021.

destination-like features, the question should be raised why competition for the location of productive capital would emerge in the first place.⁸⁰

Of course, tax-induced FDI does exist, whether due to export platforms (a type of horizontal FDI) or offshoring (in vertical FDI). But as long as MNE structures are (i) historically (i.e. throughout the 20th century) predominantly driven by the need for proximity to ultimate markets, and (ii) increasingly characterized by the deployment of non-rival intangibles, the observed weakness of tax competition for productive capital is not hard to explain. *Profit shifting* may be a concern for some countries, but as argued in Section 2 and further explained in the next section, casting profit shifting as a form of tax competition generates few insights.

4. The CIT's More Important Externalities

A country's CIT can generate externalities for other countries in a wide range of ways. On one end of the spectrum, it is plausible to argue—and it was indeed so argued in one of the most widely-discussed scholarly assessments of the CIT just a little over a decade ago—that if a country has the option of taxing resident individuals on income received, the chief rationale for retaining a business level tax such as the CIT at all is to collect the location specific rents earned by domestic businesses that accrue to non-residents.⁸¹ That is, the reason for a corporation tax's very existence is the externality it imposes on foreigners.⁸² Towards the other end of the spectrum, the CIT's externalities may work through channels rarely recognized, the welfare consequences of which may moreover be assessed as secondary even when considered. For example, Flach et al 2021 showed that the lowering of the CIT rate in an import country decreases the variety of products that foreign exporters sell to the country, possibly because tax cuts generate greater market competition in the import country and force the foreign exporter to concentrate on more profitable products. This, in turn, could lead to lower market entry in the exporting country (because of lower expected profits from exports), reducing competition thereby and causing a welfare loss there.

The scholarly literature on international tax competition, in effect, postulates that despite the multitude of externalities of the CIT, the *main* international externality of the CIT works through the channel of mobile capital: the tax rate set by one country affects how much homogenous capital flows to other countries—and in turn how much tax revenue can be raised from such capital in other

⁸⁰ Davies and Markusen 2021 argue that non-rival intangibles further accentuate the benefit of replication through horizontal FDI (“intangibles, particularly those that are knowledge-based...possess a ‘joint’ or non-rivalled nature that is not found in physical capital such as plant, equipment, and property. A knowledge-based asset...can be used in multiple locations without reducing its value in any one location. [They] create firm-level scale economies as opposed to or in addition to any plant-level economies of scale. These firm-level scale economies give the multinational a powerful tool and incentive for adding additional plants or offices abroad at low additional cost, thereby giving the multi-plant multinational a competitive advantage over local single-plant firms.” at 3470)

⁸¹ Auerbach et al 2010, at 885 and 889. This was a critical point in evaluating the relative merits of source- versus destination-based cash flow taxes.

⁸² This observation is not merely theoretical. In the United States, the majority of business income is already taxed only at the owner level (because of the prevalence of pass-through entities), and taxation of individual shareholders of publicly traded companies on a mark-to-market basis is infeasible only for political (including purportedly constitutional) reasons. Even if one were to recognize that the urgency of corporate-level taxation in the U.S. partly arises from bi-partisan enthusiasm for expanding tax-sheltered accounts for the rich (Hemel 2022, Clausing et al 2021), one need not be compelled to then embrace the view that the real threat to U.S. public finance is other countries' corporate tax rates.

countries. This should be read as a falsifiable empirical claim. If, say, no evidence for tax competition in respect of EMTR emerges (which indeed is the case), then one should probably conclude that while theoretically possible, the force exerted by homogenous capital is not inexorable on the international stage.

But if one stopped here, one could be seriously understating the CIT's externalities. Most importantly, this is because the international provisions of most developed countries' CIT rules are deliberately designed to exert externalities. These provisions are independent of how the countries vary their domestic tax rates and bases. Their impacts also work through both mobile capital and other channels. The existence and significance of externalities introduced by the CIT's international provisions seem highly plausible. But their nature and magnitude are still poorly understood.

a. Foreign income exemption and foreign tax credits

Take, for example, the "territorial" or "exemption" approach to taxing MNE profit whereby the country in which an MNE's headquarter (or ultimate parent company) is located does not tax any business profit earned by the MNE's foreign subsidiaries and branches, whether currently earned, when repatriated as dividends, or reflected in capital gains realized upon the disposition of foreign business assets or shares of foreign subsidiaries. There should be no question that the exemption system creates international externalities. In fact, models of source-country tax competition need to assume that there is no residence-country taxation of foreign income.⁸³ The prevalence of the exemption approach is what props up this assumption. In other words, a country's adoption of the exemption system is what partly allows itself and other countries to be subject to source-country tax competition.

But contributing to the conditions of source-country tax competition is probably not the most salient externality of the exemption system. Almost since the beginning of CIT, it has been recognized that (for mobile financial or physical capital) exemption increases the incentives for deployment outside the headquarter country if the tax rate is lower elsewhere.⁸⁴ That is, no greater capital mobility than was already present at the beginning of the 20th century is needed for the exemption of foreign income to be identified as providing favorable treatment. In addition, during the income tax's first decades of implementation, limited enforcement of the tax in respect of foreign income also resulted in de facto exemption of such income. Tax evasion and tax avoidance opportunities consequently enabled by investments abroad were recognized early on.⁸⁵ Through its impact on both real investment and on profit shifting, the exemption approach affects both the country adopting it and other countries. It is quite unlikely that any country embracing the exemption approach in the past half century was unaware of such impact—that the consequences of the approach were inadvertent.⁸⁶

Despite the salience of the exemption approach's externalities, what drives its adoption remains unclear. Why do so many countries subsidize their MNEs' foreign investment (and permit profit shifting)

⁸³ Bucovetsky and Wilson 1991; Becker and Fuest 2011. Such models, in effect, assume a broader range of exemptions of foreign income than dividends, capital gains, and business profits, including income such as interest and royalties.

⁸⁴ Graetz and O'Hear 1997 at 1064-5, 1104.

⁸⁵ *Id.*, at 1039 and 1099.

⁸⁶ Langenmayr and Liu 2023 show that the U.K.'s switch to an exemption system from a (watered-down) worldwide system in 2009 led U.K.-based MNEs to shift more profit to low-tax jurisdictions. This is a consequence that tax policymakers could have predicted almost a hundred years earlier.

by exempting the income from such investments? The best-known traditional justification for exemption is that it is one method of avoiding double taxation. Yet this invites more questions than it provides answers to. For example, why do countries unilaterally offer to solve a problem that arises from interactions among different tax systems, especially when such solution is costly to themselves?

Similarly, few regard the rationalization of the exemption approach in terms of “capital import neutrality” as compelling. Desai and Hines 2003 argue in favor of exemption by assuming that (1) the home (headquarter) country’s capital stock is fixed, such that any outflow of financial capital owned by home country firms would simply be replaced by foreigners taking over ownership of home country capital assets; and (2) the capital stock in other countries is also (largely) fixed, so that the only (or main) investment margin affected by CIT rules is who obtains ownership of the (fixed) capital stock. Both assumptions are obviously debatable. One might also try to explain the exemption approach by referring to the administrative challenges of worldwide taxation,⁸⁷ the relative importance of foreign profit being historically low, the risk of MNEs moving headquarter location,⁸⁸ etc. But it is unclear that any of these explanations are sufficiently compelling.

In fact, other important externalities associated with exemption may be relevant to solving this puzzle. One country’s experience with modes of worldwide taxation reveals such additional externalities. The United States has always taxed U.S. persons’ (including U.S. corporations’) worldwide income, but such worldwide taxation was always imperfect, containing deferral and other exemption-like features. Therefore, variations in the strength of the U.S. worldwide system can be recast as variations in the system’s *exemption-like* features. And the most prominent episodes of such variations were all motivated by explicit policy objectives often not considered by international tax scholars.

For instance, until 1962, no anti-deferral rules applied to the foreign income of foreign subsidiaries of U.S. corporations. This was so even though foreign personal holding company rules had been adopted in 1937 to curtail profit shifting by individual American taxpayers.⁸⁹ Moreover, legislators had become well aware of American corporate taxpayers’ incentives to incorporate outside the U.S. to lower their tax rates by 1921.⁹⁰ Instead of treating this as a problem of tax avoidance, however, policymakers explored ways to *facilitate* American businesses’ attempt to lower their U.S. tax burdens by adopting special, exemption-like rules for exporters.⁹¹ This formed part of a larger governmental effort to promote American exports, which in turn implicated U.S. foreign exchange policy and the American desire to subsidize business investment in Europe after World War I. The drive to provide foreign aid was further strengthened in the early post-WWII years. Notably, neither export promotion, nor deliberate transfers to foreign nations to maintain peace and create an American-led world order,⁹² are explicable as mere policies about the deployment of mobile capital.

Only the economic burden of maintaining the Bretton Woods system brought about a change in course. The Kennedy administration announced the controlled foreign corporation (“Subpart F”) rules in 1961 with the aim of “easing the U.S.’ balance of payments deficit” and stimulating “plant

⁸⁷ Such challenges, however, are usually postulated for individual, not corporate, income taxation. Yet the exemption approach is adopted more often for corporations than for individuals.

⁸⁸ Avi-Yonah 2000.

⁸⁹ See notes 26-27 *supra*.

⁹⁰ Graetz and O’Hear 1997, 1059-1962.

⁹¹ *Id.*

⁹² Ohanian et al 2021.

modernization” within the U.S.⁹³ Combatting tax avoidance was only part of the goal of the new anti-deferral rules, as evidenced by the fact that Kennedy proposed cutting the U.S. corporate tax rate and introducing the investment tax credit at the same time. Indeed, as the U.S. balance-of-payment crisis worsened in the 1960s, the U.S. even temporarily adopted capital control and an embargo on net direct investment outflows to continental Europe.⁹⁴ In other words, the introduction of the subpart F rules in the U.S. could plausibly be seen as a component of a much larger policy reversal.

Strikingly, as the U.S. began withdrawing from the Bretton Woods system—ending an era of deliberate transfers to allied countries—the exemption of foreign income immediately came to the center of international controversy. The U.S. argued that the exemption system adopted by European countries made it very easy for them to deliver de facto export subsidies through the inevitable slack in monitoring transfer pricing with untaxed foreign affiliates,⁹⁵ and that the U.S. should be entitled to adopt explicit export subsidies under its worldwide CIT. The ensuing trade dispute, lasting for 30 years, was the largest in the World Trade Organization’s (WTO) history. Thus, remarkably, though the exemption system’s effect on mobile capital was understood even in the 1920s, when capital mobility became reality again after the Bretton Woods system’s collapse, the first and largest controversy triggered by exemption was about the trade in goods.

Two other things happened during these same 30 years. First, trade economists actively explored conditions under which export subsidies may be national-welfare-enhancing, noting that exporters and MNEs often operate under conditions of imperfect competition, and that small amounts of government assistance may translate into large competitive advantages.⁹⁶ Second, as the U.S. faced repeated setbacks at the WTO in the dispute with Europe, it began to issue regulations that substantially benefited U.S. MNEs and indirectly secured many of the advantages of exemption.⁹⁷

Overall, policies directed at exports and at geopolitical objectives arguably played a dominant role in shaping U.S. outbound international tax policy for the first century. The international provisions of the Tax Cut and Jobs Act (TCJA) of 2017 represent a continuation of the same saga. The Global Intangible Low-Taxed Income (GILTI) rules were adopted explicitly to “bring jobs back to America” and were rationalized by the Trump Administration as part of a policy package that, reminiscent of the international tax reform under John F. Kennedy, also sharply reduced U.S. CIT rates.⁹⁸ Given this, there are two natural and important questions to ask. First, how large were the international externalities implied by the different versions of the U.S.’ anti-deferral rules? Second, why are such externalities through the export and foreign aid channels (i.e., channels other than mobile capital) rarely discussed in international tax scholarship?

Fully answering these two questions is beyond the scope of this paper. However, two points are worth noting for a start. First, regarding the second question, the centrality of export-promotion and foreign aid policies to U.S. outbound international tax rules *was* routinely acknowledged before the 1990s. The foreign tax credit (FTC), for example, has long been seen as a subsidy for foreign investment:

⁹³ Kennedy 1961.

⁹⁴ Ghosh and Qureshi 2016.

⁹⁵ Brumbaugh 2004.

⁹⁶ Brander 1995. Brander pointed out that the analyses he reviewed were all normative in nature; positive political economy theories would further explain the adoption of export subsidies.

⁹⁷ See text accompanying notes 28-29 *supra*.

⁹⁸ The TCJA’s Foreign Derived Intangible Income (FDII) regime, of course, reintroduces an export subsidy.

loosening eligibility for FTC claims enhances this subsidy while tightening eligibility reduces the subsidy. At its very inception, the FTC was already partly motivated by American interest to provide aid to Europe.⁹⁹ And especially after the abandonment of the Bretton Woods system, the rationality of the FTC was heavily debated precisely in terms of the subsidies it represented.¹⁰⁰ It was only gradually in the 1980s that policies on FTC, deferral, and exemption came to be commonly analyzed, in the United States, in terms of their effects on mobile capital.¹⁰¹ Arguably, this represented a shift in intellectual paradigms, rather than a judgement based on careful examinations of the evidence—let alone consensus—that the externalities of the outbound tax rules through the mobile capital channel were greater than through the export subsidies channel.

Second, in respect of the first question, measuring the magnitudes of international externalities is inherently difficult to do, especially given that it is natural to think of such externalities in welfare terms, and that complex questions of economic incidence are implicated. It is worth pointing out that very little of the large recent empirical literature on MNE profit shifting tries to quantify the impact of profit shifting on nations' welfare. And insofar as empirical evidence disproves the hypothesis that countries engage in significant tax competition to attract mobile capital, little international externalities of this kind would even be there to be quantified. By contrast, some macro-economists have tried to quantify the externalities of the Bretton Woods' capital control system, which limited capital flows to the U.S. One estimate is that the system improved welfare in non-U.S. and non-European countries by 4.5%, improved welfare in European countries by 1.3%, while lowering welfare in the United States by 4.5%.¹⁰² In other words, policies under Bretton Woods represented a very large and costly act of altruism on the part of the U.S. While the externalities of U.S. international tax policies during the Bretton Woods period may be smaller, these estimates suggest that ignoring them—or the externalities of the policies that supported foreign investment before the end of WWII—would be unwise.

b. Externalities of source country tax rules

In some ways, the international externalities of source country income taxation seem more intuitive than those of residence country taxation.¹⁰³ As FDI often enables trade in goods and services, taxes on FDI seem easy to analogize to tariffs. Moreover, the possibility of optimal tariffs—tariffs that maximize the national welfare of importing countries at the expense of foreign countries and the world—has long been understood. The externalities imposed by Nash-optimal tariffs also point to the potential benefits of international cooperation to mitigate such externalities, which have helped rationalize existing trade agreements.¹⁰⁴ In analogy to such theories, a main function of bilateral tax treaties is arguably to secure reciprocal and mutually beneficial reductions of source country tax rates on a variety of business incomes. Yet from this perspective, it is quite remarkable that theories of

⁹⁹ Graetz and O'Hear 1997, 1051 ("A variety of American economic and diplomatic interests required that a substantial quantity of American capital be channeled to rebuild post-war Europe.")

¹⁰⁰ See Schmidt 1975; Kingson 1981.

¹⁰¹ For an early review, see Slemrod 1995.

¹⁰² Ohanian et al 2021.

¹⁰³ Traditionally, when markets are assumed to be perfectly competitive, trade economists have found export subsidies harder to rationalize in a non-cooperative setting than import tariffs (and export taxes). Therefore, the exemption, deferral, and FTC systems may be perceived as harder to rationalize in analogy to policies adopted for trade in goods and services.

¹⁰⁴ See Cui 2022 for a summary of the terms-of-trade theory of trade agreement and its implications for the study of international tax cooperation.

mobile capital have shed so little light on the externalities of source-country income taxation. Indeed, according to the most well-known versions of such theories, source-country taxation either should not exist, is inefficiently low (rather than being too high in the absence of cooperation) or affects world welfare only through an abstract conception of capital important neutrality.

A different aspect of source-country tax rules, namely, frequently observed preferential treatments of foreign investment, has generally been interpreted through the lens of tax competition. In theories of international trade, however, import subsidies are often seen as improving both national and global welfare, especially in the presence of imperfect markets. Such subsidies may, for example, help mitigate the effect of hold-up problems when traded goods involve bilateral monopolies.¹⁰⁵ They may also induce greater production by monopolists. In other words, preferential source taxation rules may not be aimed at attracting mobile capital at all. Instead, they may facilitate beneficial trade in goods and services with positive, rather than negative, net externalities. In such circumstances, observed profit shifting may merely capture intentional subsidies; to adopt the presumption that profit shifting is necessarily bad may be simply to miss the most relevant welfare effects.

Theories of tax competition study how countries set CIT rates and tax bases applicable to domestic investment in strategic response to one another. Such theories face an inescapable predicament. They imply, implausibly, that CIT rules targeted at either *foreigners* (inbound rules) or *foreign investment* (outbound rules, such as exemption of foreign income or FTC), have no first order effects on other countries. Alternatively, they imply, equally implausibly, that such effects exist, but countries simply do not act strategically by varying these rules. It seems much more plausible to hold instead that most instances of MNE profit shifting are intentional consequences of international provisions of countries' CITs, and that many such consequences accrue through channels other than physical or financial capital. Moreover, countries interact with one another in designing their CITs' international provisions, including through the most explicit forms of coordination possible: tax treaties. The evolution of this sphere of strategic and cooperative interactions, especially since the end of WWII, is simply relegated to the background by scholars preoccupied with tax competition.

Conclusion

In a study published a decade ago, the economists Marius Brülhart and Raphaël Parchet told a story about “the mysterious death of bequest taxes in Switzerland.”¹⁰⁶ Switzerland has a famously decentralized fiscal system, and the reality of tax competition among its cantons seems very plausible. In the 1980s and 1990s, Swiss local politicians campaigned intensely to reform cantonal bequest taxes, so as to attract allegedly mobile wealthy retirees. Consequently, bequest tax burdens dropped markedly across the country—in a seemingly perfect illustration of the inexorable force of tax competition.

Brülhart and Parchet found, however, that high-income elderly individuals in Switzerland displayed no response to the inheritance tax cuts, nor was there evidence of increasing mobility of such individuals. While the competitive pressure for tax reforms due to mobile tax bases was amply evident in campaign brochures, it was nowhere to be found in available data. What seemed to be generating political pressure was the *idea* of tax competition itself, not any real fact in the world.

¹⁰⁵ Antras and Staiger 2012.

¹⁰⁶ Brülhart and Parchet 2014.

This paper poses the question: in addition to the mysterious death of bequest taxes in Switzerland, has *alleged* tax competition also led to the mysterious birth of Pillar Two? Over 130 national governments purportedly agreed to support the Global Minimum Tax, aiming to mitigate international tax competition. For many commentators, this is sufficient evidence for the reality of international tax competition. However, I have argued that empirical evidence for competition for productive capital is weak. Moreover, this empirical finding is consistent with critical facts about MNEs—especially the rise of intangibles and the prevalence of horizontal FDI structures—that mitigate competitive pressure. In addition, I have suggested that profit shifting is hardly attributable to low-tax countries competing to attract profits through low statutory tax rates, but likely has more to do with higher-tax countries’ rules that vary the ease of profit shifting. These latter rules likely impose significant externalities on other countries, but such externalities can be either positive or negative. Moreover, they may be important even when there is no flow of capital but only trade in goods or services, and therefore may not be well-modelled by mobile capital.

We know that MNEs worldwide engage in extensive tax-motivated profit shifting. In prevailing narratives, MNE profit shifting is explained by the existence of low-tax countries, and it provides further incentives for countries to lower their corporate tax rates, sweeping them into competitions for profits as well as for productive capital. Such narratives point to a clear direction for global cooperation: if all or most countries prefer to collect more CIT revenue but are unable to do so because of downward competitive pressure on their tax rates, they can cooperate to stop tax competition, thereby also substantially eliminating opportunities for profit shifting. This paper has offered new arguments that such diagnoses are misguided. If the tax competition narrative is refuted, it is no longer clear how profit shifting should be assessed generally, whether there is cooperative surplus in countries’ coordinating to end MNE profit shifting, or what the best design should be for such coordination.

But the problem for normative economic analysis of international taxation does not end there. More fundamentally, existing theories of optimal international taxation do not consider non-rival input to production at all.¹⁰⁷ Bringing non-rival intangibles into the picture causes new and first-order questions to arise. For example, if countries where a non-rival technology is developed and countries where it is deployed can *all* tax the return to the technology, it might at first seem that over-taxation that deters innovation may result, and thus coordination to prevent excessive taxation would be desirable. On the other hand, both types of countries may also have strong reasons to subsidize firms that develop and own non-rival intangibles: they may do so either for the positive spillovers that such firms may generate, or simply to induce the production of the optimal quantity of the goods employing the technology when marginal cost is lower than average cost. Such subsidies may be delivered through the income tax system, sometimes resulting in “double non-taxation”. In the world of intangibles, it is no longer clear that this must be welfare-diminishing.

The fact that scholarship on international taxation has barely recognized the significance of non-rival intangibles can be illustrated through two examples. First, twenty years ago, Desai and Hines 2003 took note of the view already widely shared among trade economists that multinational firms are not “merely conduits for capital to arbitrage differences in rates of return between countries.” They also note that “multinational firms differ in the proprietary assets (e.g., brands, production processes, patents) they can exploit and that these differences are critical to understanding the patterns of FDI and

¹⁰⁷ See, e.g., Keen and Wildasin 2004. Indeed, even within the domestic tax policy context, optimal tax theories recognizing the presence of non-rival inputs are just beginning to develop. See, e.g., Jones 2022, Akcigit et al 2022.

the productivity of these firms.”¹⁰⁸ However, they go on to articulate principles of international taxation that would contribute to the optimal allocation of traditional rival-use assets, taking productivity differences (including those arising from the owners of non-rival assets) as given. It is unclear how this could approximate welfare optimization when the taxation or subsidization of non-rival assets are of central concern to policymakers.¹⁰⁹

Second, Richter 2021 confirms that digital services provided at zero marginal cost are easy targets for optimal tariffs (imposed through, e.g., withholding taxes), and argues that because such tariffs may erode incentives for technological innovation, countries should cooperate to share the gains from trade in digital services. He does not consider, however, the fact that such logic may apply in all cases where non-rival technologies are deployed, which has important implications for international taxation in general.

A reconceptualization of international taxation that incorporates the vital role of non-rival assets—which requires reconceptualizing both the global optimal and how countries may coordinate to move closer to the efficiency frontier—is a fascinating prospect. This paper has argued that the first step in this undertaking is to free ourselves from the mirage of mobile capital. This requires us to resist the temptation of inferring, from reports of a recent unprecedented global tax agreement, that this mirage must be real.

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¹⁰⁸ Desai and Hines 2003 at 488-489.

¹⁰⁹ Moreover, Desai and Hines 2003 take the stock of traditional physical capital as fixed when arguing for the principles they favor. They motivate this idea by the claim that most FDI takes the form of mergers and acquisitions instead of greenfield investments. Their arguments thus lend themselves to the interpretation (made, e.g., in Becker and Fuest 2011) that international taxation primarily affects the flow of financial capital, a non-productive input. As discussed in Section 1 of this paper, it is important to distinguish non-rival intangibles from both physical and financial capital.

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