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The Digital Services Tax: A Conceptual Defense

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INTRODUCTION

Do digital platforms, operated by multinational companies (MNCs), give rise to new profit tax bases? Do they support new claims to, or new desirable international allocations of, taxing rights with respect to MNC profits? In the last two years, these questions have been forcefully raised by bold, new legislative proposals from the UK government,¹ the European Commission (EC),² and a number of European national governments including Spain, France, Austria, and others.³ These governments have called for the international community to explore long-term strategies to reforming international business income taxation, such that taxing right over MNC profits could be reallocated to reflect the *value contributed by users of digital platforms*. They also announced the intention to adopt unilateral, “interim solutions” that do not require international consensus. These unilateral solutions deploy taxes imposed on revenues from various digital services, and are meant to prod nations into multilateral action. While the details of the proposed interim taxes vary, a subset of them, bearing sufficient resemblance with one another, are now associated with the label “digital services tax” (DST). Because the prospect

¹ Her Majesty’s Treasury, *Corporate Tax and the Digital Economy: Position Paper* (Nov. 2017) [hereinafter *UK 2017 Paper*]; Her Majesty’s Treasury, *Corporate Tax and the Digital Economy: Position Paper Update* (Mar. 2018) [hereinafter *UK 2018 Paper*]; Her Majesty’s Treasury, *Digital Services Tax: Consultation* (2018) [hereinafter *UK DST: Consultation*].

² See European Commission, *Proposal for a Council Directive Laying down Rules relating to the Corporate Taxation of a Significant Digital Presence*, COM (2018) 147 final (Mar. 21, 2018) [hereinafter *EC Long-Term Proposal*]; European Commission, *Proposal for a Council Directive on the Common System of a Digital Services Tax on Revenues Resulting from the Provision of Certain Digital Services*, COM (2018) 148 final (Mar. 21, 2018) [hereinafter *EC DST Proposal*].

³ KPMG, *Digital economy impact checklist: Update on Digital Services Tax developments in Spain* (2019); Stephanie Soong Johnston, *Austria Proposes 5 Percent Digital Advertising Tax*, TAX NOTES (Apr. 8, 2019), <https://www.taxnotes.com/tax-notes-international/digital-economy/austria-proposes-5-percent-digital-advertising-tax/2019/04/08/29bc3>; Teri Sprackland, *Internet Companies to Pay French Digital Services Tax in October*, TAX NOTES (Mar. 7, 2019), <https://www.taxnotes.com/worldwide-tax-daily/online-sales-taxation/internet-companies-pay-french-digital-services-tax-october/2019/03/07/296qj>.

of a large group of countries agreeing on the “long-term” reform of international income taxation is highly uncertain, the unilateral imposition of the DST by some countries now seems unavoidable. Even the government of the United States—home to many of the largest platform MNCs that would be subject to the DST—has come to accept the DST’s short-term inevitability.⁴

There is growing public recognition that digital platforms display distinctive economic characteristics. These, according to the Organization for Economic Co-operation and Development (OECD), include at the minimum (i) network effects that generate market power, (ii) two- or multi-sided business models that involve complex pricing choices in profit maximization, (iii) negligible marginal cost, and (iv) geographic mobility in the location of service delivery and profit recognition.⁵ However, both in the United States and elsewhere, commentaries on DST proposals among both tax practitioners and academics have been predominantly negative.⁶ The proposals are often branded as populist, financially expedient, or worse,⁷ as though no sound policy justification could possibly be offered for them. Tax legal scholars have also been quick to point out that the current debate about reforming international

⁴ Stephanie Soong Johnston, U.S. and France Strike Compromise over Digital Services Tax, 164 TAX NOTES FEDERAL 1629 (SEPT. 2, 2019).

⁵ Organization for Economic Co-operation and Development, *Tax Challenges Arising from Digitalisation – Interim Report 2018: Inclusive Framework on BEPS, OECD/G20 Base Erosion and Profit Shifting Project*, OECD PUBLISHING, (2018) [hereinafter *OECD 2018 Report*]. See especially Chapter 2.

⁶ See, e.g. Clifford Chance LLP, *Missing the Target? The Surprising Scope of the Proposed New EU Digital Services Tax*, (Mar. 2018); Helge Sigurd, Næss-Schmidt et al., *The Proposed EU Digital Services Tax: Effects on Welfare, Growth and Revenues*, COPENHAGEN ECONOMICS (Sept. 2018); Sean Lowry, Congressional Research Service, *Digital Services Taxes (DSTs): Policy and Economic Analysis* (Feb. 25, 2019), <https://fas.org/sgp/crs/misc/R45532.pdf>.

⁷ Gary Clyde Hufbauer & Zhiyao (Lucy) Lu, *The European Union’s Proposed Digital Services Tax: A De Facto Tariff*, PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS (Jun. 2018); Bloomberg Editorial Board, *Europe’s Digital Tax is a Bad Idea*, BLOOMBERG (Apr. 10, 2018), <https://www.bloomberg.com/view/articles/2018-04-11/europe-s-digital-tax-is-a-bad-idea> (“Doing nothing would be better than this”).

taxation—including but not limited to advocacy for DST proposals—is highly political.⁸ The salience of political motivations behind DST proposals continues to threaten to overwhelm any proper assessment of the substantive policy merits of the tax.

In this Article, I offer a range of arguments, based on both efficiency and fairness considerations, in support of the DST. I believe the arguments are novel in at least four respects. First, they are highly distinct from the particular policy justifications for the DST provided by the EC, UK and other governments.⁹ Second, they articulate a set of intuitions, specifically about how corporate rent can be attributed to particular geographical locations, that are quite new to discussions of international taxation generally. The plausibility of these intuitions deserves serious examination in its own right. Third, it will be seen that the traditional international income taxation regime does little to acknowledge these intuitions. This means not only that DST proposals can advance policy objectives that international income taxation has so far missed, but also that it may be a challenge to reform international income taxation to serve the same policy objectives. This perspective stands in sharp contrast with a prevalent assumption in recent debates about the DST, namely the DST and reform of international income taxation are policy substitutes. Fourth, in addition to articulating its basic motivations, I argue that the DST's pragmatic consequences can also be reasonably predicted and may fall well within the range of the acceptable.

⁸ Arthur Cockfield, *A digital-tax war is coming to a galaxy not so far, far away*, THE GLOBE AND MAIL (Mar. 11, 2019), <https://www.theglobeandmail.com/opinion/article-a-digital-tax-war-is-coming-to-a-galaxy-not-so-far-far-away/>; Ruth Mason, *The Digital-Tax Proxy War*, MEDIUM (Dec. 2, 2018), <https://medium.com/@ProfRuthMason/the-digital-tax-proxy-war-1f618a0f8d43>.

⁹ An important limitation of early academic critiques of DST proposals is that they have considered (and dismissed) only the particular arguments offered for the DST in official government announcements—hardly the place to look for authoritative intellectual exegesis. *See, e.g.* Itai Grinberg, *User Participation in Value Creation*, 4 BRIT. TAX R. 407 (2018); Johannes Becker & Joachim Englisch, *Taxing Where Value is Created: What's "User Involvement" Got to Do With It?* (Oct. 2018).

Here is a preview of the arguments. The main case in support of the DST is that it would allow location-specific rent (LSR) earned by digital platforms to be captured by the countries in which such rent arises. In contrast, the entitlement to a share of such rent is not acknowledged under traditional income taxation. This is clearest in two-sided business models that rely on cross-side externalities (“indirect network effects”).¹⁰ Under the (now standard) economic analysis of two-sided businesses, a digital platform can price below marginal cost for services provided to users on one side (i.e., providing a subsidy on that side), while making up for that loss by charging users on the other side. Suppose the user population on the first side is in one country while the user population on the second side is in another country. Users on the first side are crucial for the platform company’s ability to profit from users on the second side, yet such “user value creation” in the country of the first side may be accompanied by little or no payment *from* that country. And insofar as traditional international income taxation locates the source of income (and thereby any economic rent) mainly by tracking sources of payment (along with the location of physical activity), many economic rents will fail to be attributed to their proper origins.

In fact, allocation criteria based on sources of factor payment and physical activities may fail to track LSR not just in the cases of businesses founded upon indirect network effects. Even among digital platforms, direct network effects, personalization, and data exploitation can also generate misattributed LSR. It is arguable that the traditional international income tax framework generally ignores the issue of market structure and the location of economic rent arising from such structure. The single focus in international taxation on preventing mis-attribution through

¹⁰ See *infra* Part II.A.

transfer pricing among related parties has systematically come at the expense of neglecting rent attribution in the context of third-party transactions in markets characterized by imperfect competition.

In addition to geographically allocating rent based on market structure, this article introduces an additional fundamental intuition about rent allocation. The recent literature on international taxation has increasingly referred to a distinction between mobile and immobile rent, yet the nature of this distinction is rarely a focus of discussion. Technology, intellectual property, and intangible assets are often presented as the source of mobile, firm-specific but not location-specific rent. In contrast, I argue that even when economic rent is earned from activities that are geographically highly mobile (e.g., servers supporting platform operations), some such rent can be viewed as location-specific or immobile. This happens when a technology can be deployed simultaneously in multiple locations. The fact that the deployment of a technology is non-rival—its deployment in one country has no opportunity cost in terms of its deployment in another country—implies that any rent earned from the technology’s deployment with respect to a given country can be attributed to that country. Therefore, the sources of purely mobile and non-location-specific rent may be fewer than previously recognized.

Finally, in terms of the practical effects of unilateral implementations of the DST, the paper will advance the following observations. First, many digital platforms generate revenue at zero or negligible marginal cost. If—though this is unlikely to be the case—digital platforms’ production and pricing decisions are based on the relationship between marginal costs and demand, then a tax on revenue such as the DST may generate no distortion. If digital platforms’ marginal costs are not zero, and, more importantly, if they operate in environments characterized by imperfect competition, then the DST’s incidence is harder to predict. Second, many casual

claims that have been made about the DST's undesirable incidence effects are incorrect. For example, if platforms pass the cost of the DST onto advertisers, this will reduce advertisers' profit. But since advertising represents a fixed rather than marginal cost, it's not at all clear why the DST on advertising would be passed onto final consumers. Third, to the extent that the DST allows the country imposing it to collect revenue on transactions between digital platforms and foreign producers and consumers, this may be viewed as a fair transfer from the surplus enjoyed by foreign producers or consumers to the country that is the origin of the surplus. Fourth, while the DST may also increase prices paid by domestic producers and consumers, income taxes may also have such effect. The country imposing the DST may well view such increases as a reasonable price to pay for capturing some of the rent earned by platform firms. Fifth, a great deal of the expenditures of digital platforms may be aimed at capturing market share. Such expenditures' private value to the firm is greater than their social value, and a revenue tax may enhance social efficiency by deterring excessive entry and mitigating market fragmentation.

This Article will focus on the most fundamental issues in motivating and designing the DST. There are numerous subsidiary issues, such as how countries need to coordinate in imposing the DST to avoid excessive taxation, the DST's relation to tax treaties, the charge that introducing the DST inappropriately "ring-fences" the digital economy, etc. that I discuss in separate work.¹¹

The rest of the Article is organized as follows. Part I lays out certain policy details of the EC's and UK's DST proposals, both to give the reader a sense of the targeted nature of the DSTs that are likely to be implemented in the near future, and to distinguish the versions of the DST I

¹¹ See Wei Cui, The Superiority of the Digital Services Tax over "Significant Digital Presence" Proposals, forthcoming in *National Tax Journal* (December 2019), <https://ssrn.com/abstract=3427313>.

will be chiefly concerned with and some others, such as the Indian equalization levy, that aim to correct not the mis-attribution of rent but the absence of a PE. Part II then examines the fundamental rationales motivating the DST. It shows how platform rent can be viewed as location-specific in a wide range of settings, and emphasizes the distinction between the principles of taxing rent where it arises and of taxing MNC profit in the country of “destination.” Part III explains the fundamental ways in which traditional international income taxation misses rent allocation issues arising from market structure. It also highlights the normative underpinning of the new distinction this Article draws between mobile and immobile rent. Part IV explains how to reason about the incidence effect of the DST and empirical evidence in support of such reasoning. A brief conclusion follows in Part V.

I. EXAMPLES OF DST PROPOSALS

This Part introduces some examples of proposed DSTs expected to be enacted in the near future. I first discuss the March 2018 DST Proposal from the European Council: although it is no longer actively discussed at the EC level, it represents the template for the DST enacted by France and proposed DST legislation pending enactment in Spain and Italy. I then summarize the UK’s 2018 DST proposal, both because the UK government championed the DST independently of the EC and offered its own extensive justifications for the tax, and because the UK proposal illustrates how some governments have deliberately narrowed the scope of the DSTs proposed. The limited scope of current DST proposals is an important feature of such proposals, but has received almost no discussion: governments, businesses, practitioners and academics that oppose the DST have been more interested in rejecting the tax categorically. In Part II, however, we will see that the rationales for imposing the DST apply to a much wider range of business models.

Another important preliminary issue is a distinction between the DSTs proposed by the EC and the UK, on one hand, and certain other (actual or proposed) taxes on digital platforms on the other. The critical difference for our purposes is whether the country imposing the DST is the source of payments to the platform company. A tax imposed on advertising revenue based on where the targeted audience is located, for example, is different from a tax on advertising based on where the purchaser of advertising services is located. The EC/UK DSTs present examples of the former: they would subject platform advertising revenue to tax as long as the advertising is targeted at European/UK consumers, even if producers outside Europe/UK pay for the advertisements. The Indian Equalization Levy, by contrast, is imposed on payments from India for advertising services. This Part explains the significance of this distinction.

A. The EC DST Proposal

The **March 2018 EC DST Proposal** contains specific language for a directive to be adopted by the EC, in addition to an explanatory memorandum as well as extensive recitals that elaborate the policy objectives of the proposed directive.¹² For our purposes, the most important aspects of the proposed directive are the provisions on taxable revenue, and on how taxable revenue is to be allocated among EU member states.¹³

1. Taxable Revenue

¹² *EC DST Proposal*, *supra* note 1.

¹³ The proposed directive also contains extensive provisions regarding the DST's administrative aspects: *see id.* at Articles 9-23.

“Taxable revenue” in the EC DST Proposal consists of revenues from three types of services:

- (a) the placing on a digital interface of advertising targeted at users of that interface;
- (b) the making available to users of a multi-sided digital interface which allows users to find other users and to interact with them, and which may also facilitate the provision of underlying supplies of goods or services directly between users; and
- (c) the transmission of data collected about users and generated from users' activities on digital interfaces.¹⁴

A number of carve-outs are made from these provisions, the most important of which are for service type (b): such services do not include “the making available of a digital interface where the sole or main purpose of making the interface available is for the entity making it available to supply digital content to users or to supply communication services to users or to supply payment services to users.”¹⁵

The interpretation of these provisions depends on the definitions of several key terms. First, “digital interface” is defined broadly to mean “any software, including a website or a part thereof and applications, including mobile applications, accessible by users.”¹⁶ Second, “user” “means any individual or business”. These two definitions together render the scope of business revenue covered by the DST very broad. They also affect the ways in which the ensuing DST

¹⁴ *Id.* at Article 3(1).

¹⁵ *Id.* at Article 3(4). Further exemptions from type (b) services are made for trading venues, “systematic internalizers”, and crowdfunding providers regulated by a 2014 European Directive (2014/65/EU) on financial instruments, and for facilitators of the grant of loans.

¹⁶ *Id.* at Article 2(3).

revenue would be allocated among EU countries. A third definition, of “digital content,” counteracts the effects of the previous two definitions. “Digital content” comprises “data supplied in digital form, such as computer programmes, applications, music, videos, texts, games and any other software, other than the data represented by a digital interface.”¹⁷ Since revenue from the provision of digital content is exempted from the scope of the DST, an expansive reading of this term shrinks the scope of the DST.

With these definitions, the broad intent behind the EC’s delineation of taxable revenue seems discernible, even though much ambiguity remains. Type (a) services, for example, broadly capture online advertising. Type (b) services seem to encompass a whole range of digital business models selling connections among different users, such as Uber, AirBnB, Amazon Marketplace, Match/Tinder, the various platforms within the Booking Holdings group,¹⁸ and so on. At the same time, credit card companies and payment settlement services such as PayPal appear to be excluded from the DST.¹⁹ Equally importantly, online retailers (e.g., Amazon) and content and solution providers (e.g., Netflix, Spotify, Ubisoft, AWS, ADP) also appear to be excluded. The rationale offered by the EC for this is that although online retail, digital content provision, and online services might also allow some degree of user interaction, such interaction is ancillary to the main purpose of the delivery of goods, content, and services.²⁰ The “value

¹⁷ *Id.* at Article 2(5).

¹⁸ Booking.com’s owner, Booking Holdings, also owns familiar platforms such as OpenTable, Kayak, Priceline, Agoda, and RentalCars.

¹⁹ However, payment services are not included in the exemptions from type (c) services. This would seem to leave them taxable as if such services involve “transmission of data collected about users and generated from users’ activities on digital interfaces”.

²⁰ *EC DST Proposal*, note 1, at 8.

creation” in such cases lies mainly with the production of the goods, content, and services sold online, whereas the user’s role in value creation is, supposedly, less central.²¹

The precise application of the proposed directive’s language is far from clear, even in some seemingly central cases of digital platforms. Is Microsoft, the provider of operating systems (clearly a software accessible by users), a business that makes available a digital interface that facilitates the supply of goods or services directly between users (e.g., between end users and app developers), or is it a provider of digital content? If LinkedIn provides information about other LinkedIn users in exchange for subscription fees, is this the provision of digital content, user intermediation, or the transmission of data? The proposed directive’s language leaves very large room for further determination on a case-by-case basis. So far, commentaries on the proposed directive also mainly focus on its broad policy appeal (or lack thereof), instead of the precise delineation of its scope.

2. Attribution of Revenue to EU Member States

Taxable revenue will generate DST liability under the proposed directive—through a EU-wide, uniform 3% tax rate²²—only when earned by “taxable persons,” which are firms or corporate groups that earn (on a consolidated basis) worldwide revenue in excess of €750 million

²¹ *Id.* at recital paragraphs (13)-(15). Since many digital platforms engage both in online retail and content and service provision, on the one hand, and user intermediation, on the other, the *EC DST Proposal* appears to require them to separate revenue from taxable and non-taxable services: see Freshfields Bruckhaus Deringer LLP, *Tax Reform in the Digital Economy: Recent OECD and Commission Activity* (Mar. 21, 2018), http://knowledge.freshfields.com/CN/Global/r/3734/tax_reform_in_the_digital_economy__recent_oecd_and

²² *EC DST Proposal*, note 1, at Article 8.

and taxable revenue “obtained . . . within the Union” in excess of €50 million in a financial year. Both for determining whether this basic threshold of taxability is met, and for understanding which countries can claim taxing rights and DST revenue, the proposed directive provides that revenue is “treated . . . as obtained in a Member State in [a] tax period if users with respect to the taxable service are located in that Member State in that tax period.”²³

Different rules for determining user location are in turn offered for different types of services.²⁴ In the case of advertising revenue, it is clear that what matters is the location of the users towards which advertisements are targeted, not the locations of advertisement purchasers.²⁵ Similarly, in the case of data transmission, what matters is the location of the users the data regarding whom is transmitted.²⁶ In the case of digital intermediation, however, since there are “users” on both sides of a platform, the determination of the source of revenue is less clear. It is apparently either (i) the location of a device that is used to conclude an underlying transaction on the interface, or, (ii) in cases other than the supplies of goods or services directly between users, the location of the device where the user accesses the account. Presumably, it takes two sides to “conclude” a transaction. Thus, it appears that revenue from digital intermediation can be attributed to different jurisdictions even in connection with the same transaction.

These rules have provoked extensive discussion about the implementability of user geolocation and its compatibility with user privacy law.²⁷ For purposes of this paper, however,

²³ *Id.* at Article 5(1).

²⁴ *Id.* at Article 5(2).

²⁵ Specifically, the location where a device (on which the advertising in question appears) is used to access a digital interface.

²⁶ Specifically, the location where the user’s use of a device generated the data.

²⁷ Clifford Chance LLP, *supra* note ; Sullivan & Cromwell LLP, *Digital Economy Taxation: OECD Publishes Report on Taxation of the Digital Economy; European Commission Publishes Draft Directives*, S&C MEMOS (Mar. 27, 2018), <https://www.sullcrom.com/digital-economy-taxation-oecd-publishes-report-on-taxation-of-the-digital-economyeuropean-commission-publishes-draft-directives>.

the more important issue is how user location determines the allocation of tax revenue, because it goes to the nature of the justification for imposing the DST in the first place. This aspect of the proposed directive has hardly received any commentary, yet important questions remain unanswered. For example, even if the location of viewers of advertisements can be determined, there is a question about whether allocation should be made on a per entity or per ad basis. Even for the same digital platform, some ads may be sold on a pay-per-view basis while others on a pay-per-click basis.²⁸ Different advertising slots also attract different prices based on auctions. Therefore, it seems that apportionment should be made on a per advertisement basis.²⁹ Similarly, with data transmission, it may be that data about different users may generate different quantities of revenues, and inaccuracies may arise if user numbers are deployed to apportion total revenue from data transmission.³⁰

Perhaps most importantly, the proposed directive allocates revenue from digital intermediation without distinguishing between types of users: “if the service involves a multi-sided digital interface that facilitates the provision of underlying supplies of goods or services directly between users,” allocation is “in proportion to the number of users having concluded underlying transactions on the digital interface in that tax period.”³¹ Consequently, if there are

²⁸ PricewaterhouseCoopers International, European Commission Proposals for Directives regarding fair taxation of the digital economy (“Digital Tax Package”) (May 16, 2018) <https://www.pwc.com/gx/en/about/assets/reponse-ec-proposals-digital-tax-package.pdf>.

²⁹ See Martti Nieminen, *The Scope of the Commission’s Digital Tax Proposals*, 72 BUL. FOR INTL. TAX. 11 (2018): the author suggests that for targeted advertising, the apportionment would be done on a per advertisement basis. The more times an advertisement has been displayed through a device in a jurisdiction, the more DST it can claim. The number of users in a jurisdiction does not matter.

³⁰ *Id.* Nieminen suggests that for selling of user data, intermediation with underlying transactions, or intermediation without underlying transactions, the apportionment would be done on a per user basis. The more users there are in a jurisdiction, the more DST it can claim. The amount of data the users contribute or the magnitude of the transactions facilitated does not matter.

³¹ *EC DST Proposal*, note 1, at 21: “Taxing rights over the revenues of the business making available the interface are allocated to Member States where the users concluding underlying transactions are located, irrespective of whether the users are the sellers of the underlying goods or services or the buyers.”

always more user-buyers than user-sellers, revenue from intermediation would always be allocated to a greater extent to the buyer jurisdiction. As we will see in Part II, this can be the wrong result, even from a user-value-creation perspective, if it is the seller-users that contribute the most value (as in the case of AirBnB).

B. The UK DST Proposal

The UK government was an early advocate of the DST. In a position paper released in November 2017, HM Treasury announced its intention, “[p]ending reform of the international framework, . . . [to] explore interim options to raise revenue from digital businesses that generate value from UK users, such as a tax on revenues that these businesses derive from the UK market.”³² Specifically, the scope of the tax would focus on revenue earned from intermediation and online advertising. Like the EC, the UK envisioned from the beginning that the DST would leave online retail and online content and service provision outside of its scope.³³ Unlike the EC, however, the UK never proposed that the sale or transmission of data per se would fall within the scope of the “interim” tax.

In an updated position paper released in March 2018, HM Treasury further elaborated on which business models, in its opinion, rely significantly for their value on user participation. In particular, “user generated content,” “deep engagement,” and “contribution to brand” were identified as the most important forms of user value generation, in addition to network effects and externalities.³⁴ On the basis of these factors, it was concluded that social networks, search

³² *UK 2017 Paper*, *supra* note 1, at paragraph 1.6.

³³ *Id.* at paragraph 4.10.

³⁴ *UK 2018 Paper*, *supra* note 1, at Chapter 2.

engines, and intermediation platforms raise more serious problems of misalignment between value creation and taxation than online content providers, e-retailers, and digital service providers do.³⁵ HM Treasury’s emphasis that “user value creation” can be conceptualized *independently of* network effects and externalities is somewhat unique among governments offering policy justifications for the DST.

In November 2018, HM Treasury and HM Revenue and Customs finally issued a consultation paper on the UK’s proposed DST in preparation for enabling legislation in 2019.³⁶ According to the document, the UK DST will be designed as a 2% tax on the UK revenues of digital businesses “that are considered to derive significant value from the participation of their users.”³⁷ Specifically, these include “a social media platform, search engine or online marketplace.” In a significant deviation from the EC’s proposed DST, advertising revenue, unless it is earned by businesses otherwise “in scope,” would not be subject to the DST. However, all third-party revenue from “in-scope” businesses and linked to the participation of UK users would be subject to the tax, whether from advertising, subscription, sales of data, commissions or otherwise.

Much of the boundary of “in scope” business activities awaits further determination.³⁸ In terms of attribution of revenue to UK users, the proposal explains that for advertising revenue, UK revenue will be defined as “revenue from adverts displayed at UK users,” while for revenue

³⁵ *Id.* at paragraphs 2.42-2.48.

³⁶ *UK DST: Consultation, supra* note 1. The tax would apply from April 2020. According to a recent update, “HMT expects to have final legislation drawn by July 2019, which would then be included in the 2019-20 Finance Bill to be voted on in the fall of 2019”

³⁷ *Id.* at 4.

³⁸ While the EC DST proposal seems to intend to rely on the notion of “digital content” to exclude businesses from the DST’s scope, the UK DST proposal may need to further clarify the meaning of “social media,” “search engine,” and “online marketplaces.”

derived from other forms (e.g., subscription, commission, etc.), “the question will be whether the payment comes from a UK user, or relates to a transaction that involves a UK user.”³⁹

The UK DST proposal includes several other notable features. The threshold of taxability is potentially higher than under the EC proposal: a business will only become taxable if it generates more than £500 million in global annual revenues specifically from “in-scope business activities,” as opposed to business revenue of any kind.⁴⁰ Businesses will not have to pay tax on their first £25 million of UK taxable revenues. Taxpayers thus face a kink, not a notch, at the threshold. The tax will also include a “safe harbor” which will allow businesses with very low profit margins to elect to make an alternative calculation of their DST liability.

Like the EC, the UK government gives great emphasis to the idea that the DST would be narrowly targeted. Such narrow targeting is taken to be necessary for the DST’s legitimacy: the tax supposedly is introduced only in sectors witnessing the largest discrepancies between user value creation and traditional profit attribution. In the next two Parts, we will examine the nature of such purported discrepancies. Two remarks, however, are worth making about the DST’s narrow scope at the outset. First, advertising and online marketplaces involve platform models that are oriented towards consumers. This orientation of the earliest DST proposals has led to a particularly easy conflation between countries hosting users “creating value” for platforms and countries hosting individual consumers (“destination” countries). We will see, however, that the fundamental rationales for a DST differ strongly from arguments that have been made in favor of destination-based allocation.

³⁹ *UK DST: Consultation*, *supra* note 1, at 19.

⁴⁰ The business would also need to earn more than £25 million in annual revenues from in-scope business activities linked to the participation of UK users.

Second, because the incidence effect of the DST is complex, heterogeneous across different businesses, and not entirely predictable, it may be a good thing for any real-world DST to start with a relatively narrow scope: this would allow the DST's impact to be better understood before countries expand its application. From this perspective, the initial scope of the DST need not be delineated to satisfy all normative considerations. However, after DSTs are enacted in real practice, the boundaries of DST exemptions may come to receive greater scrutiny. In other words, the legitimacy of DST proposals may depend on using some business models to motivate the introduction of a new tax while, simultaneously, not drawing too sharp a distinction between these business models and others currently not within the scope of the DST.

C. Digital Taxes Linked to Lack of Business Presence

Both those alarmed by, and those in favor of, DST proposals have had reason to emphasize how many countries around the world are poised to take unilateral action against “Big Tech”. In support of this claim, they have stressed commonalities and downplayed differences among new “digital taxes.” A useful distinction, however, can be made between (i) those digital taxes imposed only on payments made from the tax-imposing jurisdiction, and (ii) those that base taxing rights on “users” regardless of whether the users make payments. The Indian Equalization Levy (EL) introduced in 2016 illustrates a type (i) tax.⁴¹ The EL is a 6% charge deducted from the gross amount a business located in India pays to a non-resident enterprise for the provision of online advertisement services. Thus, if an Indian manufacturer purchases advertisement space on Google targeted towards customers in Sri Lanka, the EL would apply,

⁴¹ *OECD 2018 Report, supra* note 5, at 142.

but if a Sri Lankan producer purchases advertisement space on Google targeted towards customers in India, the EL would not. Italy’s proposed **Levy on Digital Transactions** appears to have a similar structure.⁴² The EC and UK proposed DSTs, however, are taxes of type (ii).⁴³

The reason to distinguish between type (i) and type (ii) taxes is that certain justifications commonly offered for the former can be irrelevant for the latter. To justify type (i) taxes, countries often point to the shift of MNCs from “brick and mortar” models of doing business to engaging in service provision and management remotely. Such a shift makes it harder for countries to tax MNCs on the basis of physical presence. More technically, the business profit that MNCs make from a country—as evidenced by the payments they receive from it—fail to be allocated to the country because of the absence of PEs. The absence of physical presence or PEs may result from “artificial” tax planning, in which case anti-avoidance legislation, such as diverted profit taxes,⁴⁴ may be justified. Furthermore, even if there is no tax avoidance, taxing payments in the absence of physical presence may still be necessary to create an equal footing between multinational companies and domestic firms (hence the term “equalization” levy).

A key argument for type (ii) taxes, by contrast, is that much of a platform’s rent attributable to a particular jurisdiction may not only fail to be embodied through physical activity but also fail to manifest in *payment from* that jurisdiction. From this perspective, recent claims that the failings of the traditional international tax regime are attributable mainly to its reliance on “brick and mortar” business models understate (or mis-represent) the tax policy challenges posed by digital platforms. The fundamental mis-alignment between “value creation” and

⁴² *Id.*, at 143.

⁴³ Hungary’s tax on advertising also make the presence of targeted consumers in Hungary a crucial element in determining what revenue is taxable. *See id.* at 145 and 146.

⁴⁴ Philip Wagman, The U.K. Diverted Profits Tax: Selected U.S. Tax Considerations, 147 TAX NOTES 1413 (JUNE 22, 2015).

traditional profit allocation approaches is not a matter of physical presence or absence. Moreover, insofar as arguments for type (ii) taxes rely on location-specific rent, some instances of type (i) taxes may be hard to justify. For example, unless there are reasons to believe that purchasers of advertising generate rent for digital platforms that is specific to the country of the purchasers, a tax imposed by the country of advertisement purchasers cannot appeal to LSR. In fact, insofar as placing the ads of producers from one country reduces the scope for placing ads of producers from another country—for example because users are ad-averse and the placement of additional ads may have the effect of reducing users—any rent earned by a digital platform from local producers is arguably not “location specific.” Finally, the fundamental arguments in favor of type (ii) taxes are based on fair allocations of taxing rights. Advocates of such taxes may be less concerned with, and more agnostic about, the anti-competitive effects of the traditional international tax paradigm.

II. LOCATION-SPECIFIC RENT ON PLATFORMS

The main argument this paper advances to support the DST identifies significant sources of location-specific rent (LSR), the taxing rights over which, under the traditional international tax regime, fail to be allocated to the jurisdiction where the rent arises. The argument has two inter-linked components. The first explains how digital platforms can generate “hidden” sources of LSR—rents that may be invisible from the perspective of traditional international taxation. That is the task of this Part. The second articulates how the goal of capturing platform LSR is ill-served by traditional criteria for assigning taxing rights under the income tax (which criteria rely not only on physical presence but also on tracking streams of payment). That will be the task of the next Part.

A. Rent Arising from Multi-sided Business Models

Debates about reforming international taxation are often filled with buzzwords. “Indirect network effects” and “multi-sided business models” may understandably strike some readers as merely the latest varieties of colorful specks in the word salads routinely on offer. However, these words actually denote genuinely important economic concepts essential for motivating the DST.

Platform companies typically offer two different types of services to two different types of users.⁴⁵ They do so because of externalities among these two types of users, which exist when one type of user (on one “side”) cares about attributes of the other type of user (on “the other side”), including how many such latter users there are. Such “indirect network effects” are crucial to the operation of two- or multi-sided businesses.⁴⁶ In particular, the platform manipulates the structure of the prices charged to each side, because variations in such price structure (even when the aggregate price charged to the two sides for a given transaction is fixed) can lead to different volumes of transactions.⁴⁷ A standard (though eminently outdated) example is heterosexual nightclubs, which may charge an entry fee to men but let women in for free.⁴⁸

⁴⁵ Many platform companies are multi-sided, serving and exploiting cross-side externalities among more than two types of users. See Marc Rysman, *The Economics of Two-Sided Markets*, 23 J. ECON. PERSP. 125 (2009). The basic arguments advanced in this paper about two-sided platforms can easily be extended to multi-sided platforms.

⁴⁶ See Alexander White, *Online Platforms, Economics of*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS (Online eds., 2012); Jonathan D. Levin, *The Economics of Internet Markets*, (NBER Working Paper No. 16852, Mar. 2011), <https://www.nber.org/papers/w16852>.

⁴⁷ Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report* 37 RAND J. OF ECON. 645 (2006); Lapo Filistrucchi, Damien Geradin & Eric van Damme, *Identifying Two-Sided Markets*, 36 WORLD COMPETITION 33 (2013).

⁴⁸ Benjamin E. Hermalin and Michael L. Katz, *What’s So Special About Two-Sided Markets?* In Martin Guzman (Ed.) *Toward a Just Society: Joseph Stiglitz and Twenty-First Century Economics*, Columbia University Press. (2018).

Suppose that charging men \$10 for entry but women \$0 can attract 50 men and 50 women, while charging \$5 to everyone puts women off, and without women only 70 men show up. This “price structure” would not matter to a man and a woman who are an established couple, but because there are individuals who need the nightclub to access individuals of the other gender, and because of the differing preferences of men and women, the nightclub can generate more revenue by adopting the first price structure.

As the nightclub example shows, “two-sided” business models are neither new, nor necessarily digital, and need least of all to be international. However, some of the largest and most profitable MNCs in the world now run such business models.⁴⁹ Consider Facebook and Google, whose fabulous profitability explains why advertising revenue is a central focus of current DST proposals. They offer clear illustrations of the operation of a two-sided platform: individual users benefit from Facebook’s social media and Google’s search services typically without paying any monetary price, while the companies charge advertisers on the other side. Although the extent of the effectiveness of online advertising is still unclear,⁵⁰ apparently advertisers find it a more effective means—or at least offering a much larger margin for investing in advertising without diminishing returns—than existing alternatives. Most other recent “tech titans” are also digital platforms: Apple, Amazon, Uber, Netflix—the list goes on.

⁴⁹ David S. Evans & Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Business*, in OXFORD HANDBOOK ON INTERNATIONAL ANTITRUST ECONOMICS (Roger Blair & Daniel Sokol eds., 2015); Benjamin E. Hermalin & Michael L. Katz, *What’s So Special About Two-Sided Markets?* in TOWARD A JUST SOCIETY: JOSEPH STIGLITZ AND TWENTY-FIRST CENTURY ECONOMICS 111 (Martin Guzman, ed., 2018); Michael Katz & Jonathan Sallet, *Multisided Platforms and Antitrust Enforcement* 127 YALE L. J. 2142 (2018).

⁵⁰ Jasmine Gasrd, *Does Facebook Really Work? People Question the Effectiveness of Ads*, NPR (Sept. 12, 2018), available at: <https://www.npr.org/2018/09/12/647040758/advertising-on-facebook-is-it-worth-it>; Anja Lambrecht et al., *How do Firms Make Money Selling Digital Goods Online?*, 25 MARK. LETT. 331 (2014).

A basic insight from the economic analysis of multi-sided business models is that a two-sided business can price below marginal cost on one side (i.e., providing a subsidy to that side) while making up for that loss on the other side. This fundamental insight has a direct and obvious relevance for international taxation. A two-sided platform may provide services at prices below cost (including at negative prices or entirely for free) to users (e.g., individual consumers) on one side in a given country, while charging users (e.g., sellers of products and services) on another side in a different country for access to the first set of users. Users on the first side are crucial for the platform company's ability to profit from users on the second side, yet such "user value creation" in the country of the first side may be accompanied by little or no payment *from* that country.⁵¹

To fully understand how multi-sided platforms generate LSR, we can start with the examples of online advertising and online marketplaces.

1. Advertising and Online Marketplaces

Consider a German car manufacturer wishing to sell more cars to UK consumers. It purchases advertising space on Google to specifically target UK individuals. Several things can be said about this transaction. First, in all likelihood, the German car manufacturer is paying Google out of expected profit from sales to UK consumers. Second, the possibility of such profit arises from potential increases in the demand for the particular type of German car being

⁵¹ Indeed, the subsidized users (e.g., through the non-charging or waiver of subscription or transaction fees) effectively receive in-kind income. What justification can a country have for taxing a foreign company when it is one's own residents that earn income? This was a question frequently used to dismiss DST proposals early in 2018. See Wolfgang Schön, *Ten Questions about Why and How to Tax the Digitalized Economy*, 72 IBFD BULL. FOR INT'L TAX. (2018); Johannes Becker & Joachim Englisch, *EU Digital Services Tax: A Populist and Flawed Proposal*, KLUWER INT'L TAX BLOG (Mar. 16, 2018), <http://kluwertaxblog.com/2018/03/16/eu-digital-services-tax-populist-flawed-propos-al/>.

advertised. It does not arise from the way in which the German cars are produced—the advertisement does not change the German company’s marginal cost of car production. Instead, the German company’s production function and (short-term) supply curve remain the same. The point of the advertisement is to shift UK consumers’ demand curve for the German car outwards. Third, if we ask, “What accounts for the potential/expected outward shift of the UK consumers’ demand curve?” it seems that the change in demand entirely depends on the expected interactions between Google and UK users of the online search engine, something that happens outside of Germany. In short, Google’s advertising revenue comes from the expected producer surplus from the German car manufacturer, which in turn arises independently of anything occurring in Germany.

This makes another question unavoidable: where do the interactions between Google and UK users take place? Google’s servers may be located in some third country (e.g., Ireland) or countries. Just as importantly, Google’s technology and business innovations originate largely from the United States. In what sense can Google’s profit from targeting advertisement at UK consumers be attributed to the UK, and not to Ireland, the United States, or elsewhere? To many commentators on international taxation, these questions do not afford conclusive or even logically coherent answers.

There is one line of reasoning, however, suggesting that Google’s profit in the example above can be pinned down to the UK. Suppose (as is approximately the case in the real world) that Google’s technology, once developed, can be deployed simultaneously in different parts of the world. Nothing about the ads placed by the German manufacturers targeted at UK consumers prevents Google from placing ads targeted at users elsewhere, and vice versa. That is, decreasing UK-targeted ads does not lead to greater profit from ads targeted elsewhere, and increasing UK-

targeted ads does not reduce profit from ads targeted elsewhere. It follows that the profit Google makes from placing ads targeted at UK consumers *cannot be made elsewhere*. Once the cost of any real resources Google deploys in placing the UK-targeted ads is subtracted, any residual profit—which, by definition, is free of opportunity cost and represents economic rent—is specific to the UK. Such profit exists by virtue of the involvement of UK consumers.

Thus through a two-step process of reasoning—first allocating Google’s profit away from Germany, then allocating it away from the countries of Google’s servers or R&D activities—one is led to the conclusion that Google’s profit from selling advertising to the German car manufacturer is more traceable to the UK than it is to Germany or some other country. In this sense, Google’s advertising revenue earned from the German car manufacturer generates LSR in the UK.

Similar arguments can be made about a variety of online marketplaces. Take Amazon Marketplace, which generated 17% (\$23 billion) of Amazon’s total net revenue in 2016. Buyers on Amazon Marketplace do not pay any fee. Only sellers pay commissions per transaction (plus subscription fees for professional sellers). For a large subpopulation of the third-party sellers, it is plausible to assume that their business activities are of substantially the same kind as they would be without participating in online sales (i.e., these sellers have the same production functions online and offline).⁵² What Amazon Marketplace offers is a substantial boost in demand from the indirect network effect online. Such effect is the joint product of buyer activities on Amazon and Amazon’s own technology and business model (with important spillovers between its different lines of business). Given that online sellers generally multi-home,

⁵² Think of the used bookstore that buys used books from locals and sell to buyers around the world online.

it is plausible to infer that Amazon’s ability to earn commission from online sellers is not attributable to anything happening in the sellers’ jurisdictions per se.⁵³

Of course, many things contribute to Amazon’s advantage over traditional retailers.⁵⁴ Attributing Amazon’s profit (before capital expenditures) to buyer locations may be more complex than in the case of online advertising. For example, if a proprietary logistic infrastructure is responsible for Amazon’s success in a jurisdiction (e.g., in Germany, but not in Austria), then some rent may be attributable to that jurisdiction, for reasons not directly related to “user value creation”. In addition, Amazon sometimes may need to create country- or language-specific interfaces to operate (though it is not clear whether this in itself would generate any rent).⁵⁵ However, it might be claimed Amazon’s technology and business innovations are preconditions for the emergence and magnitude of values created in interactions with users, and therefore any rent earned from such technology or innovation should be ascribed to the jurisdiction from which they issue (i.e., the United States). Countering this claim, we have seen that there is an alternative position: to the extent that Amazon uses a technology or some intangible asset that can be simultaneously deployed in different jurisdictions, such that its use

⁵³ Indeed, most Amazon users’ experience is probably best described as *purchasing from Amazon* (including purchasing from Amazon “five-star sellers”), not from particular online sellers.

⁵⁴ These include, particularly, (i) operating a proprietary logistic infrastructure and adopting correspondingly a unique style of supply chain management, (ii) operating simultaneously as a marketplace and online retailer, (iii) superior web design and technological innovation, and (iv) running a multisided business model (including e.g. a giant computing division, publishing, and online entertainment). See Lina M. Khan, *Amazon’s Antitrust Paradox* 126 YALE LAW JOURNAL 710 (2017).

⁵⁵ Both the creation of the interface and its maintenance may take place outside the country at which it is targeted. Professor Schön suggests that a reasonable return to the cost of such country-specific “digital investment” can be attributed to the targeted country: Schön, *supra* note 51. If such “reasonable return” corresponds to what has come to be called “routine returns” to investment, then Professor Schön’s suggestion (i) does not apply to the allocation of economic rent, and (ii) creates a conflict for the allocation of routine returns to labor/capital—the standard suggestion being to allocate routine returns to where labor/capital are physically located.

with respect to buyers in one country does not affect its use with respect to buyers in another, it is possible to attribute the rent earned by that technology to the user location.

We will return to the examples of online advertising and online marketplaces in Part IV, when discussing the DST's potential incidence effects. The key observation regarding these examples so far is that a two-sided business (e.g., Facebook, Google, or Amazon Marketplace) can earn a profit from payments received from one side while the origin of the profit can plausibly be traced *exclusively* to the other side. This observation has profound implications for international taxation and offers the fundamental justification for the DST. Before exploring these implications, however, it is vital to note that the observation can hold not just when a platform earns a profit from sellers, but also when it earns a profit from consumers.

2. Platform Rent from Producer Jurisdictions

Many platforms selling connections between producers and buyers of goods and services subsidize the producer side. For example, the crucial business strategy for AirBnB is to get property owners to rent out rooms who would not do so otherwise. To bring landlords to market, AirBnB needs to subsidize them in various ways—e.g., reducing initial listing fees, producing professional photography of the premises, etc.⁵⁶ AirBnB earns a profit mainly from service fees charged to renters. The renters come from all over the world, and contribute to the profitability of AirBnB, but it is arguably the participation of the property owners that enable the success of AirBnB's business.

⁵⁶ Ben Edelman, *The Market Design and Policy of Online Review Platforms*, 33 OXFORD REV. OF ECON. POL. 635. A main threat to AirBnB's profitability is other online booking websites (e.g., Booking.com) accessing the same landlords, i.e., enticing the latter to multi-home. See Harrison Jacobs, *Airbnb is in a war with Booking.com, and taking advantage of that fact can save you a ton of money*, BUSINESS INSIDER (Aug. 15, 2018), <https://www.businessinsider.com/airbnb-bookingcom-save-money-travel-2018-8>.

Thus it is possible to tell a story similar to the German carmaker purchasing advertising space on Google and Facebook, or the online seller paying a commission to Amazon, except with the seller and buyer's roles reversed. It seems plausible to say that tourists' preferences and demand are un-altered, or at least altered much less, by AirBnB. The possibility of transactions through AirBnB—and therefore of additional consumer surplus, from which AirBnB extracts the majority of its profits—results from a rightward shift of the supply curve of properties. Thus AirBnB's profit can be viewed as location-specific, not merely because the properties listed have specific physical locations, and not even just because the consumption of the tourists occurs in the same locations, but because the interaction between AirBnB and landlords is what created the possibility of the transactions in the first place. Moreover, the deployment of AirBnB's technology or business model is not sufficient in itself and requires the participation of property owners; *and* the deployment of AirBnB's technology in one country seems not to interfere with such deployment elsewhere.

Here again we observe a striking pattern. The platform (AirBnB) can earn a profit from payments received from the consumer side, while the origin of that very profit may have more to do with the other, supplier, side. Note that we are talking about the profit AirBnB earns from renters. AirBnB may also earn a profit from the fees it charges landlords (although that is unlikely). The landlords may also earn a profit from payments from tourists. These latter profits may, for independent reasons, be attributed to the landlord's jurisdiction, and may already be subject to various taxes in that jurisdiction.⁵⁷ None of them, however, should be confused with

⁵⁷ The landlord presumably is subject to the property jurisdiction's income, property and consumption taxes. AirBnB may not be subject to tax on payments from landlords under common income or consumption taxes in the absence of a permanent establishment, but could be so subject under non-standard arrangements.

the profit AirBnB earns from charging tourists. It is this profit whose connection with the property jurisdiction would remain hidden, but for the type of profit-attribution reasoning articulated above.

The AirBnB example illustrates an important point: “hidden” LSR earned by digital platforms do not arise only in consumer jurisdictions. Therefore “user value creation” on digital platforms should not be conflated with participation by consumers alone. Indeed, a large array of two-sided business models subsidize the producer and not the consumer side. For example, despite the plausibility of stories of Uber’s exploitation of drivers, it is generally thought that on ride-sharing platforms, drivers are subsidized (to bring them to market) and payments from consumers are the source of platform profits. In gaming, gamers generate profit for the providers of consoles while game developers are subsidized. In operating systems, individual users of computers generate profit for the likes of Microsoft and Android while app developers are subsidized. In all these cases—and in contrast to the examples of Google, Facebook, and Amazon Marketplace—the hidden LSRs are on the producer’s side.

This is the fundamental reason why, as Part III explains more fully, the new claims to taxation generated by two-sided platforms, arising from the divergence between the jurisdiction of LSR and the jurisdiction of payment/income recognition, do not necessarily allocate taxing rights from source or producer countries to destination or consumer countries. The DST’s aim is arguably to enable the taxation of LSR, which can arise either in a producer or a consumer jurisdiction. Therefore, the DST should not be understood as purely “destination-based.”⁵⁸

⁵⁸ One might note that the conflation of “user value creation” with consumer involvement threatens to muddy ideas even among proponents of the DST. For example, the EC and the UK DST proposals all refrained from taxing gaming, on the ground that the main value creation in the business comes from the providers of content, not from the consumers of content. But this merely considers the taxation of gaming

Conversely, proposals for destination-based apportionment tend to consider location specific rent only on an ad hoc basis. Indeed, I will argue that from a normative perspective, the method of geographic allocation of rent proposed in this paper is much less arbitrary than uniform allocation to consumer jurisdictions.

The AirBnB example also serves to show that not all “users” are of the same value in a platform business. For AirBnB the platform’s location specific rent is attributable to the jurisdiction where AirBnB hosts’ properties are located, but there are clearly a lot more renters than hosts among AirBnB “users.” If a tax on AirBnB’s profit (or revenue) is allocated to different countries according to how many “users” are located in each, the countries generating the LSR will hardly get to tax any of the platform’s profit. This is a potential critique of many current “user-based” proposals for allocating taxable revenue under the DST imposed on intermediation services.⁵⁹

B. Rent in One-sided Business Models

While two-sided business models offer some of the most striking examples of hidden location-specific rent, they are not the only ones. Below we consider some additional examples.

1. Direct Network Effects among Users

platforms from the side of the consumers. If one considered the tax policy issue from the side of the developers of games, however, a country in which such developers are located may take the view that platform rent arises where the game development happens, and this value is not completely reflected in the compensation the developers receive. Like AirBnB landlords, the developers capture only a small portion of the consumer surplus enabled by the gaming platform. Such surplus can be viewed as location specific to where the talents developing the games reside.

⁵⁹ *Supra* note 31.

“Direct network effects” refer to externalities among users of the same type.⁶⁰ Examples are the activities of individual users of Facebook, LinkedIn, YouTube, and Amazon who share content on these platforms, and the positive effect such activities have on other users’ participation. Network effects may provide strong incentives to users to remain or join a platform, potentially creating incumbent advantages. A platform provider can then potentially exploit such effect to earn profits, even without operating a two- or multi-sided platform (which involves indirect network effects discussed above). One example is Amazon as an online retailer (as distinguished from Amazon Marketplace). Purchasers on Amazon offer (without compensation) user reviews. The quantity and quality of user reviews affect the chances that future users will make purchases on Amazon.⁶¹ In theory, Amazon’s profitability, as a seller of goods or services, may be partially attributed to consumer reviews, the network effect among whom provides Amazon with an advantage in marketing. In this sense, “user-created value” contributes to the profitability of Amazon.

The reader will recall from Part I that current DST proposals in principle exempt the online provision of goods and services. Putting aside data transmission, advertising and intermediation both involve two-sided businesses. No business model involving only direct network effects falls within the DST’s scope. This can be interpreted as reflecting two related difficulties in identifying location-specific rent in one-sided business models. First, the contribution of user participation to platform profit may be uncertain. In comparison to other aspects of Amazon’s business strategy, for example, the impact of user reviews on Amazon’s

⁶⁰ Paul Klemperer, *Network Goods (Theory)*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS (Steven N. Durlauf & Lawrence E. Blume eds., 2008).

⁶¹ For empirical studies on the effect of user reviews on consumer and producer surplus, see Chunhua Wu *et al.*, *The Economic Value of Online Reviews*, 34 MARK. SCI. 739 (2015); Alan T. Sorensen, *Bestseller Lists and the Economics of Product Discovery*, 9 ANNU. REV. ECON. 87 (2017).

profit may be relatively small. Second, one-sided business models by definition extract payments from users. In contrast to two-sided business models, it is generally hard to distinguish, in one-sided models, the profit attributable to the products sold from the profit attributable to marketing, even if both elements are present. It might be argued that any market power a firm gains from direct network effects is no different from other ways a firm may reduce competition, e.g., through product differentiation.⁶²

However, the possibility that direct network effects' contribution to platform profits can be measured should not be ruled out.⁶³ In the case of such measurable rent, there is still an important sense in which our previous argument uncovers its hidden location. Direct network effects are the product of user participation enabled by platform technology. To conclude that such effects are attributable to the location of the users, it is still helpful to confirm whether the operation of the platform in one country interferes with its operation elsewhere. If the answer is no—if, that is, the platform technology's deployment is non-rival and free from opportunity cost—then it is coherent to attribute the rent accruing to the technology to the country of the users. Differently put, it is coherent to insist that such rent is immobile rent.

Finally, it is worth noting that the ultimate purpose of identifying LSR in our discussion is to tax such rent. Platform rent is a distinct tax base from the consumption purchases generating the rent. Thus, even if a platform's online sales are already subject to general consumption

⁶² Product differentiation generally reduces competition and create opportunities for mark-up. Conceptually it is not possible to say whether product differentiation moves the demand curve or the supply curve. Christopher S. Yoo, *Intellectual Property and the Economics of Product Differentiation*, In *1 Research Handbook on the Economics of Intellectual Property Law* (Ben Depoorter & Peter Menell eds., Edward Elgar 2018).

⁶³ Suppose that user reviews in Chinese are shown to substantially increase the number of Chinese buyers making purchases from an online retailer: there may then be a case that the corresponding increase in the retailer's profit should be attributed to the location of the community of Chinese users.

taxation (i.e., through a value added tax) in the country of the buyer, it makes sense to discuss whether an additional tax should be applied to the platform, on account of and in an attempt to capture LSR.⁶⁴

2. Personalization of Remote Services

One can distinguish between two frequently mentioned features of digital platforms on the user side. The first is the network effect already discussed. The other is personalization: users' activities on a platform may reveal a lot of personal characteristics—with geolocation being the most obvious example—which may help both the platform provider and third parties to find profitable transactions with users. Personalization itself increases demand: the revelation of personal information (e.g., geolocation), apart from network effects, may generate new profitable transactions.

In justifying its DST proposal, the UK government has argued that information-generating user activities that allow the personal customization of services give rise to a new form of user-created value, thereby justifying the user jurisdiction's claim to taxing profits from the remote delivery of goods and services.⁶⁵ There are two ways of interpreting this argument. First, one can understand the argument to be that, prior to the advent of the digital economy, distribution and marketing functions would have been carried out by dedicated subsidiaries or permanent establishments. Such a traditional business presence in the consumer country (e.g., an

⁶⁴ A general consumption tax applies to all products and services provided by all sellers, regardless of what they earn in LSR.

⁶⁵ *UK 2018 Paper*, *supra* note 1, at paragraphs 2.12-2.15. Under the current international tax regime, such profits are taxed only in the producer jurisdiction.

Apple Store) can generate its own location-specific rent.⁶⁶ In the future, however, more and more such functions might be implemented virtually, where consumer participation and the consequent revelation of personal information would enable personalization. Because remote personalization replaces dedicated sales or distribution subsidiaries (or PEs), the producer surplus that would have been attributable to a subsidiary (or PE) should continue to be attributed to the customer jurisdiction.

Such an argument would be obviously and unacceptably weak. A new business model has replaced an old business model. It is simply bizarre to claim that countries remain entitled to impose a tax based on the old business model because the new model replaces it.⁶⁷ A second, more plausible interpretation of the UK's argument is as follows. A technology (the intellectual property ownership of which can be located anywhere in the world) is deployed in a consumer country to shift consumer demand there for various products. Such a shift occurs independently of any changes in producers' supply curves. It leads to additional transactions and thus increased consumer and producer surplus, a portion of which the technology owner extracts. The consumer country may claim a portion of that surplus extracted, on the ground that it can arise without changes to the behavior of producers and consumers elsewhere.

C. Data as a Source of Rent

It is clear how the monetization of user data might represent a form of LSR: after all, the data is about users in particular locations. However, it is unclear whether in the near future, the

⁶⁶ See Joseph Bankman, Mitchell Kane & Alan O. Sykes, *Collecting the Rent: The Global Battle to Capture MNE Profits*, TAX L. R. (forthcoming).

⁶⁷ It is like arguing that before international transportation costs are lowered, most production serving the domestic market happened domestically; therefore, all foreign production serving the domestic market today should be taxed like domestic production.

sale of data (even if not further regulated) can be a sustainable source of profit for platform companies. One might take the view that the activities digital platforms currently make profit from do not require the most advanced uses of data. This is very clear in the case of advertising. The success of intermediation services—which reduce transaction costs among parties that already are close to transacting with one another—also may be more attributable to smart or lucky market design than to powerful uses of data. Moreover, there is the consideration that, of all the data that Google collects, *Google* is most likely to be able to make the most valuable use of it. A platform company that does not know what use to make of the data it collects (and must sell the data to third parties) seems unlikely to remain competitive and stay in business. The most sophisticated exploration of data (e.g., using machine learning) will remain proprietary to the platforms themselves. Because of this, a tax on the pure sale of data might raise little revenue even in the long term.⁶⁸

The mining of data could well be the most important aspect of digital services in the future, but the business models of such future services may also well be different from the ones today. Posner and Weyl, for example, argue that data is nowadays free mostly because of the monopsony power of digital platforms.⁶⁹ They suggest that social welfare can be improved if platform companies actually compensate users for the data they provide (especially if the users can play crucial roles in assisting the application of machine learning to the data). It is thus

⁶⁸ This suggests that a DST imposed on the sale of data may serve purposes other than expropriating corporate rent. Maybe it would discourage data collection and sale. Implementing such an objective, however, may have unintended consequences: *see* Francis Bloch & Gabrielle Demange, *Taxation and Privacy Protection on Internet Platforms*, 20 J. PUB. ECON. THEORY 52 (2018).

⁶⁹ Eric Posner & E. Glen Weyl, *Data as Labor*, in *RADICAL MARKETS: UPROOTING CAPITALISM AND DEMOCRACY FOR A JUST SOCIETY* 205 (2018).; Imanol Arrieta-Ibarra et al., *Should We Treat Data as Labor? Moving Beyond “Free”*, 108 AM. ECON. ASS. PAPERS AND PRO. 38 (May 2018).

somewhat speculative to analyze how data generates platform rent aside from advertising, intermediation, and the online provisions of goods and services. Nonetheless, plenty of narratives have been offered as to how human data can feed into algorithms to generate labor-replacing technology.⁷⁰ Human data is literally a kind of natural resource in such narratives, and it is easy to understand how the countries in which the human beings are located may want to capture some of the rent extracted from such resource.⁷¹

D. Summary

The overall claim of this Part is that digital platforms earn significant forms of LSR. Platform LSRs are often distinctive for two reasons. First, in multi-sided platforms, the location of rent may be systematically different from the source of payment. Second, much platform rent is associated with the mobile deployment of technology, but because the technology by its very nature supports non-rival uses, the rent it generates can be coherently regarded as immobile.⁷²

The remainder of the Article will argue that taxing platform LSR should be seen as the main motivation of the DST. So understood, DST proposals do not embrace allocation of taxing rights to either destination or source countries. Instead, the idea is to allow the country where the rent is located to tax the rent. This can be the destination country of final consumers—which we can imagine to be the case for Amazon Marketplace (though the reality may be more complex)—or the source country of suppliers of goods and services—which we can imagine to be the case for AirBnB (though, again, the reality may be more complex). There may even be scenarios

⁷⁰ See Kai-Fu Lee, *The Real Threat of Artificial Intelligence*, THE N.Y. TIMES (June 24, 2017).

⁷¹ See International Monetary Fund, *Corporate Taxation in the Global Economy* (2019).

⁷² It is quite possible for these two features of platform rent to be found in rent earned by firms that are not digital platforms. There is no reason to limit the applicability of the rent-attribution logic advanced here to digital platforms.

where the LSR arises in a residence country. Take crowd-funding platforms, for example. Existing empirical research suggests that the cross-side externalities on such platforms are asymmetrical: funders care much more about the participation of entrepreneurs than the other way around.⁷³ However, there are still important network effects on the funders' side.⁷⁴ It is thus logically conceivable that in some future crowd funding models, the platform rent is found primarily in the funders' side—which would justify allocating taxing rights to the “resident” country, using the terminology of current international income taxation.

The idea that LSR can arise in destination, source, or residence countries is key to untangling the extraordinary amounts of confusion, about the relationship between “user value creation” and income taxation, that one finds in recent discussions about the DST. In the next Part, we will see that traditional income taxation has paid little attention to LSR arising from market structure; nor is it clear that it can—or should—be reformed to take market structure into account.

III. RENT ALLOCATION AND THE CORPORATE INCOME TAX

A. Profit Attribution under the Traditional Corporate Income Tax

Governments around the world rely on a rich array of tax and non-tax instruments to raise revenue from the rent-rich sectors of their economies. In the natural resource realm, for example, governments can generate revenue through auctioning licenses for resource extraction, taking

⁷³ Ferdinand Thies, Michael Wessel & Alexander Benlian, *Network effects on crowdfunding platforms: Exploring the implications of relaxing input control*, 28 INFO. SYSTEMS. J. 1239 (2018).

⁷⁴ Paul Belleflamme, Thomas Lambert & Armin Schwiendacher, *Network Effects in Crowdfunding* (2018), <https://ssrn.com/abstract=3259191>.

public ownership in resource extraction enterprises, enacting gross-revenue-based royalty regimes, levying sector-specific rent taxes on extraordinary, “excessive-” or “super-” profits, or imposing export tariffs, among other means. Recently, Professors Bankman, Kane and Sykes have argued that if governments were interested in “collecting the rent” arising from the consumer base in their countries, they could modify the corporate income tax, or adopt suitable procurement policy, impose import tariffs, fashion particular anti-trust policy, among other tax and non-tax legal options. That income taxation is only one of the many policy instruments that governments have at their disposal to claim the public share of LSR corresponds to another important feature of rent taxation: when above-normal profits are earned, governments can impose higher rates of taxation without distorting business decisions. Taxing rent is in many ways just a rather different enterprise from taxing income or consumption generally.

The relationship between the corporate income tax and the goal of taxing LSR is an uneasy one. Many economists recognize taxing foreign shareholders on rent earned by domestic corporations (on domestically-located activities) as one of the main arguments for keeping the source-based corporate income tax.⁷⁵ Yet while some advocate reforming business income taxation to tax only LSR,⁷⁶ others advocate reform options that completely abdicate that goal.⁷⁷ This suggests that transferring rent from private profits to the public fisc of the country in which the rent arises may merely be a (frequent) side effect of the corporate income tax, but not its goal.

⁷⁵ Alan J. Auerbach, Michael P. Devereux & Helen Simpson, *Taxing Corporate Income*, in DIMENSIONS OF TAX DESIGN: THE MIRRLEES REVIEW 837, 870-71 (Adam Stuart et al. eds. 2010).

⁷⁶ See Robin Broadway & Jean-François Tremblay, CORPORATE TAX REFORM: ISSUES AND PROSPECTS FOR CANADA (2014).

⁷⁷ Alan J. Auerbach, Michael P. Devereux, Michael Keen & John Vella, *Destination-Based Cash Flow Taxation* (Oxford Univ. Ctr. for Bus. Tax., Working Paper No. 17/01, 2017), <https://eml.berkeley.edu/~auerbach/CBTWP1701.pdf>.

To more clearly see the tenuous relationship between the corporate income tax, on the one hand, and the allocation of taxing rights according to rent location, on the other, it is useful to look directly at the general structure of the international allocation of taxing rights under the traditional income tax. Countries typically have the right to tax the income of their “residents,” including corporations. For non-residents, “income” is roughly divided between “business profits” and other types of income. A country generally gets to tax a non-resident on the latter’s business profits if such profits are attributable to a PE. Indeed, profit attribution to a PE, along with the allocation of profits among related enterprises, are the two main ways in which profits are assigned to different locations. For other types of income, income attribution is largely an exercise in tracking the source of payment.⁷⁸

The attribution of business profits to a PE, however, is at its heart a highly indeterminate exercise, for two reasons. There are generally two policy motivations for finding that a non-resident has a PE in a given country. The first is that the non-resident has enough of a physical presence to fulfill tax compliance obligations and to be administrable. That is, a PE is purely an administrative or compliance threshold. This means that the existence of a PE in a country may say *nothing* about how much profit is earned in that country: an obligation to calculate profit and the calculation of that profit are simply completely different things. A second reason to find the existence of a PE is based on a judgement that sufficient local physical activity generating local profit has transpired: that is, an implicit judgement is made that *some* (not insignificant) amount of profit is attributable to a country, and a more precise calculation is warranted. However, the

⁷⁸ There are of course exceptions: for rent and royalties, the place where the tangible or intangible asset is used for business pursuits may be relevant; for interest, the place where borrowed funds are used and where interest expenses are claimed may be relevant; for dividends, the place where corporate profits are earned may be relevant; and so on. These are clearly derivative on the attribution of business profit by residence, PE, or among related parties.

principles generally guiding the explicit attribution of business profit to a PE (under Article 7 of tax treaties) do not shed much light on the intuitions behind the initial, crucial, but implicit judgment about profit attribution (under Article 5).

Therefore, the traditional approach to the ascription of profit to geographical locations is heavily dependent on the set of implicit intuitions about the significance physical presence in the PE concept. Many of these intuitions now seem outdated. For example, the idea that the storage and delivery of goods constitute mere preparatory or auxiliary business activities now seem laughable in light of Amazon's business model. The idea that advertising, promotion, and gathering market information are similarly insignificant contributors to business profits has also been proven wrong. But just as importantly, because the PE concept always had an administrative component—it was more about deciding whether an obligation to calculate local business profit should be imposed than about the determination of how much profit there is—it was always, arguably, a weak guide to profit attribution.

Of course, many specific contextual rules and conventions no doubt helped to make profit attribution more determinate, e.g. management accounting within different units of a single corporation or corporate group, legislative rules on the apportionment of interest expenses, profit-split methods under transfer pricing, etc.. But such rules and conventions tend either to have meaning mainly in the related party context, or are otherwise quite removed from concerns of identifying LSR.

B. The Arm's Length Principle versus Market Structure

Simple reflection suggests that transfer pricing methodology should be entirely uninformative about platform rent location. Transfer pricing issues arise when the pricing of

transactions among related parties does not matter to the overall profit of the multi-national corporation group. Pricing decisions on different sides of a digital platform, however, are central to the platform's profit maximization strategy.

Consider the arm's length principle (ALP). Once rent is earned from a digital platform, it may be shuffled among different entities in an MNC group, and the ALP may be useful for preventing this traditional type of profit shifting. But the inquiry into user value creation is primarily one about who, among parties already at arm's length (e.g., the platform and the different sides it intermediates), is responsible for corporate rent earned. It would be very odd to be told that the answer to this question is: "We will first pretend that the third-party users are not third parties but a part of the digital platform's business operations (e.g., a 'significant digital presence' carrying out 'significant economic activities'). We will then attribute profits to this fictional business unit by further pretending that it is dealing with the platform company at arm's length." The application of the ALP in the context of Article 7 is already devoid of meaning in many contexts (such as a PE) where there is no related party transaction to begin with (and the threat from mis-pricing such transactions to correct profit attribution is itself fictional). It seems that its application to two-sided business models would generate only gibberish.

It does not help that many of the rules used in traditional transfer pricing may also run counter to intuitions about locating platform rent. One such intuition articulated in Part II is that once a platform technology is applied to *Country X* to generate profit, assuming that the deployment of that technology for *Country X* users does not exclude the deployment of the same technology elsewhere, the entire economic rent generated by the technology in respect of *Country X* should be attributed to *Country X*. It is likely that current transfer pricing doctrines would resist this type of profit attribution, and insist that managerial decisions, legal ownership

of intellectual property rights, and the bearing of financial risks should entitle a company to residual (and extraordinary) profits outside the user jurisdiction. A strong case can be made that such disagreement about the fundamental principles of profit allocation should be discussed explicitly and separately at the outset, before agreeing that reforming the income tax is the best or only way in which concerns about the mis-attribution of LSR should be addressed.

Overall, the most general devices for the geographical attribution of profits under international income taxation include corporate residence, the ALP when allocation among related entities are concerned, the intuitions and implicit judgments under Article 5, and considerations of sources of payments. It seems clear that none of these devices reflects the type of reasoning regarding how to locate platform rent considered in the last Part. Each of these devices is likely to generate mis-attributions in light of that reasoning.⁷⁹ Strictly speaking, this can be viewed as a critique of the traditional international tax regime only if we assume that the corporate income tax *should* enable countries to capture the economic rents arising from them. That assumption itself, however, should not be accepted without questioning. As remarked on at the beginning of this Part, there is little evidence that governments restrict themselves generally to the corporate income tax for claiming a public share of LSR.

C. The Normative Underpinnings of Profit Attribution

⁷⁹ The examples relating to indirect network effects showed that source of payment are often poor indicators of the location of platform rent. The intuition about immobile rent from the deployment of technology is frequently in conflict attributing profit to the corporate owners of intangible assets.

The (exclusive) attribution of platform rent to locations is motivated by both efficiency and fairness considerations. It is important to make these considerations more explicit than we have so far.

Some of the efficiency criteria for assessing the identification of LSR and the use of LSR so-identified to assign taxing rights are familiar.⁸⁰ A tax on true economic rent is non-distortionary with respect to both short-term production decisions and long-term investment decisions. The correct measurement of true economic rent earned by platform firms as opposed to quasi-rent is thus an important policy consideration. The association of (correctly measured) rent with particular locations raises a different efficiency concern: the assignment of location should not be easily manipulable. The examples offered in Part II suggest that this criterion may be satisfied by the rent attribution reasoning proposed there. Platform users are generally unrelated to the platforms and network effects importantly depend on user size. There should be a strong presumption, therefore, that platforms take their users' locations as given. This seems to hold true not only for users that are individual consumers, but also for landlords, drivers, online sellers, game or app developers, and all of the other users that platforms try to subsidize and bring to market.

But efficiency is far from the only attraction of the approach to allocating platform rent outlined in Part II.⁸¹ Indeed, it is hard to see how any argument about the ways business profits *should* be allocated among nations for tax purposes can avoid addressing questions about fairness. Each step in the two-step approach of identifying the location of platform rent discussed

⁸⁰ In Part IV we will see that some less familiar efficiency considerations may also possess high importance for designing taxes for platforms. For example, the DST may serve as a corrective tax that deters excessive entry into markets that have natural monopoly features.

⁸¹ That the assignment of taxing right over LSR is not just a matter of economic efficiency is emphasized in Mitchell Kane, *A Defense of Source Rules in International Taxation*, 31 YALE J. ON REG. 311 (2015).

in Part II makes implicit fairness claims. In the cases of cross-side externalities, the perspective from fairness is that it is fair and equitable for the country that generated additional consumer or producer surplus (as the case may be) in another country to claim a portion of such surplus that is paid over to the platform. In the case of attributing rent from the non-rival use of technologies (even if invented elsewhere), the perspective from fairness is that the inventors of technology, as valuable and unique as their talent and entrepreneurial spirit may be, should not expect to keep the entire residual profit from their invention, and nor should their countries of residence.

A sure sign of fairness claims is that they invite moral debate and deliberation. Suppose that American companies dominate the world in inventing powerful technologies accessed by users in all countries in the world, and that they earn monopoly profits in business models that depend on the participation of the users. Although the United States is the country in which the technologies are invented, by the profit-attribution reasoning described in Part II, only the profit derived from American users are attributable to the United States. In the context of taxation, this means that the United States need not be the primary claimant to the profits that result from the technologies its companies invent. As long as the use of the technologies is non-rival, the countries in which the users are located may turn out to be primary claimants instead. It would of course not be surprising if some Americans find such a claim provocative. It *would* be surprising, however, if no American can recognize that the claim is intelligible and prima facie eligible for further moral examination.⁸²

⁸² In a companion paper, Nigar Hashimzade and I discuss how attributing rent from the non-rival use of technology to the countries of users may be especially important in the future of labor-replacing artificial intelligence (AI). See Wei Cui & Nigar Hashimzade, *The Digital Services Tax as a Tax on Location-Specific Rent*, CESifo Working Paper no. 7737 (CESifo Group Munich), <https://ssrn.com/abstract=3321393>.

In Part II, I stressed that the exercise of locating platform rent often does not lead one to the jurisdictions of consumers, and therefore the emphasis on countries of “user value creation” (interpreted in terms of platform LSR) in various governments’ justifications for the DST should not conflated with the view that more taxing rights should be allocated to “destination countries.” However, allocation by LSR and allocation by “destination”⁸³ differ not only in respect of results, but also, equally (or perhaps more) importantly, in terms of the nature of the arguments in favor of them. Allocation by LSR is supported *by both efficiency and fairness arguments*. Allocation by destination, however, has been promoted by its advocates *only on efficiency grounds*.⁸⁴ Many have reacted to proposals of destination-based allocation by asking: what about the countries where things are produced—why shouldn’t those countries get a share of corporate profits?⁸⁵ Despite this common reaction expressing a perception of the potential unfairness of destination-based allocations, their proponents have provided little by way of response.

Ultimately, any discussion of the desirable allocation of taxing rights among countries that does not speak to equity concerns is unlikely to hold up to scrutiny. It should be emphasized, therefore, that the method of identifying location specific rent that is used in this Article to motivate the DST inherently makes normative claims about equity.

Having made this important observation, I now turn, in the last Part, to the distribution and efficiency properties of the DST.

⁸³ The meaning of “destination countries” remains unclear in proposals for destination-based profit allocation. *See, e.g.* Michael Devereux et al., *Residual Profit Allocation by Income* (Oxford U. Ctr. For Bus. Tax. Working Paper No. 19/01, 2019), https://eml.berkeley.edu/~auerbach/WP1901_0.pdf, where destination includes the countries both of consumer and of business purchasers.

⁸⁴ That is, assigning taxing rights over MNC profits by destination is supposed to remove incentives for socially wasteful international tax planning, reduce distortions to firm investment decisions caused by the current international tax regime, and (allegedly) introduce greater simplicity to tax design.

⁸⁵ Wei Cui, *Destination-Based Cash-Flow Taxation: A Critical Appraisal*, 67 U. TORONTO L.J. 301 (2017).

IV. INCIDENCE AND EFFICIENCY PROPERTIES OF THE DST

Almost any tax imposed on digital platforms' cross-border transactions—be it the DST, the traditional corporate income tax, the VAT or sales taxes, or various excise taxes—can be expected to have empirically complex effects. This is first because platforms by definition operate in markets characterized by imperfect competition. Very detailed information about demand elasticities appears necessary to predict how tax costs would be borne by platform firms, and/or passed through to others.⁸⁶ Second, empirical complexity also arises because the measurement of rent is imperfect under both the income tax and any real-world rent taxes. So even taxes based on net income will be distortionary, again with complex incidence effects. Finally, understanding the welfare effect of distortionary taxes also requires one to take into account pre-existing distortions. For now, all that those interested in these aspects of tax policy can hope for is an approximately correct conceptual framework with which to evaluate future empirical findings.

This Part does not purport to provide that framework. Instead, even short of such a framework, I show that some common claims about the DST's likely effects are ill-conceived. Two types of claims are particularly egregious. First are claims to the effect that the DST must be a bad tax because it is based on revenue, and thus can be imposed even when a platform company shows an accounting loss. Second are pronouncements that the cost of the DST will simply be passed onto the consumers of countries imposing it. Along the way in explaining the

⁸⁶ Relevant empirical studies are also, not surprisingly, still rare: most new taxes on digital platforms are still merely proposed and not implemented.

falsehood of such claims, this Part also discusses a number of analytical considerations important for understanding the DST's incidence and welfare effects.

A. The Zero Marginal Cost Scenario and the Irrelevance of Accounting Losses

A common feature of digital firms is that they operate with very low, often negligible, marginal costs. The placement of each ad, the facilitation of each online transaction, indeed the provision of digital content and much digital service to an additional customer, are largely automated with little additional labor and other input from the platform company, once the platform is running. This means that the revenue of a platform company from each additional transaction is essentially identical to its marginal profit from the transaction. A tax on revenue is approximately a tax on marginal profits. It follows that where zero marginal cost is a good approximation, the platform company's marginal production and pricing decisions should be the same under a revenue tax or a profit tax.⁸⁷

When a platform's marginal cost is not exactly zero, revenue taxation may affect a platform company's business model. For example, if a tax on one side of the platform reduces profit earned from that side, the company may aim to shift its profit generation to the other side. Nonetheless, some theoretical models show that the platform may not try to shift the tax through price increases. One earlier study, for instance, demonstrates that when newspaper subscriptions are subject to taxation, the newspaper may lower (rather than raise) the price of subscription,

⁸⁷ This point has been emphasized in most recent theoretical analyses of the taxation of digital platforms. See Marc Bourreau et al., *Taxation of A Digital Monopoly Platform*, 20 J. PUB. ECON. THEORY 40 (2018), at 45-6; Jacques Cremer, *Taxing Network Externalities*, in TAXATION AND THE DIGITAL ECONOMY: A SURVEY OF THEORETICAL MODELS (France Stratégie, Feb. 26, 2015); Hans Jarle Kind & Marko Koethenbuerger, *Taxation in Digital Media Markets*, 20 J. PUB. ECON. THRY. 22 (2018), at 25, 34.

because doing so would (i) increase newspaper circulation, (ii) thereby attract additional advertisers and increase profit on the advertising side, and (iii) at the same time compensate readers for the increase in advertisement with the lower subscription price.⁸⁸ More recent studies have demonstrated similar possibilities for platform firms that charge both users (through subscription fees) and advertisers and are subject to taxes on revenue on both sides.⁸⁹ In these scenarios, one can say that the platform firm fully bears the burden of the tax.

The preliminary nature of such existing theoretical analysis precludes policy-relevant predictions. Yet it is worth noting that all theoretical work focuses on how the profit-maximizing pricing strategy of the platform firm changes with the imposition of a revenue tax, in the presence of positive marginal cost. The idea that the firm makes a profit as a monopolist or oligopolist is not in question. Yet much of the outcry against DST proposals stresses that many platform companies are loss making or “have low profit margins.” Are the theorists simply out of touch?

The answer, quite clearly, is “no.” Much of this is familiar from the taxation of natural resource extraction. Many governments impose gross-revenue-based royalty regimes in the natural resource sector. Suppose that a royalty is collected from the first dollar of oil that a firm extracts. This does not mean that the government has overestimated the profitability of that unit of the firm’s oil revenue, or that it mistook a low-margin business for a high-margin business. Rather, both the government *and* the oil-extraction firm expect the firm to earn monopoly rent over time. It is just the government does not want to wait until the firm recovers its upfront costs

⁸⁸ Hans Jarle Kind et al., *Tax Responses in Platform Industries*, 62 OXFORD ECON. PAPERS 764 (2010).

⁸⁹ Bourreau et al., *supra* note 87, at 47-50; Kind & Koethenbueger, *supra* note 87, at 33. Although these scenarios are presented mostly as theoretical possibilities—there is as yet insufficient empirical information about key theoretical parameters for one to know whether these possibilities apply to the real world—numerical examples are given to illustrate their plausibility.

to collect revenue, and/or does not want to share the risk that the firm is exposed to from future price fluctuations. Similarly, accounting profits/losses for platform firms can be simply uninformative about the “profit margin” of platform operations. Many platform firms incur large outlays to expand operations or to develop assets for generating future profits. High cost relative to revenue usually reflects high fixed costs, before the benefit from the economy of scale is fully realized. The slowness with which fixed costs are recovered explains the accounting losses (or “low profit margins”), but this is consistent with the marginal profitability of revenue generation, and the idea that the platform earns “quasi-rent” on sales.

Of course, governments should be concerned about imposing taxes that unduly discourage risk taking. Revenue taxes on resource extraction are characterized by some well-known policy trade-offs, and some of these, though not all, apply in the platform context.⁹⁰ We will return to these issues in the discussion of platform competition below. The points to be made here are simply that: (i) talks of platform firms as having “low profit margins” are misleading insofar as they suggest either that platforms have high marginal costs, or that platforms even price on the basis of marginal cost; and (ii) the expectation that a tax on platform rent should be imposed only when the platform “turns a profit” sets an arbitrary benchmark, one that is already rejected in real world practices of rent taxation.

B. Pass-through of Positive Marginal Costs

When platforms have positive marginal costs, on some platforms it is certainly possible, or even likely, for some of the cost of a tax on platform revenue (such as the DST) to be passed onto final consumers. Recent empirical work seems to show, for example, that the enforcement

⁹⁰ For further discussion, see Cui and Hashimzade, *supra* note 82.

of sales and hotel taxes on transactions on AirBnB resulted in higher listing prices, with most of the burden of the taxes passed onto final consumers.⁹¹ Yet findings like this are consistent with both the underlying assumptions and the policy intent of a DST designed as a tax on LSR. In terms of underlying assumptions, the empirical evidence supports the supposition that in AirBnB's business model, landlords are subsidized, and profit is made from charging guests.⁹² Favorable pricing on the landlord side would be incompatible with passing the cost of tax collected by AirBnB onto landlords, whereas passing the cost of the tax onto guests is consistent with charging monopoly mark-ups on sales to the latter.

In terms of policy intent, recall that the purpose of hotel taxes is to export the cost of local revenue to non-residents. The DST shares a similar purpose: it tries to claim a share of the portion of the consumer surplus that platforms like AirBnB extract from foreign consumers, which in turn may result in AirBnB asking for a greater portion of the consumer surplus. Such pass-throughs to final consumers would be a feature, not a bug, of DST design.

There are other situations where claims that the DST would hurt consumers are implausible, rendering unnecessary any consideration of whether the pass-through effect on consumers is benign. Consider online advertising. In Part II, we have seen that Google and Facebook charge advertisers while subsidizing individual users of their search and social media functions. Passing the cost of the DST on advertising to individual users would not be a wise

⁹¹ Andrew J. Bibler, Keith F. Telster & Mark J. Tremblay, *Inferring Tax Compliance from Pass-through: Evidence from Airbnb Tax Enforcement Agreements* (2018); Eleanor Wilking, *Hotel tax incidence with heterogeneous firm evasion: Evidence from airbnb remittance agreements* (2016). None of these existing studies considers how such enforcement may have affected AirBnB's own profitability.

⁹² This supposition is also consistent with recent models studying the impact of AirBnB on local property prices. See Kyle Barron, Edward Kung & Davide Proserpio, *The Sharing Economy and Housing Affordability: Evidence from AirBnB* (2018).

response to the introduction of the DST, since it would simply reduce usage, which would in turn reduce all advertisers' interest in the platform and therefore platform profit. Instead, Google or Facebook would be better off passing the DST cost (partially) to advertisers (assuming, even though it is theoretically possible,⁹³ that they would not absorb the entire DST cost themselves). Some producers may find purchasing ad space on Google or Facebook no longer worth the money, but others will absorb the cost. Both suffer losses from the DST's introduction. However, advertising costs represent fixed and not marginal costs of production. For producers facing competitive markets, increased advertising costs would reduce profits but not raise product prices.

Note, in addition, that when online advertisers are foreign, DST-imposing countries may feel indifferent to cost pass-through by digital platforms. After all, these costs are borne because of expected producer surplus that has its origin in the DST imposing country! As with the case of cost pass-through to AirBnB guests, the taxing jurisdiction's aim is to claim a share of location-specific rent, however that rent is divided by the platform and its foreign users.

Of course, online advertisers often come from the same jurisdictions as the consumers they target. In these cases, it might be claimed that imposing the DST on online platforms merely hurts domestic producers, and nothing is accomplished by way of extracting rent from platforms themselves. Given certain assumptions about the DST and platform operations, this claim is incorrect. Suppose that the UK imposes the DST on all Facebook ads targeted at UK consumers, regardless of who places the ad. In addition, suppose that Facebook's placement of advertising at UK residents has no opportunity cost in terms of targeting advertisement elsewhere. It follows

⁹³ See sources cited in *supra* note 89.

that Facebook cannot dodge the DST by selling more UK-targeted ads to non-UK producers. Nor can it earn greater profit elsewhere by selling fewer UK-targeted ads. In this case, Facebook cannot benefit from reducing sales of advertising to UK producers by raising prices. That, of course, is the beauty of a tax on location-specific rent.

It is useful to contrast the DST in this regard with taxes on digital platforms aimed mainly at avoidance of traditional source-based income taxation—a distinction stressed in Part I.3. One recent empirical study examines the impact of the implementation of the UK’s diverted profit tax (DPT) on Facebook’s advertising prices.⁹⁴ Apparently, before the implementation of the DPT, Facebook booked most of its advertising revenue received from UK producers in Ireland, a low-tax jurisdiction. When the DPT was adopted, Facebook began booking its revenue from UK advertisers in the UK, a high-tax jurisdiction. Prices for advertising space directed at users in the UK, as well as at users in countries where imports from the UK represent a large share of total imports, experienced a significant rise.⁹⁵ In other words, advertisements purchased by UK producers became more expensive.

This can be explained by a theoretical model in which the digital platform decides to place ads from producers from two different countries, one with high tax and one with low tax. When profit from selling advertising to the high tax country becomes less profitable (due to a higher profit tax), the platform may try to increase advertising revenue from the other country

⁹⁴ A. Cuevas et al., *The Taxman Calls. How Does Facebook Answer? Global Effects of Taxation on Online Advertising* (NET Instit., Working Paper #17-09, Sept. 2017).

⁹⁵ *Id.*

instead. This way, the total number of ads placed on the platform does not increase, which helps the platform avoid alienating its users with excessive advertising.⁹⁶

It is reasonable to expect that the UK DST's impact on Facebook, however, would be different from the impact of the DPT. The DST would tax *all* Facebook revenue from advertisement targeted at UK consumers. And it would not tax Facebook revenue from advertisement targeted at consumers elsewhere. Under such a tax, Facebook would not have the choice, as in the above model, of maximizing profit by choosing among advertisers from different countries: the DST would be imposed (when ads are targeted at UK users) or not (when ads are targeted elsewhere) regardless of the location of the ad purchasers.

To be sure, it is important to acknowledge that current DST proposals, when applied to online intermediation, do not distinguish between users from jurisdictions in which rent arises (generally the subsidized sides) and users elsewhere. When the DST is levied on transactions that do not correspond to rent in the levying jurisdiction, it may hurt domestic consumers or businesses without any impact on MNC profits. This critique of the DST would simply parallel well-known critiques of source-based corporate taxation. Indeed, the DPT is an income tax and not a tax on revenue. It is not specifically targeted at digital platforms, and simply tries to reinforce traditional source-based corporate taxation (by effectively expanding the definition of PE). Any analogy between the DST and DPT would go to show that when the DST is not designed to track LSR, it may take on the flaws of traditional source-based taxation. But what this implies is that the DST *cannot be improved* by making it more like the traditional income tax, for example by changing it to conform to the EC “long-term solution,” which expands

⁹⁶ *Id.* Cuevas et al. conclude that if countries are generally interested in imposing taxes like the DPT on digital platforms, they are better off coordinating, since governments unilaterally adopting source-based taxes are likely to set tax rates too low.

source-based taxation through introducing the concept of significant digital presence. Economic analysis suggests rather the opposite.

C. Impact on Platform Competition

None of the foregoing arguments in support of the DST deny a basic problem: the DST as a revenue tax does not take the fixed cost of platform operations into account; nor does it take into account the cost of research and development that generated the technologies enabling the platforms in the first place. It may thus well generate inefficient investment incentives and produce welfare losses in the long term.

Even here, though, there is a fundamental complication: the incentives for investing in platforms in a tax-free world may be socially inefficient. Consider the following narrative, which, even if not entirely accurate, likely contains a grain of truth. The reason why platform companies often incur years of substantial losses is due not to their marginal costs, but to fixed costs. Businesses incur such fixed costs in the expectation of eventually making a profit. Indeed, investors in some platform companies seem willing to “burn money” through a (sometimes long) initial stretch, in a gambit to build market power and eventually earn monopoly or oligopolistic rent.⁹⁷ The value of such spending to capture market share accrues mainly to one firm; it has no value for competing firms. In other words, competition in markets occupied by platforms is plagued by the problem of excessive search, where the private value of search efforts exceeds its social value. A tax on firm revenue in such contexts would diminish such socially inefficient incentives. It is indeed a standard solution for the problem of excessive search.

⁹⁷ Khan, *supra* note 54.

An important strand of current research on platform competition supports this narrative. Glen Weyl and Alexander White, for instance, have suggested that many of the markets platform companies occupy are characterized by ease of entry, with many viable strategies for entrants to undermine incumbents.⁹⁸ These markets are therefore more likely to be characterized by excessive fragmentation than by quick lock-ins for (potentially inefficient) first movers. In such markets, a major source of inefficiency is excessive investment in the competition to capture monopoly rent. A tax on investment, in the form of either a tax on revenue or a tax on income without compensation for losses, can improve social welfare by deterring such over-investment.⁹⁹

This raises the general issue of how to evaluate investment incentives. It is tempting to draw a distinction between “good” investments in technology on the one hand, and venture capitalists burning money out of greed to capture monopoly rent, on the other. Yet much R&D is also characterized by both positive and negative externalities (the latter because of the possibility of excessive search). The role of tax policy in correcting inefficient investment incentives clearly requires a better understanding of these inefficiencies. Supposing that inefficient investment incentives *are* of concern in the context of platform competition, however, the issue is relevant not only for the justification of the DST but also for its design. For example, exempting smaller platforms from the DST may have the negative effect of inducing greater market fragmentation,

⁹⁸ E. Glen Weyl & Alexander White, *Let the Best ‘One’ Win: Policy Lessons from the New Economics of Platforms* (Coase-Sandor Instit. for Law and Econ. Working Paper No. 709, Dec. 2014);

⁹⁹ See also Cremer, *supra* note 87, at 11-13 (the larger is the value of users to platform companies when compared to the value of quality (which requires costly investment) for the consumers, the more incentives firms will have to overinvest, in which case a profit tax without compensation for losses can be welfare-improving).

and this could be the case regardless of whether the exemption threshold is designed as a kink or a notch.

V. CONCLUSION

In this Article I have laid out a conception of platform LSR that offers strong justifications for recent proposals for implementing a DST. This conception of platform LSR relies on two core insights. The first is that indirect network effects in two-sided business models may create systematic mis-alignments between value creation and the source of payment, and platform rent can plausibly be attributed to the side of the platform that is subsidized (to which the platform can then offer users on the other side monopoly access). The second is that rents accruing to platform technology, whether they arise from direct or indirect network effects, from personalization, or from data, should be attributed to the jurisdictions of users when the use of the technology is non-rival. Both insights, I believe, are new to discussions of the design of international taxation. DST proposals represent a genuine innovation in tax policy design in leveraging these two new insights.

Interpreting the DST as a tax on platform LSR has the effect of sharpening the distinction between DST proposals and other broad themes in recent international tax policy debates. One such theme is reforming international business income taxation. I have argued that the traditional design of international business income taxation has not focused on LSR. Nor is there agreement that taxing LSR should be a core objective in reforming income taxation. This raises the possibility that the policy motivations of the DST are simply orthogonal to those associated with income taxation. Recognizing this possibility would certainly create cognitive dissonance for those accustomed to the teleological narrative that the DST will merely be replaced by an improved system of international income taxation. If the intuitions motivating the DST are valid,

they generate a normative perspective from which many international tax reform proposals—whether currently existing or still to come—will likely continue to be impugned.

Another theme in recent debates is destination-based apportionment, either of all corporate profits or of residual profits. Advocates of destination-based apportionment sometimes even claim that ideas about “user value creation” simply represent an inchoate, ad hoc version of the scheme of destination-based apportionment. The arguments in this Article suggest, in contrast, that when “user value creation” is interpreted in terms of platform LSR, it is not about allocation of profits to “destination” countries at all. Moreover, it is destination-based apportionment that suffers from an inchoate normative position, whereas taxing rents where they arise represents a more fully fleshed-out normative view, in that it takes both efficiency and equity considerations into account.

Research on the industrial organization of digital platforms has revealed a rich variety of ways in which platforms can earn supra-normal profits. Both theoretically and empirically, platform LSR is by no means limited to the types of businesses (advertising, online intermediation, and sale of data) that current DST proposals select to be their targets. However, there is also something very striking about these business models that activate one’s intuitions about LSR in a very effective way. Fortunately, the line-drawing that current DST proposals necessarily engage in has not only ample pragmatic justifications but also plenty of precedents in all areas of tax policy.