# **ARTICLES: The Use and Abuse of Location- Specific Rent**

Spring, 2023

**Reporter**

76 Tax L. Rev. 277 \*

**Length:** 21549 words

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**Text**

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**Introduction**

Consider a multinational firm that makes an investment in some jurisdiction. Let us imagine that the investment could not have been made anywhere else, or at least could not have been made on such favorable terms. Are the reasons to tax the returns to such an investment stronger than the reasons to tax profits in other situations (that is, where an investment could have been made on like terms in any of a number of places)? And if there is a particularly strong reason to tax such profits, which jurisdiction ought to collect the tax? The jurisdiction hosting the investment? Or some other jurisdiction?

This series of questions implicates the concept of *location-specific rent*, or what we will refer to as "LSR." LSR has come to be viewed in international tax policy circles as an important tax base. In this Article we aim to offer the first complete, formal exposition of LSR in the tax literature. In so doing, we will seek to answer the series of important questions we have just introduced our answers, however, will run counter to a widespread, possibly nearly universal, academic consensus.

In particular, we will argue that the jurisdiction hosting an investment giving rise to LSR does *not*, as it has been assumed, have a distinctive or superior claim to tax the LSR. Additionally, we will show that it is difficult to implement a properly defined tax on LSR in a wide range of cases. The upshot is that LSR is a less useful concept for international tax policy than is typically assumed. LSR cannot, by itself, resolve controversies about the proper allocation of taxing rights, and it provides useful guidance for unilateral action only under certain constrained circumstances.

**[\*278]**Our argument will involve several steps we begin with some important background. Under conditions of international trade in goods and services, sovereigns frequently seek to tax people whose activities transcend national boundaries. The design of the international tax system (i.e., the sets of domestic rules that create substantive tax liabilities in these circumstances and the treaty-based law that coordinates such domestic rules) presents several notoriously difficult problems. It is hard to design taxes that cannot be avoided by relocating. Additionally, taxes on international economic activity frequently distort choices across many margins, including the location of physical capital, the location of labor inputs, the quantity of savings, the ownership of assets, corporate organizational form, corporate capital structure, and the design of global supply chains, to name some of the most important. Finally, there is a pressing question of fairness. When economic activity transcends national boundaries, *who* should get to tax the returns to that activity?

Since the 1920s, the law and many commentators have allocated taxing rights by appealing to two concepts. The first, *source*, assigns some taxing rights to the jurisdictions that host the productive activities leading to particular items of income. The second, *residence*, assigns some taxing rights to the jurisdictions in which taxpayers live.

Most tax scholars agree that the current system is broken.[[2]](#footnote-3)1 It is highly distortionary, even though it also fails, miserably, to impose tax burdens that are sufficiently high.[[3]](#footnote-4)2 The system is also frequently challenged not just with respect to the level of tax collected but also with respect to the identity of the taxing sovereign.[[4]](#footnote-5)3

**[\*279]**These problems have provoked a huge array of legislative responses. Many countries have acted unilaterally, enacting domestic legislation in an effort to plug up some of the holes in the current regime. For example, in 2017 the United States made large reforms to the sections of the Internal Revenue Code that govern cross-border transactions, adding three new acronyms - GILTI, FDII, and BEAT - to the tax lawyer's lexicon.[[5]](#footnote-6)4 Meanwhile, over twenty other nations have enacted "digital services taxes" (DSTs), turnover taxes that excise a flat, low percentage of revenues earned by large tech companies like Amazon, Google, and Facebook.[[6]](#footnote-7)5 And at the Organization for Economic Co-operation and Development (OECD), representatives of many nations have recently reached agreement on a set of proposals that, if ultimately enacted at the domestic level, would constitute the most sweeping reforms in the history of the international tax system.[[7]](#footnote-8)6

Amid this tumult, tax scholars have searched for new concepts and principles to guide reform efforts.[[8]](#footnote-9)7 An ideal allocation of taxing rights would:

(a) Enable countries to raise substantial amounts of revenue

(b) Allow them to do so efficiently and

(c) Assign rights fairly.

The conceptual basis for such an allocation would be the holy grail of international taxation.

**[\*280]**Recently, several tax scholars have claimed that they have found the grail.[[9]](#footnote-10)8 They say that, to the extent that each country has the exclusive right to tax the LSR that originates in it, the international tax system will improve with respect to the above criteria. An *economic rent* (or, simply, a *rent*) is a return to the owner of a productive factor that exceeds the minimum amount the owner would require to place the factor into production.[[10]](#footnote-11)9 The concept of a *location-specific rent*, as we will show in this Article, is more newfangled and elusive.[[11]](#footnote-12)10 Roughly, however, an LSR is a rent that is tied to a particular location.[[12]](#footnote-13)11 It is a rent that could not have been earned elsewhere.

For a canonical example of a business that can give rise to LSR, consider the extraction of natural resources,[[13]](#footnote-14)12 which often demand prices in excess of what their owners would require to produce them.[[14]](#footnote-15)13 When that occurs, some income derived from the resources is rent. Moreover, that income could not have been earned anywhere else - the particular ***oil*** or copper or tungsten that gives rise to it only exists in one particular place. Thus, the rent is location-specific. Recently, several tax scholars have tried to generalize from extracting natural resources to more complex and controversial operations, such as harvesting data from users in one jurisdiction and using that data to sell targeted advertisements to customers in another.[[15]](#footnote-16)14

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Why is LSR so appealing? Consider the three criteria we set out above:

(a) *Revenue*. Taxes on LSR could raise a substantial amount of revenue. Though the quantity of LSR is uncertain, it is probably significant and pervasive across some of the largest and most profitable business sectors.[[16]](#footnote-17)15 Additionally, since LSR cannot be earned anywhere else, taxes on LSR cannot be avoided by relocating real economic activity.

(b) *Efficiency*. In theory, taxing LSR does not distort choices about where capital is deployed.[[17]](#footnote-18)16 If a rent can only be earned in a certain jurisdiction, taxation of that rent at anything less than 100% should not drive the taxpayer to relocate the activity. For example, if you would earn $10 from operating in the United States but only $8 from operating in the UK (your next best offer), you earn $2 worth of LSR that is traceable to the United States, and you will probably continue to operate in the United States so long as you are able to pocket at least some of the LSR. Under those conditions, relocating to the UK, or anywhere else, would leave money on the table.

(c) *Fairness*. Many scholars have the intuition that LSR properly belongs to the country in which it arises.[[18]](#footnote-19)17 Since **[\*282]**LSR is a return that could not be earned anywhere else in the world, they think, LSR represents a contribution made exclusively by one country to a taxpayer's profit. For that reason, they think, it is fair for that country to tax it. Additionally, since LSR can be measured, LSR can be used to resolve long-standing puzzles regarding the relative value of particular countries' contributions to profit.

If these points are correct, LSR is the key to an allocation of taxing rights that satisfies each of the three desiderata. The grail has been found.

The emerging consensus about LSR has formed rapidly, and its core inferences have not been scrutinized patiently. Indeed, there has been surprisingly little reflection about what LSR actually *is*. In this Article, we closely examine LSR, and we argue that it does not live up to its promise.

Our first contribution is to provide the first precise, general definition of LSR to appear in either the legal or the economic literature. We then draw on this definition to show that the emerging consensus about LSR is mistaken. More specifically, we show that several of the key ideas relied upon by that consensus are mutually inconsistent. If the efficiency of taxing LSR is an essential feature of LSR, LSR often is difficult to measure. And even if LSR (so understood) could be measured, it would not necessarily be a contribution to profit made solely by one country. Similar points hold in the opposite direction as well. If we build into the definition of LSR that it represents a country's exclusive contribution to profit, measuring LSR will simply recapitulate a classic problem that LSR was supposed to solve - that of distinguishing multiple countries' contributions to a single stream of profit.

More positively, we identify an alternative, modest role for LSR in assessing international tax regimes. In some special contexts, the practical hurdles to measuring LSR can be overcome. Moreover, all else being equal, it is a good thing for the international tax regime to increase states' aggregate capacity to impose relatively efficient taxes. Thus, all else being equal, we should prefer international tax regimes that increase the aggregate capacity of states to tax LSR. In order to assess choices in which all else is *not* equal - as when efficiency might be increased at the expense of some particular people - we need to **[\*283]**rely on a general theory of global distributive justice. Such a theory probably would not imply that each country ought to have the right to tax the LSR that arises in it.

Here is how this Article will unfold. In Part I, we explain why so many tax scholars have come to regard LSR as a good basis for allocating taxing rights. In Part II, we trace the development of the concept of LSR. That paves the way for our formal definition of LSR, provided in Part III. Having clarified what LSR is, in Part IV we argue that LSR does not satisfy all of the desiderata for a concept that would guide the allocation of taxing rights. In Part V, we identify a more modest role for LSR in international tax policy.

**I. The Holy Grail of International Taxation**

**A. Desiderata for International Tax Regimes**

One of the central issues in the field of international tax law is the allocation of taxing rights across countries. To make this problem vivid, consider a stylized example. Suppose that a company, *Pharma*, is headquartered and incorporated in the United States, where it develops and globally patents a medical device. *Pharma* then licenses its British subsidiary to manufacture the device. The device is then sold into France. Over the course of the year, the *Pharma* group earns $10*x* of profit from the sale of the device in France. Which countries should have the rights to tax that profit? And how should taxing rights be shared among those countries?

At least three considerations are relevant to answering these questions.[[19]](#footnote-20)18 Each of these considerations provides a desideratum for the design of an international tax regime - that is, something that makes such a regime good. First, the international tax regime should be *robust*: It should enable countries to raise substantial amounts of revenue. Second, the international tax regime should be *efficient*. It should enable taxes that do not greatly distort choices about where people locate their productive activities.[[20]](#footnote-21)19 Third, the international tax regime **[\*284]**should be *fair*. It should assign taxing rights to those countries who ought to possess them.[[21]](#footnote-22)20

Among these three desiderata, theorizing fairness has proved particularly difficult. Traditionally, many tax scholars have endorsed what we will call the *contributory theory* of fairness in international taxation.[[22]](#footnote-23)21 According to the contributory theory, rights to tax a business's profit are fairly allocated when the value of each country's rights is proportionate to the degree of its contribution to the business's profit.[[23]](#footnote-24)22 In the limit, if a country does not contribute to a business's profits at all, it should not have any rights to tax such profits. Thus, in our hypothetical example of *Pharma*, the United States, the United Kingdom, and France are all eligible to tax *Pharma*, while Brazil, Nigeria, and India (among many others) are not.

The main alternative to the contributory theory is a family of *need-based* theories.[[24]](#footnote-25)23 According to need-based theories, taxing rights ought to be assigned so as to achieve just distributions of goods among individuals. Moreover, goods are not distributed justly among individuals simply when the people in each society receive, in the aggregate, a proportionate return on their contributions to particular businesses. Instead, roughly speaking, distributive justice turns (at least in part) on individual need. Perhaps distributive justice consists in maximizing the sum of welfare in the world perhaps it consists in maximizing the quality of Rawlsian primary goods held by the worst-off people (in each society or in the world) perhaps it consists in ensuring that eve**[\*285]**ryone's holdings are "good enough."[[25]](#footnote-26)24 Many other ideas are also possible. What unites them is that they focus on what goods do for people, not what people do for goods.

Many scholars who are enthusiastic about LSR believe in the contributory theory.[[26]](#footnote-27)25 LSR promises to solve a thorny problem that arises within that theory, which we will call the *measurement problem*.[[27]](#footnote-28)26 The contributory theory asserts that the value of each country's rights to tax a business's profit should be proportionate to each country's degree of contribution to that business's profit. Thus, in order to apply this theory, we need to measure each country's contribution to each business's profit. But that is very hard to do when a business's operations span national borders and multiple countries contribute to a single stream of profit.

For an illustration of the measurement problem, come back to the case of *Pharma*. In this instance, the United States, the United Kingdom, and France all have a hand in producing *Pharma*'s profit. How, then, are we supposed to measure the value of their contributions? One aspect of this problem is epistemic: The facts that seem most relevant to answering this question are hard to know. In the case of *Pharma*, one might try to measure the United States' and the United Kingdom's relative contributions by considering what a hypothetical third-party dealing "at arm's length" might pay for a license to market the medical device. But it can be very difficult to discern what a hypothetical market actor would pay for items of intellectual property such **[\*286]**as this and other idiosyncratic assets.[[28]](#footnote-29)27 A second aspect of the measurement problem is metaphysical: Even if we had perfect information, it is difficult to say exactly which economic facts determine the value of countries' contributions to profit, and how they combine to do this. Suppose that the United States' contribution to *Pharma*'s intellectual property is unique *Pharma* would not have developed the medical device had it located its headquarters anywhere else. And suppose that France's consumer base for the device is also unique if *Pharma* didn't sell its device into France, it wouldn't sell the same units elsewhere. How should *Pharma*'s $10*x* of profit be attributed to the United States and France?

Because the contributory theory is highly influential in international tax policy, and because LSR has been thought to solve a problem that arises within that theory, for much of this Article we will assume that the contributory theory is true for the sake of argument. That said, our analysis should also be of interest to scholars who, like us, do not believe in the contributory theory. The most prominent objection to the contributory theory asserts that it is flawed because the measurement problem cannot be solved.[[29]](#footnote-30)28 Both those who are sympathetic to and those who are skeptical of the contributory theory should be interested in whether LSR can solve this problem. Additionally, in Part V, we describe a role for LSR that is compatible with both the contributory theory and need-based theories.

**B. Historic Methods of Allocating Taxing Rights**

We are interested in a set of concepts that define an international tax system that satisfies the three desiderata outlined above, a system that is robust, efficient, and fair. If we further assume, for the sake of argument, that the contributory theory is true, our concepts should also solve the measurement problem. They should specify the determinants of countries' relative contributions, and they should identify a way of comparing them.

Historic methods of allocating taxing rights leave room for improvement on each of these dimensions. For roughly the last century, taxing rights have been allocated on the basis of two concepts: *source* and *residence*. Roughly put, income is sourced to a jurisdiction when the productive activities that generated that income occur within that jurisdiction. Residence, meanwhile, is the jurisdiction in which the tax**[\*287]**payer "lives."[[30]](#footnote-31)29 These concepts set forth distinct, though often overlapping, grounds for jurisdictions to levy tax in the cross-border setting. In our case of *Pharma*, the UK might have a right to tax the royalty paid by *Pharma*'s UK subsidiary because the royalty arose in, or had its source, in the UK. Meanwhile, the United States has a residual right to tax the royalty because *Pharma* is a U.S. resident.

By a common consensus, source and residence leave much to be desired. In the first instance, these concepts do not make international tax regimes very robust, since sophisticated tax planning constrains the amount of revenue that can be raised under them.[[31]](#footnote-32)30 Second, international tax regimes organized around source and residence can distort locational decisions on several margins.[[32]](#footnote-33)31 Third, source and residence are significantly flawed proxies for countries' contributions to business profit. A corporation might be deemed to reside in one jurisdiction because it was incorporated there, even though it operates entirely elsewhere.[[33]](#footnote-34)32 Similarly, in our *Pharma* example, the royalty would generally be sourced in the UK, even though the underlying intellectual property was developed entirely in the United States. And, finally, source and residence do not solve the measurement problem. To the contrary, instead of clarifying the value of countries' relative contributions, (at best) they reflect conclusions about that issue.

The most significant alternatives to allocating taxing rights on the basis of source and residence are a suite of proposals that would enact "formulary apportionment."[[34]](#footnote-35)33 In a scheme of formulary apportionment, the profits earned by an entire multinational group are consolidated and then apportioned on the basis of a formula.[[35]](#footnote-36)34 The typical formulary factors tend to be selected to "provide a crude yet sensible proxy to the location of the income-generating activities associated **[\*288]**with the relevant source of income [they] seek[[spt]] to allocate."[[36]](#footnote-37)35 Often, these factors include the firm's assets, employees, and/or sales.[[37]](#footnote-38)36

Advocates of formulary apportionment claim that a well-crafted formulary scheme would more fully satisfy each of our three desiderata. If taxing rights were apportioned according to factors that businesses cannot easily manipulate, such as sales, the international tax regime would be relatively robust.[[38]](#footnote-39)37 Moreover, insofar as taxes fall on factors that businesses are relatively unwilling to move, those taxes will not greatly distort locational decisions. Thus, formulary schemes that rely on such factors would be relatively efficient. Finally, at least at first glance, factors such as employees, assets, or sales seem to be more tightly related to countries' relative contributions to firms' profits than source or residence as instantiated in the current international tax regime.

Formulary apportionment nonetheless has some drawbacks. Since the typical apportionment factors aren't perfectly tax-inelastic, taxes imposed under them would still be somewhat susceptible to avoidance and would distort locational decisions to some extent.[[39]](#footnote-40)38 If we allocate based on employees, then firms can outsource labor. If we allocate based on assets, firms can relocate physical plant. If we allocate based on research, firms can move engineers and scientists. If we allocate based on sales, firms can attempt to make sales to relatively immobile final consumers look like sales to a party in a different (low tax) jurisdiction by selling to an unrelated party intermediary therein.

More importantly, the typical formulary factors do not solve the measurement problem. For example, suppose that we are deciding between two different formulary schemes. The first gives equal weight to assets, employees, and sales the second gives some degree of extra weight to sales. Applied to *Pharma*, the second scheme would give a somewhat more extensive set of taxing rights to France, while the first would give a somewhat more extensive set of rights to the United States. Which one more closely fits the countries' relative contributions to *Pharma*'s profit? If we were initially unsure of the relative value of the United States' and France's contributions to *Pharma*'s profit, simply noting the presence of particular formulary factors (as**[\*289]**sets and employees in the United States sales in France) would not give us any greater certainty.

**C. The Promise of Location-Specific Rent**

Let's take stock. We identified three desiderata for international tax regimes. We observed that the allocation of taxing rights according to source and residence fares poorly on each of these three dimensions. Contemporary developments suggest a shift toward formulary apportionment, which would likely bring some technical improvements over the status quo. But there would still be some distortions under formulary apportionment, and there would also still be several situations in which the precise ratio of countries' relative contributions to firms' profits are ambiguous. Could we do better?

Recently, several tax scholars have argued that LSR could work magic. LSR likely exists in substantial quantities. Taxes on LSR also should be efficient. And, crucially, LSR offers a solution to the measurement problem. If LSR can be empirically measured, and each country's LSR represents its exclusive contribution to a firm's profit, the contributory theory yields a clear implication: Each country should have the exclusive right to tax its LSR. We could then measure LSR and allocate taxing rights accordingly. The resulting international tax regime would, at least in part, reflect countries' relative contributions to profit.

The leading figure in the enthusiasm for LSR is Wei Cui.[[40]](#footnote-41)39 Cui develops his main argument for allocating taxing rights with LSR in a specific context. This context involves digital platforms such as Google and Facebook that operate in two-sided markets. On one side of the market, these firms provide services to users at below marginal cost on the other side of the market, and in reliance on the eyeballs that they attract with their services, they sell advertisements.[[41]](#footnote-42)40 Cui points out that this business model generates a particular kind of LSR, which he calls "platform LSR."[[42]](#footnote-43)41 Though platform LSR is realized in a pay**[\*290]**ment stream from the firms' advertisers, it is generated by the firms' users and is thus specific to the jurisdictions where those users live.[[43]](#footnote-44)42 Cui believes that those jurisdictions should have the right to tax platform LSR.[[44]](#footnote-45)43

Generalizing from this example, Cui argues that "[a]llocation by LSR is supported *by both efficiency and fairness arguments*."[[45]](#footnote-46)44 Cui points out that taxing LSR "is nondistortionary with respect to both short-term production decisions and long-term investment decisions."[[46]](#footnote-47)45 Further, Cui argues, a country's LSR represents a contribution to profit made exclusively by that country.[[47]](#footnote-48)46 Thus, "it is fair and equitable for the country that generated additional consumer or producer surplus .… in another country to claim a portion of such surplus that is paid over to the platform."[[48]](#footnote-49)47

Other scholars have followed Cui's lead, concurring that allocating taxing rights with LSR would be both efficient and equitable.[[49]](#footnote-50)48 For example, Martin Sullivan argues that rent earned by a mining company in *Country N* should be taxed by *N* because the rent is generated by the background environment in *N*.[[50]](#footnote-51)49 He then adds that taxation by *N* is favored by "not just a commonsense appeal" it is also efficient.[[51]](#footnote-52)50 Similarly, Aqib Aslam and Alpa Shah analogize to natural resource rents to resolve questions of fairly allocating rights to tax profit derived from data.[[52]](#footnote-53)51 In Aslam and Shah's view, just as the iron or copper or ***oil*** provided to a mining company represents an exclusive contribution from the society in which that natural resource is located, so do LSRs more generally represent exclusive contributions from those societies wherever they are found.[[53]](#footnote-54)52 They also highlight the efficiency of taxing LSR, "which [is] uniquely associated with some specific loca**[\*291]**tion and can thus be taxed without in theory having any effect on the extent or location of the underlying activity or asset."[[54]](#footnote-55)53

Why should efficiency and equity go hand in hand when LSR is taxed? As a general matter, we don't expect that efficient taxes necessarily will be fair, or vice versa. In fact, much of tax policy has been concerned with resolving equity-efficiency trade-offs, which arise precisely because many taxes that promote plausible conceptions of distributive justice tend to distort choices.[[55]](#footnote-56)54

The key to LSR's potential is that efficiency and a particular conception of equity - namely, providing a fair return to a society's contribution to profit - seem to come together in the concept of economic rent. Ever since David Ricardo's pathbreaking work in 1817, it has been standardly accepted that taxes on rents tend not to distort economic behavior and thus are relatively efficient.[[56]](#footnote-57)55 Meanwhile, there is another intellectual tradition, exemplified by John Stuart Mill and Henry George in the nineteenth century, by Robert Hale and other progressives in the early twentieth century, and more recently by David Gauthier, that views rents as the product of society as a whole, not of the people that earn them.[[57]](#footnote-58)56 According to this line of thought, **[\*292]**people earn rents simply because societies are organized in some ways rather than others, making some factors scarce.

Hence the promise of LSR. Taxes on LSR should be efficient. Moreover, if we understand LSR as, roughly, a return to a factor of production that exceeds what the holder requires in order to continue deploying that factor in a particular location, LSR has an empirical interpretation. It can be measured. And we can then use those measurements to identify the contributions of particular societies to firms' profits.

An example will help to illustrate this point. Suppose that a landlord owns a plot of land in *X*. The landlord pays $40 for equipment and $40 for labor to cultivate this land, producing corn. The landlord then sells the corn for $100. The excess of $100 over $80 - i.e., $20 - constitutes economic rent to the landowner. All of this rent is location-specific because the landowner's factor of production - his land - is perfectly immobile.

Three aspects of this example are noteworthy. First, taxing the landowner's LSR is efficient. Were *X* to tax $5 of the $20 of rent, the landlord would still produce corn in the same way because after-tax marginal revenue (now $95) would still exceed after-tax marginal cost (still $80). Indeed, the same line of argument works for any tax on rent up to $20. Thus 100% of the rent can be taxed without distorting the landlord's choices.

Second, the landlord's LSR is measurable. To calculate it, we simply need to know the landlord's profit in the actual world and his profit if he instead moved his factor to the next-best location. In this case, since moving is impossible, his next-best profit is $0.

Finally, the landlord's LSR at least plausibly represents an exclusive contribution made by a particular society. Why is the landlord able to earn $20 of excess returns? Why don't other holders of capital sense an opportunity, purchase land, and cultivate corn of their own, expanding the supply of corn and pushing its price down? Though there are many possible explanations, they all would identify some way in which *X* has organized itself, including possibly its relationship with other countries that might export corn to *X*, so as to make arable land especially scarce.[[58]](#footnote-59)57 Because it has done so, *X* has made a particular **[\*293]**economic opportunity available to the landlord. It has enabled him to earn $20, which he could not earn through the same plot of land anywhere else.

**II. LSR: The Missing Conceptual Connections**

As we noted in Part I, an emerging consensus of tax scholars has come to view LSR as an important concept for the allocation of taxing rights. These scholars have come to regard LSR as promising because it seems to offer both (a) a tax base that is non-distortionary and (b) a solution to a long-standing puzzle about the fair allocation of taxing rights. Since LSR is thought to be measurable, and since it is thought to represent the exclusive contribution of a particular society to a firm's profits, it seems to provide some clear answers to how a contributory theory of fairness in international taxation ought to be applied to concrete choices. If, additionally, LSR exists in large quantities, LSR should be able to illuminate many such choices.

That is the rough logic that lies behind the enthusiasm for LSR. As we show in this Part, however, scholars have not patiently examined whether that logic holds up under scrutiny. In particular, we will show that scholars have not thought seriously about whether LSR actually is measurable and whether, if measured, it would represent the exclusive contribution made by a particular country to a firm's profits.

Indeed, scholars have spent relatively little time thinking about what LSR actually is. Instead, they have implicitly relied on a relatively informal definition of LSR, according to which LSR is the return to a factor of production that could be taxed without causing the holder of that factor to deploy the factor to a different location. This definition of LSR builds into the concept of LSR that taxing it is non-distortionary. But it does not settle whether LSR is measurable or whether LSR represents a country's exclusive contribution to profit.

The historical origins of the interest in ascribing location to economic rent are murky and complicated. On our reading, there are arguably three distinct intellectual paths that gave rise to the concept of LSR, all about the same time - in the 1990s. We trace these three paths below. As we will show, scholars working along each of these paths have understood LSR to be defined by the efficiency of taxing it in an open economy. They have not, however, carefully explored whether LSR is measurable or whether it represents a country's exclusive contribution to a firm's profit.

**[\*294] A. The Optimal Tax Literature and LSR**

While economists have been interested in economic rent since the early nineteenth century, scholars did not try to ascribe locational attributes to rents until quite recently. Under Ricardo's definition of an economic rent, economic rents arise whenever the returns to a factor of production exceed the costs of deploying it in a particular way whether the rent arises anywhere, and whether the returns and the costs are attributable to operating anywhere, are of no inherent significance. Following Ricardo, most economists and tax scholars who were interested in the efficiency of taxing rents had no special interest in separately analyzing how taxes might distort *locational* decisions - that is, decisions about whether to operate in one location rather than another. Similarly, the Georgists and their followers mostly have been interested in splitting apart the relative contributions of market participants and a single, undifferentiated society at large.[[59]](#footnote-60)58 They have not considered whether, and how, to determine if a rent can be ascribed to Canada rather than France, Germany rather than Paraguay, Ghana rather than China.[[60]](#footnote-61)59

One path to LSR has its origins with the literature on optimal taxation, which grew out of the seminal work by Mirrlees on this topic.[[61]](#footnote-62)60 The fundamental task set by optimal tax theory is to reconcile the equity-efficiency trade-off. This trade-off arises because, although, redistributing resources can improve social welfare (for example, if resources are moved from the relatively wealthy to the relatively poor and we assume declining marginal utility of income across individuals), it can also restrict aggregate economic output if those who are taxed respond by producing less. One can avoid this trade-off, however, if it is possible to identify non-distortionary tax bases.[[62]](#footnote-63)61

Enter rents. As we have seen, it has been understood since Ricardo that economic rent can be taxed without distorting behavior. It is thus an implication of the optimal tax literature that a government should tax economic rent *first* and only tax normal returns thereafter. That all makes perfect sense in a closed economy. But what if an erstwhile closed economy seeks to impose a non-distortionary rents tax on a **[\*295]**firm and the firm simply responds by leaving for a different jurisdiction, which will not tax the rent?

The shift from closed to open economy seems to strip economic rent taxation of its non-distortionary features - but only to a point. If rent is immobile, a firm cannot avoid a tax upon it simply by relocating. Thus, as Huizinga and Nielsen observed, efficient taxation of rent remains possible if the rent itself is not mobile.[[63]](#footnote-64)62 Huizinga and Nielsen make this point by invoking LSR, saying: "[S]ignificant profit taxation is precluded by tax competition, if firms are internationally mobile, and if profits or rents are firm-specific rather than *location-specific*."[[64]](#footnote-65)63

But neither Huizinga and Nielsen nor other economists writing in the optimal tax literature have tried to provide a precise, general definition of LSR. Nor have they provided arguments that would justify the core commitments of the legal scholars who have hailed LSR as an important concept for the allocation of taxing rights. Huizinga and Nielsen do associate LSR with efficient taxation in open economies. But they do not provide any argument that would justify the claim that LSR is measurable, or that LSR represents the exclusive contribution made by a particular jurisdiction to a firm's profit.

**B. The New Economic Geography and LSR**

The path to LSR from the new economic geography is somewhat different. The question of differential wealth and economic growth across nations is, of course, an old one in economic history.[[65]](#footnote-66)64 The explicit formal reference to *spatial* forces in explaining the location of economic activity is, however, of relatively recent vintage. The seminal work in this field is Paul Krugman's paper on the new economic geography in the early 1990s.[[66]](#footnote-67)65 Reflecting on that paper twenty years later, Krugman observed, "In the late 1980s mainstream economists were almost literally oblivious to the fact that economies are not dimensionless points in space - and to what the spatial dimension of the economy had to say about the nature of economic forces."[[67]](#footnote-68)66 This is an interesting historical waymark for our analysis as it offers a telling indication that up to this point economists had not yet laid the **[\*296]**groundwork to incorporate an economic theory of LSR into tax policy.

Krugman's focus in the early 1990s had nothing to do with taxation. Rather, he sought to produce a simple mathematical model that would have explanatory power regarding agglomeration effects (that is, the clumping of economic activity in certain locations).[[68]](#footnote-69)67 Krugman's model - the core periphery (CP) model - posited centripetal forces (such as increasing returns to scale in the industrial core), centrifugal forces (such as the location of natural resources in the nonindustrialized periphery), and transportation costs in a neoclassical general equilibrium framework.[[69]](#footnote-70)68 The resulting equilibria explain why certain economic activity is located where it is, and why it would be relatively costlier to be located somewhere else. With this reference to the cost of relocating economic activity, we are not quite to LSR, or to the taxation of LSR, but we are getting close.

Around the time of the introduction of the new economic geography, an important phenomenon in international tax policy was the increasing tax competition across jurisdictions for mobile capital. In the real world, corporate tax rates continued to decline around the globe, responding to competitive pressures.[[70]](#footnote-71)69 Meanwhile, in academia, economists set down general models of tax competition and legal scholars became increasingly concerned about a potential "race to the bottom" that could starve states of tax revenue.[[71]](#footnote-72)70 The basic tax competition model prevalent at this time reached a stark conclusion: Small countries ("small" here meaning any country that has an economy insufficiently large to change the global cost of capital through its importation) actually ought not to tax capital income provided by foreign parties *at all*.[[72]](#footnote-73)71 The basic intuition driving this conclusion was that such a country is a price taker on global capital markets. Any tax on capital income will simply drive mobile capital away, until the marginal return to capital is sufficiently high that the after-tax return is again equal to the global equilibrium price. To be sure, countries **[\*297]**might collect *revenue* from such a tax. But the economic burden of the tax - its "incidence" - would fall entirely on local, immobile factors such as the labor force.

The new economic geography and the standard tax competition model collided around the turn of the millennium.[[73]](#footnote-74)72 A fundamental implication of Krugman's CP model is that there are gravitational forces under conditions of international trade that cause capital to pool in certain places. These gravitational forces entail that capital is not perfectly mobile - as it is assumed to be in the standard tax competition model. Baldwin and Krugman made this point explicitly. They introduced a concept that they called "agglomeration rent" and revisited the conclusions of the basic model of tax competition. Baldwin and Krugman showed that, if a jurisdiction offers agglomeration rent to holders of capital, it can tax capital without driving them away. Thus, it can tax capital at a *higher* rate than would otherwise be the case under the standard model.

Baldwin and Krugman's concept of agglomeration rent has some of the main features of LSR. That is, the agglomeration force clearly has a spatial or locational component tied to a particular taxing jurisdiction. Further, if such a jurisdiction can tax the return to a factor without distorting the deployment of the factor, this is the hallmark of the relation between rent and tax, which can be traced back to Ricardo. For this reason we take the Baldwin and Krugman revised tax competition model to be a key development in the economic literature that introduced the prospect of the efficiency-promoting features of a tax on a base that is comprised of LSR.

Baldwin and Krugman, however, do not offer much insight as to whether LSR is measurable. Similarly to Huizinga and Nielsen, Baldwin and Krugman do not offer a precise and general definition of LSR. They were concerned with agglomeration rents. Agglomeration rents are a subspecies of LSR: While some agglomeration rents are LSR, not all LSRs are caused by agglomerative forces. Indeed, ag**[\*298]**glomerative forces would not be able to account for what tax scholars take to be the paradigmatic case of LSR - rent derived from natural resources. The Baldwin and Krugman revised tax competition model essentially establishes equilibrium conditions for the location of mobile capital with certain characteristics (increasing returns) and positive trade costs. The model doesn't apply to factors rooted to particular places, like raw land, natural resources, or immobile labor. Without such a precise and general definition of LSR, it is hard to tell whether and to what extent LSR is measurable.

Baldwin and Krugman also assume away the ascertainment of countries' contributions. They assume that the jurisdiction where the agglomeration rent arises is the jurisdiction that is entitled to tax the rent. As they say, they assume that a common tax rate "is applied to all factor income generated inside the nations (source principle)."[[74]](#footnote-75)73 This assumption sets aside the many difficult questions - familiar to tax scholars - that arise in demarcating which income is "generated inside" a nation.

**C. Source Versus Residence Tax Entitlements and LSR**

As noted in the Introduction, a chief problem in international tax policy from the inception of the field has been the proper delineation of the source tax entitlement and the residence tax entitlement. Approaches to carving up the international tax base have tended to be categorical. For any category of income (services, royalties, interest, capital gains, etc.), one has to come to a resolution about whether the source entitlement has primacy over the residence entitlement, or vice versa. This ever-present debate set the stage for the third path to the concept of LSR.

The earliest work in this vein is an essay published by Charles McClure in 1992, "Substituting Consumption-Based Direct Taxation for Income Taxes as the International Norm."[[75]](#footnote-76)74 Though McClure argued that the normal return to capital should not be taxed on a source basis, McClure thought that rents should be treated differently. Indeed, he proposed that "the best basis for the principle of the source entitlement is the taxation of economic rents."[[76]](#footnote-77)75 McClure does not tie his conclusions either to the optimal tax literature (like Huizinga and Nielsen) or to the new economic geography (like Baldwin and Krugman). Nor does McClure use the precise term "location-specific rent." However, the basic efficiency characteristics that McClure finds desir**[\*299]**able in the concept he is discussing (i.e., "extraordinary returns generated by economic activity conducted within its boundaries") track the characteristics that made the concept relevant for scholars working along the optimal tax and new economic geography paths.[[77]](#footnote-78)76 In particular, McClure observes, "by definition, unequal source-based taxation cannot affect decisions on the exploitation of opportunities to earn economic rents."[[78]](#footnote-79)77

Much like the scholarship in the paths above, McClure does not provide any sort of worked-out definition of the non-distortionary rents tax base that he has in mind. Instead, he relies on paradigmatic examples such as rents derived from the extraction of natural resources.[[79]](#footnote-80)78

A year after McClure's article appeared, Robert Green published an extensive critique of source-based taxation.[[80]](#footnote-81)79 Though Green opposed source-based taxation in general, he carved out a possible exception for the source-based taxation of LSR.[[81]](#footnote-82)80 Green, however, provides no definition of LSR, resorting instead to citation of exemplary cases.[[82]](#footnote-83)81 Green also does not explain why LSR might represent the exclusive contribution of a particular country to a firm's profit. While he asserts that the country that hosts a particular quantity of LSR should be entitled to tax it, he does not provide an argument for this claim.[[83]](#footnote-84)82

**\* \* \***

Our analysis of the history of the academic literature on LSR yields two insights. First, for much of the short history of LSR, scholars have defined LSR by reference to an efficiency property. Some quantity of rents has been deemed to be specific to some jurisdiction, *X*, just in case taxing them away would not distort economic behavior, by causing market participants to shift their activities out of *X*. Historical discussions of the efficiency aspect of LSR, however, have not involved rigorous or detailed definition or indication of how one could actually identify LSR across a range of cases. The discussions, instead, have tended to be perfunctory and simply assume away this task of identification.

**[\*300]**Second, scholars have not adequately examined whether LSR actually represents the exclusive contribution made by a particular country to a firm's profits. Indeed, many scholars who have worked on LSR or related concepts have set aside normative questions about the allocation of taxing rights entirely. It is only relatively recently that scholars have started to see LSR as a possible solution to age-old puzzles about demarcating countries' contributions to profit.

**III. Understanding Location-Specific Rent**

As we have seen, much academic work on LSR characterizes LSR by referring to an efficiency property that is characterized informally. This work assumes something like the following definition of LSR:

**LSR[in'X'] (Informal)**: The return earned by a firm, *F*, that could be taxed by *X* without causing *F* to shift activities to a jurisdiction other than *X*.[[84]](#footnote-85)83

More recently, scholars have claimed that LSR has other properties as well. In particular, they have asserted that LSR is the exclusive contribution of the country in which it arises, and that LSR is measurable. In order to understand whether LSR has these additional properties, we need to know more about the conditions under which a return can be taxed without causing its earner to shift activities elsewhere.

In this part, we identify those conditions by proposing a precise, general definition of LSR. Following existing discussions of LSR, we view the efficiency of taxing LSR in an open economy as an essential feature of it. In other words, we assume that what *makes* some return LSR is the fact that the return can be taxed in an open economy without distorting choices about where to locate productive activities.[[85]](#footnote-86)84 We construct a definition of LSR that describes the conditions under which a return has this feature.

Our proposed definition of LSR has three key elements. First, it is counterfactual. According to our definition, whether some return to a factor counts as LSR depends on what the holder of that factor would have earned if she had deployed it to a different jurisdiction. Second, LSR is determined by the marginal revenue and marginal costs that arise in each jurisdiction in which a factor could be employed. Third, a **[\*301]**firm's total "true" LSR (in a sense that we define below) cannot exceed the firm's total economic rent.

**A. True Rent and Quasi-Rent**

Since we are characterizing LSR in terms of an efficiency property, our core definition of LSR begins with a definition of Ricardian rent (unattributed to particular locations). Ricardian rent is a return to a factor of production that exceeds what the holder of that factor requires in order to deploy that factor in the actual way. Thus, at a first approximation, Ricardian rent is the excess of a firm's marginal revenue over its marginal cost. That is, however, only a first approximation, because firms can incur fixed costs.[[86]](#footnote-87)85 After a firm has incurred a fixed cost, any excess of marginal revenue over marginal cost does indeed exceed what the firm requires in order to continue production. However, if the firm is prospectively deciding *whether* to incur a fixed cost, that fixed cost must be covered by some amount of difference between marginal revenue and marginal cost in order to be worthwhile. In the presence of fixed costs, the mere excess of marginal revenue over marginal cost is only a "quasi-rent."[[87]](#footnote-88)86 To arrive at "true" economic rents, we need to subtract fixed costs from that quantity. Thus, for *n* units of production:

*QuasiRent:*

[SEE DATA IN ORIGINAL]

(*Marginal Revenue[in'i'] - Marginal Cost[in'i'])True Economic Rent:*

*[SEE DATA IN ORIGINAL]*

*(Marginal Revenue[in'i'] - Marginal Cost[in'i']) - Fixed Cost*[[88]](#footnote-89)87

**B. True LSR**

To adapt this definition of true economic rent into a definition of LSR, the key task is to introduce locational attributes. Initially, one might be tempted to think that it is possible to do this by ascribing locational attributes to each portion of a firm's economic rent directly - that is, without ascribing locational attributes to the firm's revenue or costs.

This conception of the relationship between economic rent and LSR is wrong, because rent-generating features of an economy with locational import can arise on the supply side or the demand side (or **[\*302]**both). That is, the marginal revenue curve a firm faces in a particular jurisdiction may, in itself, have particular features (say, large consumer demand created by focused advertising) that feed into economic rent. And the marginal cost curve a firm faces in a particular jurisdiction may have a similar effect (say, a particular jurisdiction reflects a cost advantage for an input). Because rent can be driven by each side of the market and because these effects may be tied to *different* jurisdictions, it will be necessary for the definition of LSR not only to include supply-side effects and demand-side effects, but also to isolate them. To see this, consider a stylized example:

*Segmentation*: A multinational enterprise incurs all fixed costs in jurisdiction *A*, all marginal cost in jurisdiction *B*, and all marginal revenue in jurisdiction *C*. The firm's overall economic rent is 100*x*.

How should the firm's economic rent be attributed to each of the three jurisdictions? To answer that question, we need to consider the second-best options for production and sales separately. To the extent that the firm earns rents because it can produce its goods at especially low cost, its rents are specific to *B*. Conversely, to the extent that the firm earns rents because it can sell its goods in especially high quantities and/or at especially high prices, its rents are specific to *C*.

This is a crucial conceptual distinction between economic rent as it has generally been understood and *location-specific* rent. If we are concerned about efficiency, it is irrelevant whether economic rent is generated by relatively low marginal cost or relatively high marginal revenue all that matters is the resulting difference between the factor's actual return and its second-best return. That is not the case with LSR. A firm's LSR depends on the marginal revenues and the marginal costs that it faces in *each jurisdiction* where it might operate. That is the second key feature of our definition of LSR.

These points set the stage for our proposed definition of true LSR. LSR depends on a counterfactual analysis of alternative options. Moreover, to calculate LSR, we must isolate the impact of cost *and* revenue. Thus, one must inquire about counterfactual cost and revenue - that is, what costs and revenue would have been had an activity been tied to other jurisdictions.

Following these considerations, we propose the following provisional definition of true LSR. The definition is broken into pieces, reflecting the supply side of the market (which we call the *export***[\*303]**jurisdiction), the demand side of the market (which we call the *import* jurisdiction), and the sum of the two:[[89]](#footnote-90)88

(1) *LSR (Import)* =

[SEE DATA IN ORIGINAL]

(*Marginal Revenue (Import)[in'i'] - Marginal Revenue (SecondBest)[in'i']*-(Fixed Cost (Import) - Fixed Cost (Second Best))(2) *LSR* (*Export*) =

[SEE DATA IN ORIGINAL]

(Marginal Cost (Second Best)[in'i'] - Marginal Cost (Export)[in'i'])

-(Fixed Cost (Export) - Fixed Cost (Second Best))[[90]](#footnote-91)89(3) LSR (Total) = (1) + (2).

This definition requires a few clarifications. First, the interpretation we give to "fixed costs" has a functional meaning tied to particular activity it is not a general sense of overall fixed costs of the firm. In other words, we imagine that there may (or may not) be fixed costs related to the distribution/import function (like construction of stores or warehouses) or to the production/export function (like construction of durable, physical production assets). This is the correct interpretation because the underlying question with respect to LSR is whether it is possible to tax economic rent tied to a function in a particular jurisdiction (which may involve a combination of marginal and fixed costs) without affecting the decision to locate the function in that jurisdiction.

Second, LSR is the sum of rents tied to Import *and* Export. This is unavoidable, since costs and revenues each can contribute to rent and may arise in different jurisdictions. Any other approach would limit us to the unrealistic scenario where all relevant revenues and costs are ascribed to a single jurisdiction.

Third, the references to marginal revenue (Import) and marginal cost (Export) can be interpreted as the firm's realized marginal revenues and marginal costs. That is so even though realized marginal revenue and marginal cost can embed elements that are tied to firm-**[\*304]**specific factors.[[91]](#footnote-92)90 For example, Starbucks might sell coffee in a given (Import) jurisdiction and experience associated marginal revenue. That marginal revenue might be relatively high, in part, because Starbucks has a valuable brand. This is not a locational factor it is a firm-based factor. But if the definition is going to do what it's supposed to do - isolate the efficiency characteristics with respect to locational decisions - then it is necessary to encompass rents that are caused by firm-specific factors. If Starbucks is able to earn some quantity of revenue by selling coffee to, say, consumers in the United Kingdom that it could not earn anywhere else, taxing that revenue will not distort Starbucks's locational decisions. That is so even if the revenue that Starbucks earns from selling into the United Kingdom depends on its brand.

**C. Quasi-LSR**

Because LSR has distinct features from economic rent, the meaning of quasi-rent in an open economy does not match the standard sense of quasi-rent exactly. But the core insight is the same: The distinction between true rent and quasi-rent traces a distinction between the short run and the long run.[[92]](#footnote-93)91 Quasi-rent can be taxed away without causing locational distortions in the short run, but only true rent can be taxed away without causing locational distortions in the long run.

Following that insight, what might be called "quasi-LSR" can arise in two different ways. One way, which is similar to a source of non-locational quasi-rent, relates to fixed cost. In a closed economy, fixed costs typically reduce a firm's true economic rent (FTER). Here, however, we have modeled fixed costs in a comparative sense in order to reflect the idea that locational advantages can arise with respect to fixed costs. Thus, accounting for fixed costs can *increase* the amount of LSR. This can create instances in which LSR is greater than FTER. The excess is quasi-LSR.

The label is apt because in the short run a jurisdiction should be able to tax away any such LSR without distorting location. After all, the firm, by definition, can do no better. But in the long run, if taxation exceeds FTER, the firm would be expected to shift its activity out of Import or Export.

A second, more novel, way in which quasi-LSR can arise has to do with the relationship between cost and revenue. LSR can arise on *either* the cost or the revenue side of the market. True LSR, however, cannot exceed FTER, which is determined by both revenue *and* cost. **[\*305]**Thus, it is possible to observe LSR when examining just one side of the market. (Perhaps, for example, Export has a massive cost advantage relative to the next best option.) But until we also look at the other side of the market, we will not know how much (non-locational) economic rent the firm earns. To the extent that the LSR that arises on either side of the market exceeds FTER, taxing it will distort some of the firm's (non-locational) decisions. Thus, the excess LSR is merely quasi-LSR.[[93]](#footnote-94)92

We illustrate below with two cases, the first in which total LSR is no more than FTER and the second in which total LSR exceeds FTER. For simplicity of illustration, but without loss of generality, we demonstrate rents by reference only to the last marginal unit of production.

**[\*306] Case 1**: LSR (Total) = Total True Rent[ql]

**Table 1**

[SEE DATA IN ORIGINAL]

An essential feature of LSR is that it can be taxed without affecting the taxpayer's locational choices. Our definition of LSR in the conditions described in Table 1 are consistent with this basic premise. If the taxpayer is taxed at 100% of the $2.50 of LSR, the taxpayer retains no firm rent at all. This follows from the fact that in this example LSR has been set precisely equal to total true rent. This is the same result as when the taxpayer takes up one, or both, of the second-best options with respect to marginal revenue and marginal cost (assuming the limiting case of no tax at all in the second-best scenario on both the supply side and the demand side). Thus, even with a 100% tax on LSR, there is no incentive to shift location to second-best options, either on the supply side or the demand side of the market.

**[\*307] Case 2**: LSR (Total) > Total True Rent

**Table 2**

[SEE DATA IN ORIGINAL]

[[94]](#footnote-95)99

This simple numerical example shows how quasi-LSR can arise when LSR exceeds FTER. In this case, Import and Export do confer advantages on the firm relative to the second-best locations of its operations. Thus, a 100% tax on these firm's aggregate locational advantages (i.e., its LSR) would not cause the firm to shift the location of **[\*308]**any of its operations. Nonetheless, a 100% tax on LSR would cause the firm's after-tax average cost to exceed its after-tax average revenue. Thus, in the long run, the firm's output would have to shrink the tax would distort the firm's production. So there is indeed LSR, but it is merely quasi-LSR.

**IV.**

Limitations of LSR in the Allocation of Taxing Rights

Now equipped with a sharper understanding of what LSR is, we reconsider whether LSR is an important concept for the allocation of taxing rights. As we noted in Part I, advocates of LSR believe that LSR is not only a tax base that can be taxed efficiently. They also believe that it can be used to solve a long-standing puzzle about fairness in international taxation, which we have called the "measurement problem." In order for LSR to solve this puzzle, LSR must (a) be measurable and (b) represent the exclusive contribution of a particular country to a firm's profit.

In this Part, we draw upon our definition of LSR to show that LSR generally does not have either of these two further features. First, we show that, outside of some specific contexts, LSR is difficult to measure. In order to calculate each firm's LSR, one must ascertain its counterfactual marginal revenues and marginal costs in myriad hypothetical investment opportunities. Outside of specific contexts in which those marginal revenues or marginal costs are obviously de minimis, spinning out those counterfactuals is extremely difficult. That difficulty is aggravated by the further challenge of measuring firms' total economic rent and of attributing a single business line's costs to multiple jurisdictions.

Second, we show that LSR does not represent the exclusive contribution of a particular country to a firm's profit. There is a subtle but important distinction between *what difference an action makes* and *what contribution that action makes to a result*. When we are thinking about the efficiency of particular taxes, the difference that a country makes to a firm's profit is the key concept of interest. However, when we are allocating taxing rights within a contributory theory, the *contribution* that a country makes is of paramount concern. Thus, there is a systematic divergence between LSR and countries' exclusive contributions to profit.

The main upshot of this Part is that LSR is not the holy grail of international taxation. Taxing LSR is indeed efficient. In many contexts, however, it is difficult if not impossible to measure a firm's LSR. Moreover, even if it were measured, LSR would not solve long-standing puzzles about countries' relative contributions to firm's profits.

**[\*309] A. Difficulties of Measuring LSR**

If LSR is to perform a significant role in the allocation of taxing rights, it must be measurable under realistic circumstances. But LSR has several features that make it difficult to measure.

**1. Counterfactual Revenues and Costs**

The most significant aspect of LSR, from the perspective of someone trying to measure it, is that it LSR is determined by each firm's counterfactual revenues and costs. In other words, to calculate LSR, we need to ascertain what a firm *would have* earned and *would have* expended if it had chosen its best alternative to its actual choice. Outside of specific contexts in which a firm's counterfactual revenue and/or costs are clearly de minimis, such counterfactuals are extremely challenging to evaluate.

One reason why counterfactual revenues and costs are difficult to measure is that firms typically only report information about what they do earn and what they do spend, not about what they would have earned and would have spent. Firms, in other words, typically report the tax items that they actually realize.[[95]](#footnote-96)94 Thus, measuring LSR in a comprehensive fashion would likely require new kinds of information to be reported by firms and verified by tax authorities. In many cases, either the reporting or the verification or both will be difficult and uncertain.

While it is true that some historic aspects of tax regimes do involve the evaluation of counterfactuals, these examples do not inspire much confidence. The most illuminating such example is the arm's length standard, according to which transactions between related parties ought to be priced as though they were conducted between unrelated parties. The arm's length standard is notoriously difficult to enforce, precisely because this counterfactual often is difficult to assess.[[96]](#footnote-97)95 The price that an unrelated party would have paid is difficult to evaluate when the asset that is sold is relatively idiosyncratic and, accordingly, there is not a thick market for it.[[97]](#footnote-98)96 For similar reasons, it is difficult to come by reliable information about how much revenue a firm would have earned and how much cost it would have paid if it had placed a factory in a different jurisdiction.

A second reason why the relevant counterfactuals for measuring LSR are difficult to evaluate is that identifying them actually requires **[\*310]**evaluating multiple counterfactuals. As we showed in Part III, the relevant counterfactuals are the firm's marginal revenue and marginal cost if the firm had chosen to operate in the *next-best* jurisdiction. Often, though, it is not obvious which jurisdiction is next-best before we start spinning out the counterfactuals. While we might be able to cast off some jurisdictions as implausible, isolating the next-best jurisdiction will often require comparing several plausible competitors.

We suspect that this point has been overlooked because many academic discussions of LSR have focused on specific contexts in which a firm's counterfactual revenue and/or cost is relatively obvious. Cui and Hashimzade, for example, focus on the LSR that arises when a firm makes its digital platform available to some user base and subsequently derives revenues from that user base.[[98]](#footnote-99)97 In this case, since deploying the platform to users in a particular jurisdiction, *A*, is not exclusive with deploying the platform to users in any other jurisdiction, *B*, the next-best option to deploying to users in *A* results in $0 of marginal revenue. Thus, provided that the firm enjoys some positive economic rent from serving users in *A* (and supposing that it enjoys no location-specific rents on the cost side), all of its rents are LSR to *A*.

The platform LSR studied by Cui and Hashimzade, however, is a special case. LSR can arise in many contexts, several of which do not involve the nonexclusive deployment of factors to one location or any other feature that makes a firm's marginal revenue or marginal cost at its next best option relatively obvious. This fact imposes a significant limitation on the use of LSR in allocating taxing rights.

**2. Calculating the FTER Cap**

In Part III, we noted an interesting way in which quasi-rent can arise in open economies. In open economies, it is possible for a firm's LSR to exceed the firm's true economic rent (FTER). This can happen when a tax would not distort a firm's *locational* decisions but would distort other decisions. In such cases, a tax on LSR would not be efficient. Thus, in order to design an efficient tax on LSR, we need to calculate an "FTER cap" and ensure that a tax on LSR does not exceed it. Calculating an FTER cap, however, raises further practical difficulties.

To see why an FTER cap is necessary to preserve the efficiency of a tax on LSR, consider a stylized example. Suppose that there is some valuable resource in jurisdiction *X*. The world price for this resource is $150. The resource exists in no other jurisdiction, and there are no **[\*311]**plausible substitutes for it. The marginal cost of extracting the resource is $100. Ignore fixed costs for simplicity. Under our proposed definition of LSR, LSR (Export) is effectively infinite because the marginal cost in the second-best jurisdiction, where the resource does not exist at all, is effectively infinite. Though perhaps counterintuitive, this is the correct result, because no matter how much we tax a firm that might extract the resource, it will not choose to extract the resource anywhere else. This (locational) decision simply cannot be distorted by any finite amount of tax. But, of course, important decisions made by the firm could still be distorted by a tax. In particular, if the tax exceeds the firm's true economic rent (in this case, $150 - $100 = $50), it simply won't extract the resource at all. Thus, in order to ensure that a tax on LSR is efficient, we must ensure that it does not exceed FTER.

Identifying and applying an FTER cap is likely to present substantial challenges. One of these challenges is a complicated dynamic problem. One expects a firm to earn FTER when it has unique business opportunities that are not equally available to market competitors. If they were so available, then any rents would be competed away in equilibrium. For example, a firm that is a first mover might have unique access to a jurisdiction where it can acquire inputs at a lower marginal cost than what is available to its competitors. Over time, however, its competitors might acquire access to the same low-cost inputs. In this example, the firm would initially earn some FTER because it has some LSR. Over time, however, competition would bring its marginal revenues down, eventually eliminating its FTER. In this example, the FTER cap moves over time. But respecting this FTER cap is crucial if a tax on the firm's LSR is to remain efficient.[[99]](#footnote-100)98

**3. Costs Attributable to Multiple Jurisdictions**

So far, we have taken for granted that a firm's revenues and costs can be ascribed to particular jurisdictions relatively straightforwardly. In many realistic circumstances, however, particular expenses are plausibly tied to multiple countries. For example, suppose that *X* has relatively low labor costs as compared to *Y*, the second-best option for labor. Based on that comparison, it would seem that there is some positive LSR*[in'X']* (Export). But let's introduce another factor. Perhaps labor in *X* is relatively cheaper because it is relatively less skilled and for that reason requires additional management and supervision from people outside *X*. Ascribing the external cost to *X* is empirically com**[\*312]**plicated. The relevant managers might manage and supervise labor in many jurisdictions, requiring a measurement to divide this aggregate. Further, consider this from the standpoint of *X*, which is attempting to determine the amount of LSR[in'X']. Although jurisdictions may be used to measuring jobs and local wage statistics, jurisdictions are not usually in the business of measuring wage rates for external management, which might just provide a supervisory function to workers in that country, among others. This empirical measurement problem is of a general nature and would arise in any case where there are marginal costs tied to one jurisdiction (in the sense of workers or assets located in a particular place) that are a necessary input to production in another jurisdiction.

**B. The Divergence of LSR and Countries' Exclusive Contributions to Profit**

In Part IV.A, we described three issues that make LSR difficult to measure under many realistic circumstances. These practical difficulties limit the significance of LSR as a concept in the allocation of taxing rights.

Even if our points in Part IV.A are granted, though, one might still think that LSR satisfies all three of the key desiderata for a tax base in limited domains of international tax policy. As we recognized, it does seem relatively straightforward to estimate firms' hypothetical marginal revenues and/or costs when those revenues and/or costs are plausibly $0 (or thereabouts), as when firms contemplate whether to deploy digital platforms to a user base located in a new country. If, additionally, we have rough-and-ready approximations of FTER and the attribution of costs to multiple jurisdictions is not problematic (perhaps because those marginal costs are de minimis), calculating firms' LSR in such domains would not be an insuperable problem. And so it might seem that LSR is able to work its magic, within constraints.

That is not the case. There is a more fundamental problem with the use of LSR in the allocation of taxing rights, a problem that occurs even when LSR is feasible to measure. There is a difference between (a) what can be taxed without causing a firm to move out of *X* and (b) what *X* contributes to a firm's profit. This distinction tracks a deeper one between what difference a condition makes and what contribution that condition makes to a result.99 Because these two concepts are **[\*313]**distinct, and because they frequently are not coextensive, LSR cannot be used to measure a country's exclusive contribution to a firm's profit, even when LSR is relatively easy to measure.

LSR[in'X'] is the portion of a firm's profit that counterfactually depends on the firm's locating some activity in *X*. In other words, it is the difference that *X* makes to a firm's profit. As a heuristic for LSR[in'X'], you might imagine that God moves a firm's activity out of *X* to each alternative jurisdiction, measures the firm's profit in each of the alternatives, and then takes the difference of the firm's profit in *X* and its profit in the next-best jurisdiction.[[100]](#footnote-101)100 That difference is the firm's LSR[in'X'].

The difference made by a condition is a sensible measure of causal contribution in relatively simple cases. These cases involve causal contributions that are additive.[[101]](#footnote-102)101 Roughly put, the contributions made by a set of conditions {C[in'1'], C[in'2'], C[in'3'] .… C[in'n']} are additive just in case the difference made by each condition does not depend on the presence or absence of any other condition.[[102]](#footnote-103)102 For example, suppose that *Billy* and *Suzy* are filling a pool with water.[[103]](#footnote-104)103 Each uses a bucket to scoop water out of a well and empties their bucket into the pool. At the end of the afternoon, *Suzy* has put 60L into the pool and *Billy* has put 40L into the pool. In this case, *Billy*'s and *Suzy*'s contributions are additive: No matter how much or how little *Billy* fills the pool, *Suzy* adds 60L to it, and mutatis mutandis in the opposite direction.[[104]](#footnote-105)104 Accordingly, it is accurate to identify *Billy*'s and *Suzy*'s contributions to the pool with the differences that they make. If *Suzy* had not added any water to the pool, it would have been 60L smaller. And, sure enough, *Suzy* contributes 60L to the pool.

Causal contributions, however, often are not additive. Often, causal conditions synergize with one another, such that some portion of an **[\*314]**effect counterfactually depends on more than one condition.[[105]](#footnote-106)105 For a simple illustration, consider:

*Synergies 1*: *Alex* and *Bridget* write a brief together. Because they collaborate, the brief is high quality it has a 90% chance of prevailing. If either *Alex* or *Bridget* wrote the brief by themselves, it would have been low quality it would have had only a 10% chance of prevailing.

This is a case of synergistic causation. If *Bridget* does not work on the brief, *Alex* only makes the difference between (a) a low-quality brief and (b) no brief at all. If *Bridget* does work on the brief, though, *Alex* makes the difference between (a) a high-quality brief and (b) a low-quality brief. The difference made by *Alex*'s work is affected by *Bridget*'s work.

When an effect is caused synergistically, counterfactual dependence is a bad measure of causal contribution. A synergistic effect depends on multiple conditions acting in concert. Thus, identifying such an effect as the exclusive product of one condition underrates the contributions made by other conditions.

Think about *Synergies 1*. In that example, the high quality of the brief depends on *Bridget*'s work. It also depends on *Alex'*s work. If the difference between what actually results and what would have happened without *Bridget'*s effort is her exclusive contribution, she alone deserves credit for the high quality of the brief. But that is false. *Alex* contributed, too.

Synergistic causation pervades the global economy, often arising when a firm possesses some unique asset that combines with the unique circumstances found in a particular location to yield an especially high return. Synergistic causation can even produce paradigmatic cases of LSR. Consider a stylized example of extracting a natural resource:

*Synergies 2*: *Alphaco* has designed a uniquely powerful type of offshore ***oil*** rig. This rig is able to exploit deep-lying ***oil*** fields in *B*. Since no other firm knows how to design such a rig, no other firm can exploit *B*'s ***oil*** fields.

*Alphaco* extracts ***oil*** from *B*. By exploiting *B*'s ***oil*** fields, *Alphaco* sells an additional 1 billion barrels of ***oil*** at $90/barrel of marginal revenue and $10/barrel of marginal cost.

**[\*315]**In this case, *Alphaco* earns $80 billion of LSR by extracting ***oil*** in *B*.[[106]](#footnote-107)106 But *B* is not the only entity that contributes to the $80 billion of marginal profit. That $80 billion also depends on *Alphaco*'s specially designed ***oil*** rig, which might, in turn reflect contributions made by other states. (Perhaps, for example, the rig was designed at *Alphaco*'s headquarters, which employs many people educated at *A*'s public schools.) Thus, identifying all of *Alphaco*'s LSR as *B*'s exclusive contribution overestimates *B*'s contribution to *Alphaco*'*s* profit.

We have identified a fundamental problem with identifying LSR[in'X'] as *X*'s exclusive contribution to a firm's profit. The causal concept embedded in LSR - counterfactual dependence - is different from causal contribution. This problem is not limited to hard cases it arises even in paradigmatic cases of LSR.

We anticipate two responses. The first would carve out cases of synergistic causation from the general principle that each country should be assigned the right to tax the LSR that originates in it. Even if some LSRs are caused synergistically, this response asserts, some LSRs are not. For example, suppose *B*'s ***oil*** fields can be exploited not only with the ***oil*** rig that *Alphaco* designs in-house in *A*, but alternatively with ***oil*** rigs designed and produced in *C*, *D*, *E*, and many other countries. In this case, *Alphaco*'*s* opportunity to earn profit in *B* does not depend on some condition in *A*. Instead, it depends on a much more complex disjunctive set of conditions that could arise in many different countries. In other words, the condition supplied by *A* (or *C*, or *D*, or .…) is replaceable. And one might think that replaceable conditions do not make a contribution. If that thought is correct, LSR might still accurately measure a country's exclusive contribution to profit under some important circumstances.

Note, first, that this response makes a significant concession. Many of the practical controversies to which scholars and policymakers want to apply LSR involve unique assets supplied by firms. The "platform rent" believed to be earned by Google, Facebook, Twitter, and others arises because of the firms' algorithms and networks.[[107]](#footnote-108)107 Similarly, rent believed to be earned by Starbucks, Nike, and other consumer-facing businesses arises because those firms have developed powerful **[\*316]**brands.[[108]](#footnote-109)108 So if LSR can only be used to allocate taxing rights when the assets deployed by a firm are easily replaceable, LSR cannot be used to illuminate many of the controversies that it is supposed to inform.

Second, and more importantly, this response relies on an implausible premise about causal contribution. This response assumes that replaceable conditions do not contribute at all. But replaceable conditions do contribute.[[109]](#footnote-110)109 To see why, consider a variation on our brief-writing example (*Synergies 1*). Suppose that *Alex* and *Bridget* do, in fact, collaborate on the brief but, if *Alex* did not write the brief with *Bridget*, *Alex* would have written it with *Clara*, and the brief would not have lost any quality. Under these conditions, *Bridget* is replaceable. So if replaceable conditions do not contribute, *Bridget* makes no contribution to the brief. But that is false. If *Bridget* actually does write the brief with *Alex*, she contributes to its high quality, regardless of whether someone else would have worked in her stead.[[110]](#footnote-111)110

A second response to our argument would propose a revised concept of LSR, one that embeds a more discriminating notion of causal contribution. Roughly put, this concept would be a return to a factor of production that can only be earned in one location *and* that is attributable (in some sense) to the location rather than the firm's assets.

Though this response does address the problem that we have identified in this Section, it does so by sacrificing a feature of LSR that is crucial to its appeal. LSR was supposed to solve the problem of identi**[\*317]**fying which returns are attributable to which conditions. LSR promised to solve this problem because (a) it seemed to be measurable and (b) it seemed to be an exclusive contribution made by a particular country to a firm's profit. But if LSR is *defined* so that it is attributable to a particular location, it offers little help with the original puzzle. Now we need to attribute a firm's profits to its assets and its surrounding environment in order to measure LSR itself.

A similar point holds for more ambitious redefinitions of LSR that deny the efficiency of taxing LSR is an essential feature of LSR. If, for example, one asserts that LSR simply is a rent that is contributed by one jurisdiction exclusively, identifying LSR obviously recapitulates the measurement problem. Additionally, if LSR cannot necessarily be taxed efficiently, international tax systems that assign each country the right to tax its LSR do not satisfy the efficiency desideratum. So this move makes limited progress on one problem by sacrificing one feature of LSR that has made it so appealing.

**V. A Modest Role for LSR in the Allocation of Taxing Rights**

We have argued that LSR is not the holy grail of international taxation. The magic of LSR works by identifying a tax base that can be taxed efficiently, then making the further claim that this base is measurable, and then making the additional claim that this base represents a contribution to profit made exclusively by a particular country. We have argued that those latter two claims are false: It is frequently infeasible to measure LSR and even if it were measured, it would not represent a contribution to profit made exclusively by one country.

One might be tempted to conclude that LSR is not at all useful in international tax policy. We think that this reaction is premature. LSR can inform debates about the allocation of taxing rights, even though it cannot settle them.

For LSR to play this part, we will have to stop associating it with countries' contributions to profit, and we will have to think of it purely in terms of efficiency. Since LSR can be taxed efficiently, it is good to allocate taxing rights in a way that enables countries to tax LSR, all else being equal. Moreover, there are special contexts in which the practical hurdles to measuring LSR (understood purely in terms of efficiency) can be overcome. In these contexts, it is feasible to act on the guidance to increase countries' aggregate capacities to tax LSR, all else being equal.

This role for LSR is modest because all else frequently is not equal. Often, policymakers confront difficult distributive trade-offs concerning LSR. When they do, it might be preferable to sacrifice some capacity to tax LSR for a fairer allocation of taxing rights. To identify **[\*318]**which allocations are fair, and to determine how to resolve trade-offs between fairness and efficiency, we need to rely on a general theory of global distributive justice. Such a theory probably would not entail that every country should have the right to tax the LSR that originates in it.

**A. A Normative Framework for LSR**

LSR is an overworked concept. It does not have all the features that one might want in a concept that would guide the allocation of taxing rights, or indeed all of the features that have been claimed on its behalf.

That point leaves open how we *should* understand LSR. We are free to make up concepts as we like. So if we have to choose just one feature of LSR to be its essential property - the efficiency of taxing it, or its representation of a country's contribution to profit - which one should we choose?

LSR should be understood solely in terms of efficiency. LSR, so understood, is more interesting than a concept of LSR that is defined so that it represents the contribution of just one country to profit. That is obviously true if national contributions are irrelevant to the fair allocation of taxing rights. But even if national contributions do bear on the fair allocation of taxing rights, it is not very interesting to have a concept that merely labels a particular country's contribution to profit.

If LSR is understood purely in terms of efficiency, it is normatively significant for two reasons. First, it can be taxed without significantly diminishing total productivity. Second, much LSR is earned by businesses operating in corporate form, and the burden of taxes imposed on corporate rents tends to fall on shareholders, people who tend to be well-off.[[111]](#footnote-112)111 Thus, as Michael Devereux observes, "the efficient tax also happens to be progressive."[[112]](#footnote-113)112 For both of these reasons, it would make sense to assign taxing rights in such a way that increases the aggregate amount of LSR that can be taxed effectively, all else being equal.

**[\*319] B. Promising Areas for the Use of LSR**

Even this limited guidance - increase aggregate capacity to tax LSR, all else being equal - would be for naught if LSR cannot be identified. And, of course, in Part IV.A, we argued that LSR frequently is difficult to measure.

Nonetheless, LSR is useful because the practical hurdles to measuring LSR are not equally grave wherever LSR arises. Further, in instances where problems do arise, the analysis we offer in this Article sheds light on how one might best construct a tax on LSR in the face of such challenges. In this Section, we discuss two examples to illustrate: platform rents and labor rents.

**1. Platform Rent**

Platform rents can arise when a firm faces no opportunity cost of deploying its digital platform to a particular jurisdiction and deploying the platform to that jurisdiction enables the firm to earn some marginal revenue. In such a case, the firm earns LSR on the demand side (or what we have sometimes called the "import" side) of the market. The marginal revenue it derives from the actual jurisdiction is some positive number. Meanwhile, the marginal revenue it would have derived from its second-best option is $0, since there is no productive alternative to deploying the platform to the actual jurisdiction. If the firm does not deploy the platform to the actual jurisdiction, the platform isn't thereby freed to be deployed to a different jurisdiction. It simply reaches fewer people.

When firms earn platform rent, the practical hurdles to measuring LSR are not severe. First, we have access to sufficient information to evaluate the relevant counterfactuals for quantifying platform rent. Because platform rent arises on the demand side of the market, we can ignore marginal costs. Moreover, because we know that there is no opportunity cost of deploying the platform to a particular jurisdiction, we know that the marginal revenue in the next best jurisdiction is $0.

Second, it is unlikely that one would need to calculate an FTER cap in this case. FTER becomes relevant when particular relationships between cost and revenue lead to situations in which LSR exceeds FTER and thus should be understood as quasi-LSR. In this case, however, it seems sensible to ignore costs, so no issue should arise.

Finally, since platform rent arises on the demand side of the market, we don't need to attribute costs to multiple jurisdictions in order to calculate LSR.

**[\*320] 2. Labor Rent**

One of us (Kane) has argued that transfer pricing rules ought to be analyzed with an appreciation of location-specific advantages, or LSAs.[[113]](#footnote-114)113 Within our framework, LSAs can be thought of as savings that arise with respect to LSR (Export) because of cost-savings possibilities in a particular jurisdiction. These advantages can reflect items such as cost savings from low-cost labor inputs. As a conceptual matter, an LSA reflects the importance of counterfactual analysis. The concept indicates that a firm can achieve a cost or revenue advantage in one jurisdiction relative to the case where the firm were to operate in some other jurisdiction.

Consider a simple example. Suppose a firm has historically employed labor at a cost of $10/unit production and can achieve a cost reduction to $7/unit production by outsourcing the labor. Imagine that before outsourcing the firm is engaging in marginal cost pricing and selling at $10/unit (ignoring any other production costs or fixed costs for simplicity). If the outsourcing is done through a subsidiary company, then under international tax transfer pricing rules the subsidiary must be compensated on an "arm's length basis." In other words, the parent company must indicate, for tax purposes, that it pays its subsidiary whatever it would have paid an unrelated third party for the same input. What is an arm's length compensation here, though? Is it $10 or is it $7? There are unrelated parties in different places in the world that would demand each of these levels of compensation. Existing rules would place it at $7, suggesting that the comparison point should be the market cost for labor in the jurisdiction where the labor is performed.[[114]](#footnote-115)114 There is $3 of FTER here. From the subsidiary's perspective, it would acquire labor for a $7 cost and would be compensated for doing this with a $7 benefit. Thus, the subsidiary is treated as realizing none of the $3 of FTER, all of which is instead booked by the parent company. Kane, however, has argued that the subsidiary should be compensated at $10, effectively bringing the $3 of rent into the subsidiary and into the tax base of the jurisdiction where the labor is performed.

It may be possible to address the challenges of assessing counterfactuals in this case. Much like Cui and Hashimzade, Kane worked around, or assumed away these complications. With respect to counterfactual analysis, the transfer pricing context presents a somewhat distinct informational space. It is acknowledged in existing doctrine that the setting of arm's length prices should take account of geographic submarkets and that prices should be set for the relevant **[\*321]**market. This sets the stage for precisely the sort of counterfactual analysis that is required. As Kane put it, in a two-country model, the transfer price should be set by reference to the jurisdiction of labor demand, not labor supply. That is, we will use actual firm-level data (payment to local labor) to generate $7 in this example (a deduction) and we will reference the price in the jurisdiction of labor demand (a counterfactual rather than realized amount, conditional on outsourcing), or $10 (an inclusion). The net of $3 is what would be predicted by our definition of LSR (Export). This argument will be particularly persuasive in an outsourcing case if the jurisdiction of labor demand also happens to be the jurisdiction where the firm sourced labor prior to outsourcing.

Generalizing from this example, in some contexts an historical timeline might provide information about counterfactuals. By looking to what a firm used to do, we may get valuable information about the needed counterfactual analysis as it relates to what a firm currently does. (Of course, this only works if the jurisdiction where the firm historically operated is the second-best option on offer, which may well not be the case.) Moreover, we can bypass counterfactual analysis on the demand side of the market if we assume that there is a single equilibrium retail price everywhere. In the fact pattern above, there is no LSR (Import) if we assume that $10 is the equilibrium retail price everywhere. That may be a plausible assumption for a range of goods and services.

Issues regarding FTER and cost ascription to multiple locations remain complex in the context of labor rents. We hope our analysis provides a way to approach these problems in a rigorous way.

Consider FTER first. The basic problem is that the relationship between LSR and FTER in this context is dynamic. In the example sketched above, FTER would not matter, because we observe $3 of FTER and $3 of LSR. But this is not a stable equilibrium. Over time, cost savings on the supply side of the market will be passed to consumers, as other suppliers also outsource.[[115]](#footnote-116)115 At the end of this dynamic phase, FTER drops from $3 to 0. But assuming labor costs hold constant everywhere, as they may well do, LSR (Export) holds steady at $3. Calling upon our discussion above, this is an instance where the LSR should now be understood as quasi-rent rather than true economic rent because LSR > FTER. A sensible approach would be to cap the tax on LSR at the level of FTER, or zero here.

For a real-world instrument to impose such an FTER cap, the jurisdiction of labor supply would have to somehow incorporate fluctua**[\*322]**tions in the market price of the finished good into its calculation of the tax base. There is no easy way to do this under existing rules, but one could perhaps derive rough solutions like taxing LSR on an arbitrarily time-delimited basis.

This dynamic problem generalizes to any case in which LSR (Export) arises because of relative locational cost advantages, which then drive production decisions. Though such cost advantages should give rise to LSR and FTER in the short run, in the long run they should produce a situation in which LSR > FTER once retail market prices adjust.

Regarding cost ascription, one faces a difficult, though perhaps not impossible, problem. One can, at least at a conceptual level, state clearly what we are trying to measure. Consider the above example again before dynamic adjustment of the market. We observe $3 of true LSR and $3 of FTER. One should be able to tax the $3 of true LSR without observing changes in locational behavior. However, this ignores costs that may arise in other jurisdictions. Perhaps the outsourced labor requires additional supervisory functions from abroad of 50 cents per unit abroad. If so, then this cost should be ascribed to the marginal cost of producing in the low-cost labor jurisdiction. We should calculate true LSR (and FTER) of $2.50 rather than $3.00. If we failed to do this and attempted to tax a full $3, then we would expect a locational response.

The complication of ascribing extraterritorial costs will vary across industry and sector. To the extent that labor rents and labor outsourcing present an instance of relatively discrete and identifiable remote supervisory roles, it may be possible to make substantial progress in taxing LSR.

**C. Open Questions**

Our general prescription to augment taxation of LSR, all else being equal, leaves open two challenging problems. First, the mere isolation of LSR as a tax base will not provide an answer to how to allocate rights to tax LSR. Taxation of LSR may be distributionally justified as a *general* matter on the grounds that the tax will be borne by relatively wealthy owners of corporate capital. But that point tells us nothing about who should tax the rent. Thus, LSR cannot by itself determine how to choose between two different international tax systems that contain the same overall amount of LSR. Suppose, for example, that Google would earn $10*x* of LSR from its operations in the United Kingdom, regardless of whether an exclusive right to tax those rents is assigned to the UK or to France. The relative prosperity of Google's **[\*323]**shareholders, cannot, by itself, tell us whether the UK or France ought to possess the right in question.

Second, we need an account of when other things are not equal. There are a variety of international distributive concerns that might plausibly motivate one to embrace an international tax system that provides for less taxation of LSR overall but allocates the taxing rights over LSR more fairly across countries.

To provide a complete answer to these questions - who gets to tax LSR? and when should we depart from maximizing the aggregate amount of tax on LSR? - one would need to articulate a theory of global distributive justice. Though we leave that large task to other work, we would make one preliminary observation. It is unlikely that a sound theory of global distributive justice would entail that each country has a distinctive or superior claim to tax the LSR that originates within it.

This implication follows relatively straightforwardly if taxing rights ought to be allocated solely by reference to individual need. It is extremely unlikely that the person who would benefit the most from revenues raised by taxing some LSR lives where the LSR originates.

More counterintuitively, countries do not have a distinctive or superior claim to tax the LSR that originates within them even if their taxing rights should reflect their contributions to profit. As we showed in Part IV.B, the LSR that originates in a particular country does not represent a contribution to profit made exclusively by that country. Thus, there is no tight fit between the concept of LSR and the goal of rewarding national contributions.

**VI. Conclusion**

An emerging consensus of scholars has come to believe that LSR can solve some of the oldest problems in international taxation. But these scholars have not rigorously defined LSR, nor have they patiently thought through whether LSR in fact can perform all the work that it is expected to do. Against this consensus, we have argued that LSR, properly understood, can only play a limited role in the allocation of taxing rights.

In this Article, we have provided the first general and precise definition of LSR. Our definition has three crucial elements: (1) it relies on counterfactuals (2) it requires analysis of both the supply side and the demand side of the market as rent can be generated either by differentially low marginal cost or differentially high marginal revenue and (3) it caps a firm's LSR at the firm's true economic rent.

We have also shown that LSR, so understood, cannot by itself resolve difficult normative questions about how to allocate taxing rights. **[\*324]**LSR frequently is difficult to measure. Additionally, even when LSR can be measured, it is not the sort of thing that *should* resolve debates about how to allocate taxing rights. Even if countries should receive taxing rights that fit their contributions to firms' profit, the LSR that arises in a jurisdiction does not represent that jurisdiction's exclusive contribution to a firm's profit.

Nonetheless, LSR can be a useful tool in international tax policy. Since LSR can be taxed efficiently, opportunities to increase countries' aggregate capacity to tax LSR should be welcomed when all else is equal. And, in special circumstances, the practical difficulties of measuring LSR are not severe.

But it typically is the case that all else is not equal. International tax policy is shot through with decisions in which one choice will tend to benefit the people of one country and an alternative choice will tend to benefit the people of another. LSR cannot resolve those decisions. To make them, we would need to rely on a general theory of global distributive justice. Such a theory probably would not yield the conclusion that each country ought to have the right to tax all LSR that originates within it.

[[116]](#footnote-117)93

New York University Tax Law Review

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1. \* Kane: Gerald L. Wallace Professor of Taxation, New York University School of Law. ***Kern***: Furman Fellow, New York University School of Law. We would like to thank Lily Batchelder, Yariv Brauner, Joe Candelora, Michael Devereux, Ryan Fackler, Lilian Faulhauber, Ned Hall, Jim Hines, Michael Schler, Daniel Shaviro, Stephen Shay, and participants at the Oxford-Michigan-MIT-Munich-Georgetown (OMG) Transatlantic Tax Talk Series for helpful comments and discussions. We thank Jack Rogers, Stephen Profeta, and Annmarie Zell for valuable research assistance. [↑](#footnote-ref-2)
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12. 11See Parts I-II. [↑](#footnote-ref-13)
13. 12See, e.g., Cui, note 5, at 96, 105 Sullivan, note 8, at 696 Aslam & Shah, note 8, at 11-12 Michael P. Devereux, How Should Business Profit Be Taxed?, 40 Fiscal Stud. 591, 608 (2019). [↑](#footnote-ref-14)
14. 13See, e.g., Cui, note 5, at 96, 105 Sullivan, note 8, at 696 Aslam & Shah, note 8, at 11-12. [↑](#footnote-ref-15)
15. 14See, e.g., Cui, note 5, at 96, 104-05 Sullivan, note 8, at 696 Aslam & Shah, note 8, at 11-12. [↑](#footnote-ref-16)
16. 15See, e.g., Cui, note 5, at 96-97 Shaviro, note 8 see also Bankman, Kane & Sykes, note 9 (suggesting that multinational enterprises earn a substantial amount of rents) Edward G. Fox & Zachary D. Liscow, A Case for Higher Corporate Tax Rates, 167 Tax Notes Fed. 2021, 2028-29 (2020) (same) Edward Fox, Does Capital Bear the U.S. Corporate Tax After All? New Evidence from Corporate Tax Returns, 17 J. Empirical Legal Stud. 71, 75 n. 12 (2020) (same) Roger H. Gordon & Joel Slemrod, Do We Collect Any Revenue from Taxing Capital Income? 2 Tax Pol'y & the Econ. 89 (1988) (same) Roger Gordon et al., Do We Now Collect Any Revenue from Taxing Capital Income, 88 J. Pub. Econ. 981 (2004) (same). [↑](#footnote-ref-17)
17. 16See, e.g., Sullivan, note 8, at 696 Cui, note 5, at 100 Michael P. Devereux & Simon Loretz, What Do We Know About Corporate Tax Competition?, 66 Nat'l Tax J. 745 (2013) Michael P. Devereux, Business Taxation in a Globalized World, 24 Oxford Rev. Econ. Pol'y 625, 627 (2008) (suggesting that, in international taxation, the only non-distortionary tax would be one that attaches to LSR) Michael P. Devereux et al., Corporate Income Tax Reforms and International Tax Competition, 17 Econ. Pol'y 449, 478 (2002) ("There may be location-specific rents in a particular country - that is, economic rent over and above that which could be earned elsewhere. In principle, such location-specific rents could be taxed without distorting the location of firms and capital."). [↑](#footnote-ref-18)
18. 17See, e.g., Devereux et al., note 7, at 39 (arguing that countries that host the extraction of natural resources ought to be entitled to tax profits derived therefrom because those resources "would most naturally be considered as being owned by the residents of the country concerned") Sullivan, note 8, at 696 (stating that it seems "beyond dispute" that countries ought to be able to tax income derived from natural resources located within them) Devereux, note 12, at 608 ("An exception to these objections to taxing profit in the origin country is the treatment of profit derived from the exploitation of natural resources. This is an exception largely on fairness grounds - the country with the resource should receive the revenue .…") Cui, note 5, at 101 ("[I]t 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.") McLure, note 8, at 148 ("[A] country might reasonably expect to garner for its fiscal coffers part of the extraordinary returns generated by economic activity conducted within its boundaries"). [↑](#footnote-ref-19)
19. 18We don't mean to suggest that these desiderata are irreducible. They could be grounded in some deeper set of values, which in turn would explain how the desiderata should be traded off against each other. Cf*.* Louis Kaplow, The Theory of Taxation and Public Economics 38-39 (2008) (criticizing the use of multidimensional criteria in tax policy when not accompanied by a deeper explanation of why it is good to satisfy the criteria and how the criteria should be traded off against each other). [↑](#footnote-ref-20)
20. 19See, e.g., Devereux et al., note 12, at 41-50 Devereux, note 12 Michael S. Knoll, Reconsidering International Tax Neutrality, 64 Tax L. Rev. 99, 100 (2011) Mitchell Kane, Ownership Neutrality, Ownership Distortions, and International Tax Welfare Benchmarks, 26 Va. Tax Rev. 53 (2006) Mihir A. Desai & James R. Hines, Jr., Evaluating International Tax Reform, 56 Nat'l Tax J. 487 (2003) Peggy B. Musgrave, United States Taxation of Foreign Investment Income 74-75 (1969). Other margins are important as well but are not at stake in the particular debates that we examine in this Article. For example, taxing rights can distort governments' choices about the production of public goods. However, whether countries have the right to tax the LSR that originates within them is largely orthogonal to those choices. [↑](#footnote-ref-21)
21. 20See, e.g*.*, Christians & van Apeldoorn, note 7, at 9-36 Michael J. Graetz, Taxing International Income: Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies, 54 Tax L. Rev. 261 (2001) Richard A. Musgrave & Peggy B. Musgrave, Inter-Nation Equity, in Modern Fiscal Issues 63 (Richard M. Bird & John G. Head eds., 1972). [↑](#footnote-ref-22)
22. 21See, e.g*.*, Gijsbert W.J. Bruins et al., Report on Double Taxation Submitted to the League of Nations Finance Committee (1923) Wolfgang Schön, One Answer to Why and How to Tax the Digitalized Economy, 47 Intertax 1003 (2019) Cui, note 5 David Elkins, The Myth of Corporate Tax Residence, 9 Columbia J. Tax L. 1, 19-20 (2019) Stephen Shay et al., What's Source Got to Do With It?, 56 Tax L. Rev. 81, 90-92 (2002) Graetz, note 20, at 297-98 Laurence Lokken, The Sources of Income from International Uses and Dispositions of Intellectual Property, 36 Tax L. Rev. 233, 240-42 (1981) Musgrave & Musgrave, note 20, at 63 T.S. Adams, Federal Taxes Upon Income and Excess Profits, 8 Am. Econ. Rev. 18, 20 (1918). [↑](#footnote-ref-23)
23. 22See note 21. [↑](#footnote-ref-24)
24. 23See, e.g., Christians & Van Apeldoorn, note 7 Tsilly Dagan, International Tax Policy: Between Competition and Cooperation 200-03 (2018) Daniel N. Shaviro, Fixing U.S. International Taxation 107-177 (2014) Kane & ***Kern***, note 7 Ilan Benshalom, The New Poor at Our Gates: Global Justice Implications for International Trade and Tax Law, 85 N.Y.U. L. Rev. 1 (2010). [↑](#footnote-ref-25)
25. 24See, e.g., Henry Sidgwick, The Elements of Politics 286 (1891) ("[Each] government should take as its ultimate end and criterion of right conduct, in dealing with communities outside it, the interest or happiness of *all* the persons concerned.") (emphasis added) Charles R. Beitz, Political Theory and International Relations (2d ed., 1999) (1978) (arguing for a global version of Rawls's Difference Principle, according to which global institutions should assign strict priority to those who are worst-off in global terms) David Miller, National Responsibility and Global Justice 163-200 (2007) (arguing that global institutions should ensure that everyone's holdings are sufficiently good) Martha C. Nussbaum, Frontiers of Justice: Disability, Nationality, Species Membership 279-80 (2006) (same). [↑](#footnote-ref-26)
26. 25Cui, note 5, at 105 Sullivan, note 8 Aslam & Shah, note 8, at 11-12. Relatedly, while Devereux generally doubts the contributory theory because of the measurement problem, he makes an exception for LSR. See Devereux, note 12, at 608. One exception is Shaviro, who is enthusiastic about LSR but believes in a need-based theory of fairness in international taxation. See Shaviro, note 8. [↑](#footnote-ref-27)
27. 26For statements of the measurement problem, see, e.g., Devereux et al., note 7, at 38-39 Shaviro, note 23, at 18-19 Johanna Stark, Tax Justice Beyond National Borders, 42 Oxford J. Leg. Stud. 133 (2022) Schön, note 21, at 1006 Adam Rosenzweig, Defining a Country's "Fair Share" of Taxes, 42 Fla. St. U. L. Rev. 373, 373-76 (2015) Wolfgang Schön, International Tax Coordination for a Second-Best World (Part I), World Tax J. 67, 68 (2009) Reuven S. Avi-Yonah, International Tax as International Law, 57 Tax L. Rev. 483, 490 (2004). [↑](#footnote-ref-28)
28. 27See, e.g., Reuven S. Avi-Yonah, Kimberly A. Clausing & Michael C. Durst, Allocating Business Profits for Tax Purposes: A Proposal to Adopt a Formulary Profit Split, 9 Fla. Tax Rev. 497, 500 (2009). [↑](#footnote-ref-29)
29. 28See note 26. [↑](#footnote-ref-30)
30. 29Scare quotes are necessary because corporations don't live. [↑](#footnote-ref-31)
31. 30See, e.g., Daniel Shaviro, The Rising Tax-Electivity of U.S. Corporate Residence, 64 Tax L. Rev. 377 (2011) (residence) Hugh J. Ault & David F. Bradford, Taxing International Income: An Analysis of the U.S. System and Its Economic Premises, in Taxation in the Global Economy 11, 30 (Assaf Razin & Joel Slemrod eds., 1990) (source) Edward D. Kleinbard, Stateless Income, 11 Fla. Tax Rev. 699, 701 (2011) (both). But see Kane, note 1. [↑](#footnote-ref-32)
32. 31See, e.g., Devereux et al., note 7, at 113-14 (reporting that the location of economic activity is "very sensitive to differences in tax between countries" under the current international tax regime) Lars P. Feld & Jost H. Heckemeyer, FDI and Taxation: A Meta-Study, 25 J. Econ. Surveys 233 (2011). [↑](#footnote-ref-33)
33. 32See IRC §7701(a)(4)-(5) (defining a domestic corporation as one "created or organized in the United States or under the law of the United States or of any [U.S.] State" and a foreign corporation as one that is not domestic). [↑](#footnote-ref-34)
34. 33See, e.g., Devereux et al., note 7 Reuven S. Avi-Yonah & Ilan Benshalom, Formulary Apportionment: Myths and Prospects - Promoting Better International Policy and Utilizing the Misunderstood and Under-Theorized Formulary Alternative, 3 World Tax J. 371, 373, 378 (2011) Avi-Yonah et al., note 27, at 500. [↑](#footnote-ref-35)
35. 34For this description of formulary apportionment, see Kane & ***Kern***, note 7, at 3. [↑](#footnote-ref-36)
36. 35Avi-Yonah & Benshalom, note 33, at 385. [↑](#footnote-ref-37)
37. 36Urban-Brookings Tax Policy Center, How Would Formulary Apportionment Work?, https://www.taxpolicycenter.org/briefing-book/how-would-formulary-apportionment-work (last updated May 2020). [↑](#footnote-ref-38)
38. 37Devereux et al., note 7 Devereux, note 12 Avi-Yonah,Clausing & Durst, note 27. [↑](#footnote-ref-39)
39. 38Kane & ***Kern***, note 7. Advocates of formulary apportionment based on sales point out that sales are less elastic than many alternative apportionment factors, such as assets and employees. Devereux et al., note 7 Avi-Yonah, Clausing & Durst, note 27. [↑](#footnote-ref-40)
40. 39See Cui, note 5 Wei Cui & Nigar Hashimzade, The Digital Services Tax as a Tax on Location-Specific Rent (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3321393 see also Mitchell A. Kane, Location Savings and Segmented Factor Input Markets: In Search of a Tax Treaty Solution, 41 Brook. J. Int'l L. 1108 (2016) (analyzing tax allocation based on LSR, though not extrapolating, like Cui, to suggest that LSR is a generally promising tax base). [↑](#footnote-ref-41)
41. 40See Cui, note 5, at 88 ("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."). [↑](#footnote-ref-42)
42. 41Distinguish this form of LSR from agglomeration or natural-resource extraction LSR. In the latter cases, LSR is generated by fixed economic activity. For instance, copper can only be mined where it is naturally occurring and the returns from centers of economic activity can only be earned therein. In the digital platform example, however, rents are immobile because they are generated by the costless, non-rivalrous deployment of digital infrastructure. That is, the marginal cost and opportunity cost of the rent-generating activity is zero. [↑](#footnote-ref-43)
43. 42Cui, note 5, at 101. [↑](#footnote-ref-44)
44. 43Id. [↑](#footnote-ref-45)
45. 44Cui, note 5, at 101. [↑](#footnote-ref-46)
46. 45Id. at 100-01. [↑](#footnote-ref-47)
47. 46See Cui, note 5, at 88. [↑](#footnote-ref-48)
48. 47Id. at 101. [↑](#footnote-ref-49)
49. 48See, in addition to the sources mentioned in this paragraph, Devereux, note 12, at 608. [↑](#footnote-ref-50)
50. 49Sullivan, note 8, at 696 ("Property rights to resources ought to accrue to the public at large rather than to private citizens, since they represent the bounties nature has bestowed on the economy rather than a reward for economic effort of some sort.") (alteration in original) (quoting Boadway & Flatters, The Taxation of Natural Resources: Principles and Policy Issues 43 (The World Bank, Working Papers, WPS 1210, 1993)). [↑](#footnote-ref-51)
51. 50Sullivan, note 8, at 697. [↑](#footnote-ref-52)
52. 51Aslam & Shah, note 8, at 11-12. [↑](#footnote-ref-53)
53. 52Id. [↑](#footnote-ref-54)
54. 53Id. at 12 n.14 see also id. at 28 (describing taxes on sunk investments as "justify[able] in economic terms as far as they represent location-specific rents that are immune to erosion by tax competition"). [↑](#footnote-ref-55)
55. 54See, e.g., Devereux, note 12, at 592 ("[O]ptimal tax theory .… broadly explores the trade-offs between economic efficiency and equity between taxpayers.") Thomas Piketty & Emmanuel Saez, Optimal Labor Income Taxation, in 5 Handbook of Public Economics 391, 400 (2013) ("At the center of the political debate on labor income taxation and transfers is the equity-efficiency trade-off."). [↑](#footnote-ref-56)
56. 55See, e.g., David Ricardo, On the Principles of Political Economy and Taxation 121 (Batoche Books, 3d ed. 2001) (1817), http://socserv.mcmaster.ca/econ/ugcm/3ll3/ricardo/Principles.pdf Bankman, Kane & Sykes, note 9, at 202 Fox & Liscow, note 15, at 2024. [↑](#footnote-ref-57)
57. 56See, e.g., John Stuart Mill, Principles of Political Economy 818 (W.J. Ashley ed., Longmans, Green and Co., new ed., reprt. 1936) (1848) (identifying one element of rent as "an increase owing solely to the general circumstances of society"), https://oll-resources.s3.us-east-2.amazonaws.com/oll3/store/titles/101/0199\_Bk.pdf Editorial, Manchester Guardian, Feb. 23, 1899, at 6, attributed to Leonard Hobhouse in Peter Clarke, Liberals and Social Democrats 66 (Cambridge Univ. Press, digitally printed version 2007) (1978) ("[A]ll that is known as `economic rent' .… is due not so much to the exertions of any assignable individual as to the general growth and energy of the community.…") Henry George, Progress and Poverty 413 (Robert Schalkenbach Found., 50th anniversary ed., 1929) (1879) ("[Rent] is not in any case the creation of the individual who owns the land it is created by the growth of the community."), https://hdl.handle.net/2027/uc1.$b519 Draft Letter from Robert Hale to the Editor of the New Statesman (London) (Sept. 2, 1913) (on file with the Columbia University Rare Book & Manuscript Library, Robert Lee Hale papers, folder 62) ("The solution of the whole industrial problem would seem to lie somewhere in the direction of ascertaining precisely where a man is enabled to enjoy tribute collected from the rest of the community for things other than services rendered and then preventing him from enjoying this product of other men's labor .…"), quoted in Fried, note 9, at 148 Robert Hale, Economic Theory and the Statesman, in The Trend of Economics 189, 220 (Rexford Guy Tugwell ed., 1924) (asserting that rents are "special benefits conferred by the government") David Gauthier, Morals by Agreement 273 (1986) ("Society may be considered as a single co-operative enterprise. The benefit represented by factor rent is part of the surplus afforded by that enterprise, for it arises only in social interaction."). For an excellent survey of this intellectual tradition, see Fried, note 9. Many theorists in this tradition also believed that taxing rent is efficient. Id. at 155 & 303 n.275. [↑](#footnote-ref-58)
58. 57For catalogs of causes of rents, see Gregor Schwerhoff, Ottmar Edenhofer & Marc Fleurbaey, Taxation of Economic Rents, 34 J. Econ. Surveys 398 (2020) Bankman, Kane & Sykes, note 9, at 201. [↑](#footnote-ref-59)
59. 58As Fried points out, it's unclear whether they were justified in doing so, rather than insisting on a "more exacting accounting" of how much each person owes to each other person in their society. Barbara Fried, Proportionate Taxation as a Fair Division of the Social Surplus: The Strange Career of an Idea, 19 Econ. & Phil. 211, 226 (2003). [↑](#footnote-ref-60)
60. 59Though Gauthier does briefly discuss global distributive justice, he doesn't use rents to develop his conception of it. See Gauthier, note 56, at 281-87. [↑](#footnote-ref-61)
61. 60J.A. Mirrlees, An Exploration in the Theory of Optimum Income Taxation, 38 Rev. Econ. Stud. 175 (1971). [↑](#footnote-ref-62)
62. 61See, e.g., Devereux, note 12, at 592. [↑](#footnote-ref-63)
63. 62Harry Huizinga & Søren Bo Nielsen, Capital Income and Profit Taxation with Foreign Ownership of Firms, 42 J. Int'l Econ. 149, 156 (1997). [↑](#footnote-ref-64)
64. 63Id. (emphasis added). [↑](#footnote-ref-65)
65. 64See, e.g., Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (Henry Frowde ed., Oxford Univ. Press, reprt. 1908) (1776). [↑](#footnote-ref-66)
66. 65Paul Krugman, Increasing Returns and Economic Geography, 99 J. Pol. Econ. 483 (1991). [↑](#footnote-ref-67)
67. 66Paul Krugman, The New Economic Geography, Now Middle-Aged, 45 Reg'l Stud. 1, 2 (2011). [↑](#footnote-ref-68)
68. 67See id. at 4. [↑](#footnote-ref-69)
69. 68See id. at 4-5. [↑](#footnote-ref-70)
70. 69Devereux et al., note 16 see also Peter H. Egger et al., The Taxing Deed of Globalization, 109 Am. Econ. Rev. 353, 355 fig. 1 (2019) (providing tax rates for sixty-five countries from 1980 to 2007). [↑](#footnote-ref-71)
71. 70For a description of the "basic tax competition model," see George R. Zodrow & Peter Mieszkowski, Pigou, Tiebout, Property Taxation, and the Underprovision of Local Public Goods, 19 J. Urb. Econ. 356, 358-59 (1986) see also Assaf Razin & Efraim Sadka, International Tax Competition and Gains from Tax Harmonization, 37 Econ. Letters 69, 71-75 (1991) Roger H. Gordon, Taxation of Investment and Savings in a World Economy, 76 Am. Econ. Rev. 1086 (1986) see also Reuven S. Avi-Yonah, Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State, 113 Harv. L. Rev. 1573, 1612 (2000) (discussing the Mieszkowski/Zodrow model). [↑](#footnote-ref-72)
72. 71See, e.g., Avi-Yonah, note 70, at 1582. [↑](#footnote-ref-73)
73. 72The seminal paper is by Baldwin and Krugman. Richard E. Baldwin & Paul Krugman,Agglomeration, Integration and Tax Harmonisation, 48 Eur. Econ. Rev. 1 (2004), which was first circulated as a draft in 1999. Baldwin and Krugman summarize the results of the basic tax competition literature and say: "All these results turned on the impact of taxes on the mobile factor's spatial allocation, i.e., d*n*/d*t*. Since this is also the main topic of the new economic geography, and these models work with far richer underlying economies, it should be no surprise that a host of new insights emerges." Id. at 6. Note that some scholars after Baldwin and Krugman seem to read the positive taxation of LSR implication back into the standard tax competition model. For example, Sørensen (Peter Birch Sørensen, Can Capital Income Taxes Survive? And Should They?, 53 CESifo Econ. Stud. 172 (2007)), sets out the role of LSR within a tax competition framework and traces this back to Gordon, note 70, and to Razin & Sadka, note 70, but Sørensen is also clear that he is doing this by implication. Sørensen, at 177 n.7. LSR is nowhere mentioned in the treatment of tax competition by either Gordon or by Razin and Sadka. [↑](#footnote-ref-74)
74. 73Baldwin & Krugman, note 72, at 4. [↑](#footnote-ref-75)
75. 74McClure, note 8. [↑](#footnote-ref-76)
76. 75Id. at 148. [↑](#footnote-ref-77)
77. 76Id. [↑](#footnote-ref-78)
78. 77Id. at 149. [↑](#footnote-ref-79)
79. 78Id. at 148. [↑](#footnote-ref-80)
80. 79Green, note 8. [↑](#footnote-ref-81)
81. 80Id. at 30-31. In fact, Green actually uses the term "location-specific rent," the earliest use of the term we have been able to identify. [↑](#footnote-ref-82)
82. 81Id. [↑](#footnote-ref-83)
83. 82Id. at 30 ("Argnably [sic], the host country should be entitled to tax the multinational on these location-specific rents."). [↑](#footnote-ref-84)
84. 83Whenever we refer to "LSR[in'X']," we mean the LSR that is specific to jurisdiction *X*. [↑](#footnote-ref-85)
85. 84We follow Kit Fine's definition of essential properties. See Kit Fine, Essence and Modality: The Second Philosophical Perspectives Lecture, 8 Phil. Persp. 1, 5-6 (1994). For some contrasting views, see Saul A. Kripke, Naming and Necessity (1980) Ruth Barcan Marcus, Essentialism in Modal Logic, 1 Noûs 91 (1967). [↑](#footnote-ref-86)
86. 85See Bankman, Kane & Sykes, note 9. [↑](#footnote-ref-87)
87. 86See id. [↑](#footnote-ref-88)
88. 87This can be stated equivalently as: (*Average Revenue* -*Average Cost*) \* *n*. [↑](#footnote-ref-89)
89. 88By adopting this terminology, we do not mean to assume that the import jurisdiction and the export jurisdiction are not the same jurisdiction. One jurisdiction could have the most rent-generating attributes on both the supply side and the demand side. [↑](#footnote-ref-90)
90. 89Marginal cost in the second-best jurisdiction will be *higher* than in the first best jurisdiction. By convention we write the definition in the way that we have to produce the result that the LSR (Export) will be a *positive* quantity. [↑](#footnote-ref-91)
91. 90For further discussion, see Part IV.B. [↑](#footnote-ref-92)
92. 91 See, e.g., Alfred Marshall, Principles of Economics 347-49 (8th ed. 2013). [↑](#footnote-ref-93)
93. 92This sort of case is captured in the existing literature by the idea of so-called "location-specific advantages" that do not become LSRs. See, e.g., Claire (Xue) Peng, Location-Specific Advantages: Modified Application of the Arm's Length Principle in a Knowledge-Based Economy 29-32 (2021). For example (and ignoring fixed costs for simplicity), there might be a marginal cost advantage in one jurisdiction because of a cheap factor input (suggesting some LSR under part (2) of our definition), but that cost advantage might be passed fully on to customers via reduced prices in Import, leading to outcome where marginal revenue is not greater than marginal cost. We would denote this a case of quasi-rent. We believe this is a superior approach to labeling this case as one involving a location-specific advantage that does not turn into an actual rent. After all, countries may well have incentives to exploit the short-run non-distortionary aspects of taxation on quasi-rents, particularly because the benefit of the tax will accrue to the taxing jurisdiction whereas the cost of the tax on a base that is not true economic rent will be borne broadly. The location-specific advantage framework misses this nuance. [↑](#footnote-ref-94)
94. 99See Ned Hall, Two Concepts of Causation, in Causation and Counterfactuals 225 (John Collins et al. eds., 2004) [hereinafter Hall, Two Concepts of Causation]. It is well known that a condition can contribute to a result without making a difference. This occurs in cases of "redundant" causation, such as preemption and overdetermination. See, e.g., L.A. Paul & Ned Hall, Causation: A User's Guide 74-143 (2013) Michael S. Moore, Causation and Responsibility 412 (2009) Michael McDermott, Redundant Causation, 46 Brit. J. Phil. Sci. 523 (1995) Richard W. Wright, Causation in Tort Law, 73 Cal. L. Rev. 1735, 1775 (1985) David Lewis, Causation, 70 J. Phil. 556 (1973). We rely on a less familiar point: that the difference a condition makes is not its exclusive contribution. This point has been discussed by philosophers only recently. See Ned Hall, Causal Contribution, in Measuring the Global Burden of Disease: Philosophical Dimensions 204 (Nir Eyal et al. eds., 2020) [hereinafter Hall, Causal Contribution] Alex Kaiserman, `More of a Cause': Recent Work on Degrees of Causation and Responsibility, Phil. Compass, July 2018. [↑](#footnote-ref-95)
95. 94Mark-to-market taxation assesses tax items under a relatively straightforward counterfactual - that is, if the items were currently realized. [↑](#footnote-ref-96)
96. 95Avi-Yonah, Clausing & Durst, note 27, at 501, 504-05. [↑](#footnote-ref-97)
97. 96Id*.* There are other problems that can make the arm's length standard difficult to evaluate, such as synergies within a firm. [↑](#footnote-ref-98)
98. 97Cui & Hashimzade, note 39. [↑](#footnote-ref-99)
99. 98This complication is discussed further below in Part V.B.2 in the context of labor outsourcing. [↑](#footnote-ref-100)
100. 100Cf. Hall, Causal Contribution, note 99 (describing this heuristic for the difference made by a condition). Hall attributes the heuristic to Alex Prescott-Couch. [↑](#footnote-ref-101)
101. 101Id. [↑](#footnote-ref-102)
102. 102Id. [↑](#footnote-ref-103)
103. 103Id. [↑](#footnote-ref-104)
104. 104Assuming that the pool is never completely filled, that *Billy* and *Suzy* don't coordinate their efforts, and so on. [↑](#footnote-ref-105)
105. 105See Hall, Causal Contribution, note 99 Kaiserman, note 99, at 2. [↑](#footnote-ref-106)
106. 106*Alphaco*'s actual marginal cost of extracting the ***oil*** in *B* is $10/barrel. Since it could not increase its output by drilling anywhere else, its marginal cost at the next best jurisdiction is (effectively) infinite. Its true LSR, however, is capped at its FTER, which in this case is ($90 - $10) \* 1 billion = $80 billion. [↑](#footnote-ref-107)
107. 107See Cui, note 5 Cui & Hashimzade, note 39. The OECD's blueprint for Pillar One includes businesses that provide "automated digital services" - a category that would have covered many tech platforms - within the scope of Pillar One. See Pillar One Blueprint, note 3, at 19-20. Pillar One has been motivated, in part, by the perception that rents earned by multinational enterprises are not subject to tax in the appropriate jurisdictions. [↑](#footnote-ref-108)
108. 108"Consumer-facing businesses" are the other category of businesses included within the scope of the OECD's blueprint for Pillar One. See Pillar One Blueprint, note 3, at 20-21. [↑](#footnote-ref-109)
109. 109This is a widely shared judgment about cases of redundant causation. For example, if an assassin shoots a victim, killing the victim, the assassin contributes to the victim's death, even if a second assassin would have killed the victim had the first assassin not pulled the trigger. See Christopher Hitchcock & Joshua Knobe, Cause and Norm, 106 J. Phil. 587, 588 (2009) (describing this example) note 99 (collecting sources that agree that redundant conditions contribute) see also Victor Tadros, Causal Contributions and Liability, 128 Ethics 402, 411 (2018) (denying that a condition's replaceability affects its degree of contribution). [↑](#footnote-ref-110)
110. 110One might think that this problem can be solved by doing two series of counterfactual analyses. First, hold the firm fixed and measure the difference between the firm's actual revenues and costs and its hypothetical revenues and costs at the second-best location. This analysis yields LSR, the portion of the firm's return on investment that could not be earned elsewhere. Second, hold the actual location of the firm's operations fixed and measure the difference between that firm's revenues and costs and the hypothetical revenues and costs of its next-best competitor. This analysis yields firm-specific rent (FSR). *LSR - FSR* is the portion of the return that is attributable to the location, while *FSR - LSR* is the portion of the return that is attributable to the firm.There are two main problems with this proposal. The first is practical. As difficulties enforcing the arm's length standard in controversies over transfer pricing suggest, it is challenging to select truly comparable firms. The second problem is one of principle. For reasons we have identified above, this method of measuring contributions underrates those made by locations or firms that are replaceable. [↑](#footnote-ref-111)
111. 111Devereux, note 12, at 593 see also Joseph E. Stiglitz, The Origins of Inequality, and Policies to Contain It, 68 Nat'l Tax J. 425, 432-34 (2015) (arguing that rents explain a significant portion of the increase in inequality within the United States between 1980 and 2015). [↑](#footnote-ref-112)
112. 112Devereux, note 12, at 593. [↑](#footnote-ref-113)
113. 113See Kane, note 39. [↑](#footnote-ref-114)
114. 114Id*.* [↑](#footnote-ref-115)
115. 115This can't be instantaneous, of course, or nobody would outsource. Prices will still be set by the marginal seller, and it will take time for outsourcing to run its course. [↑](#footnote-ref-116)
116. 93It is worth reflecting on the source of the $1.50 divergence between LSR and FTER. This divergence reflects the two points we made in the text above regarding the generation of quasi-rent. First, a portion of this $1.50 divergence can be traced to the treatment of fixed costs. Observe that on the numbers in Table 2, the effect of fixed costs is to *add* 25 cents to LSR (Import) and to *add* 25 cents to LSR (Export). But when we come to consider FTER, fixed costs are appropriately treated as reducing rent. Thus, we *subtract* 50 cents from FTER (First Best). This accounts for $1 of the $1.50 divergence. Second, the remaining divergence can be traced to the way in which counterfactual analysis of marginal revenues and cost can indicate rents that are greater than total true rent and should thus be understood as quasi-rent. Here, we have only $3 ($8-$5) of FTER arising from differentials between marginal cost and marginal revenue. But under a counterfactual analysis we identify $1 of LSR (Import) and $2.50 of LSR (Export) tied to marginal costs and revenues. The excess of $3.50 over $3 explains the remaining divergence between LSR and FTER. [↑](#footnote-ref-117)