

# The use of neutralities in international tax policy

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# The Use of Neutralities in International Tax Policy

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## **Abstract**

This paper analyzes the use of neutrality conditions, such as capital export neutrality, capital import neutrality, capital ownership neutrality, and market neutrality, in international tax policy. Neutralities are not appropriate tools for designing tax policy. They each identify a possible margin where taxation may distort business activities. Because these neutralities cannot be all satisfied simultaneously, however, they do not allow analysts to determine the appropriate trade-offs of these distortions, unlike deadweight loss measures used in other areas of tax policy. International tax policy should instead be tied directly to the reasons for taxing capital income, reasons which are derived from optimal tax or similar models.

**Keywords:** International taxation, capital export neutrality, capital import neutrality, ownership neutrality, optimal taxation

Since Richman (1963), a standard way to analyze international tax policy is by reference to whether the tax system meets a specified neutrality condition. Richman argued that tax systems should be capital export and/or capital import neutral. Feldstein and Hartman (1979) argued from a single

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nation's perspective, the tax system should strive national neutrality. Desai and Hines (2003, 2004) and Hines (2008) proposed capital ownership neutrality as yet another alternative. Devereux (2008) has argued for market neutrality.

In the domestic tax context, neutrality plays a limited role. It is most often invoked in the context of tax rates on different types of capital income. For example, the tax system is not neutral as to housing and intellectual property compared to machines. Although studies making these sorts of claims may be motivated by non-neutral taxation, they ultimately use deadweight loss measures, as their tool for determining the effects of unequal taxation and how to design tax systems (e.g., Auerbach (1989), Fullerton and Lyon (1988)).

I wish to explore here what accounts for the use of neutralities in the international tax context and whether this approach is desirable.<sup>1</sup> I consider three possible accounts of the use of international tax neutralities. The first is that one or more of these neutralities is actually the correct way to think about international tax policy. The second is that one or more of these neutralities, while not fully correct, acts as a reasonable rule of thumb for policy making. The third is that language in papers purporting to use neutralities is loose talk, and that the best studies of international taxation do not actually use neutralities.

I reject the first two accounts, that neutralities are the correct way to approach international taxation or are a reasonable rule of thumb. The last account, that much modern scholarship on international tax systems has effectively abandoned the use of neutralities, is, I believe, reasonably close to correct, although performing a head count is not straightforward.

Scholarship on international tax systems, however, still does not resemble scholarship on domestic tax systems. Because international taxation is largely about the taxation of capital income, scholarship on international taxation often takes the taxation of capital income as given. Moreover, it usually takes firm-level taxation as given. I will suggest here that there are profitable opportunities to make the study of international taxation to look more like the study of domestic taxation, basing the design of the system for taxing capital income in the international context on the principles for why

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<sup>1</sup> The arguments made here are in addition to and complimentary the criticisms of capital export and import neutrality made by Graetz (2000) and Grubert and Altshuler (2008)).

we might want to tax capital income in the first place. As emphasized by Graetz (2000), the best way to make international tax policy is by setting forth the social goal and determining the best set of trade-offs for achieving it given the tools and information available.

## 1 International Taxation and Neutralities

The use of neutralities to evaluate international tax policy is attributed to Richman (1963). She focuses on two types of neutralities: capital export neutrality and capital import neutrality.

Capital export neutrality (CEN) requires residents of any given nation to face the same tax burden no matter where they choose to invest. That way, investors choose the location of their investments based on where they can get the highest pre-tax return. For example, a British investor considering investments in France, the US, China, or at home, should choose the location that brings the highest pre-tax returns. Imposing the same tax rate regardless of location helps ensure this condition is met. Capital export neutrality is thought to support either a purely residence-based system or worldwide source-based taxation with an unlimited foreign tax credit.

Capital export neutrality tries to identify conditions under which investment is allocated efficiently. Capital import neutrality (CIN), by contrast, is about savings. It requires that all investments in a given country pay the same marginal rate of tax regardless of the residence of the investor. This means that all business activity within a country is subject to the same overall level of taxation. If capital import neutrality holds, all savers receive the same after-tax return, regardless of their residence, which means that the allocation of savings is efficient. CIN is thought to support taxation by the source country with the residence country exempting foreign source income.

Feldstein and Hartman (1979) are associated with a norm sometimes called national neutrality (NN). The claim is that from a national perspective, it is optimal to tax foreign source income but allow a deduction for foreign taxes the same way we allow a deduction for other costs. A tax system with this feature will make investors indifferent between the pre-tax return on domestic investments and the return on foreign investments after paying foreign taxes. The key difference between CEN and NN is the treatment of foreign taxes: CEN treats a foreign government receiving taxes the same as the home country government while NN counts only tax payments

to the home country as improving welfare.

Desai and Hines (2003, 2004) introduced an alternative neutrality, capital ownership neutrality (CON). Capital ownership neutrality demands that taxation not influence who owns assets. The theory is based on a finding that ownership of assets affects their productivity. To maximize productivity, taxation should not distort the ownership patterns that would arise absent taxation. A variety of tax systems meet this requirement, including systems that exempt foreign income from taxation.

Devereux's market neutrality (MN) is a generalization of this concept. Devereux (2008). It requires that if two firms compete with each other in the same market, they should face the same overall effective tax rates on their investments. For example, if an American firm and a British firm compete with each other in Canada, the two firms should face the same effective tax rate so that taxation does not distort the competition.

A central feature of international tax policy is that the policy choice is framed as picking one of the competing neutralities. As is well known, unless tax rates and the tax base are the same in all countries, it is impossible to achieve both capital export and capital import neutrality at the same time. Because they are incompatible, tax policy is sometimes thought to involve choosing among them. For example, Griffith, Hines, and Sørensen (2008), in a review of the international tax policy literature state that when "tax rates are not harmonized so that *a choice between the two forms of neutrality has to be made*, it has usually been argued that from a global perspective, CEN should take precedence of CIN . . ." (emphasis added) Graetz (2000, p. 272) reports, "many economists regard *the choice between CEN and CIN* as essentially empirical, turning on the relative elasticities of savings and investment. Since investment is thought to be more responsive to changes in levels of taxation, a policy of CEN predominates." (emphasis added) Desai and Hines (2003) argue CON should be used instead of CEN.

This sort of reasoning – international tax policy as a choice among neutralities – is widely used in international tax discussions. Studies by government agencies such as the US Treasury, the Joint Committee on Taxation, regularly rely on capital export neutrality. (E.g., Joint Committee on Taxation (1999) and Treasury (2000)). The legal literature on international tax policy routinely uses these norms.<sup>2</sup> Even academic studies that reject CEN use it as

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<sup>2</sup> Graetz (2000) has a large number of citations to both government studies, economics literature, and legal literature which rely on one or more international tax neutralities.

a starting point for discussion (e.g., Devereux, Fuest, and Lockwood (2013)).

The puzzle that motivates this paper is that this approach – a digital choice of efficiency goals – is not how domestic tax issues are approached. In the domestic context, tax theory usually proceeds by explicitly stating a normative goal, usually an aggregation the utility of a set of individuals, and by making assumptions about the information available to the government. For example, approaches based on Mirrlees (1971) maximize a function of individual utility, specifying the distribution of relevant attributes among individuals and the information available to the government. The design of a tax on capital income, if desirable, is derived from this setup (such as recent work like, Piketty and Saez (2013) and Golosov, Troshkin, Tsyvinski, and Weinzierl (2013)).

Many studies analyzing the effects of existing law focus on the different rates that apply to different types of investment. For example, it is routine to note that investments in housing are largely exempt from tax, that the immediate deduction for the creation of intellectual property effectively exempts such investments from tax, and that different rates of depreciation for different types of assets can generate distortions. The idea that a tax on capital income should be neutral across different types of capital income lies behind these claims. Nevertheless, when thinking about tax system design, the key measure is the deadweight loss from differential capital income taxation. The question is why international tax policy often proceeds differently and whether it should continue to do so.

## **2 Possible reasons for the use of neutralities in international taxation**

I consider three hypotheses for the use of neutralities in the international tax policy context.

### **2.1 Are one or more neutralities correct?**

The first possibility is that one of the proposed neutralities is the correct way to think about the issue, so that international tax policy should involve picking the right one. CEN or CIN or CON or NN or MN, for example, might maximize national or global welfare (or both). This possibility, however, is unlikely.

Each of the proposed neutralities, taken on its own has been subject to significant criticisms in large part because the models used to support them contain strong simplifying assumptions which, while useful for clarifying thinking and for modeling purposes, do not generally hold generally. For example, CEN has been criticized by Keen and Wildasin (2004) as not holding unless governmental budgets are linked through a system of international transfers. Keen and Piekola (1997) argue that if governments cannot tax away all profits, the optimal tax system will not be consistent with CEN or CIN; it will be a compromise between CEN and CIN. Horst (1980) argues that if the supply as well as the demand for capital varies with the rate of return, neither CEN nor CIN is optimal. Desai and Hines (2003, p. 493) criticize CEN as assuming that foreign firms do not respond to changes induced by home-country taxation. Graetz (2000, p. 287) criticizes CEN, among other reasons, as failing to consider the reasons for foreign direct investment, such as economies of scale or scope that allows successful businesses to exploit opportunities worldwide rather than just domestically. Grubert and Altshuler (2013) note that CEN and CIN rely on special assumptions and also do not provide guidance on many important international tax issues such as the taxation of royalties.

Capital ownership neutrality is newer and therefore, has been less well criticized but it is not consistent with more complete models of international investment. For example, Becker and Fuest (2010) and Devereux, Fuest, and Lockwood (2013) find that CON only holds under specialized assumptions about management capacity to expand when a firm acquires another firm. Desai and Hines (2003, p. 495) themselves agree that CON may not hold when the location of plant, equipment, and other productive factors is mobile between countries in response to tax rate differences. As they note, if factors of production are mobile, and respond to tax rate differentials, “tax systems then determine the location of production as well as patterns of ownership and control, so the net effect of taxation on global welfare depends on the sum of these effects.”

It is not my goal to engage in a detailed examination of the particulars of each proposed neutrality, however. The more central problem is that even if we take it as a given that each identifies an important set of trade-offs, we should not think of tax policy involving a choice of which neutrality works best. Each type of neutrality identifies a particular type of inefficiency from international capital taxation. Unless we are in a setting where all but one type of inefficiency is absent, tax policy should try to find the mix of

inefficiencies that is least costly.

To perform this sort of analysis, however, we need dead weight loss measures not neutralities. Neutralities are not like deadweight loss. Small taxes create small deadweight losses and as taxes increase, deadweight losses increase. Knowing this allows us to consider the design of the tax system, trading off deadweight loss for other goals. Neutralities lack this basic feature. They tell us that there might be deadweight loss but do not tell us how much there is.

For example, Desai and Hines (2003) emphasize that ownership is important to the productivity of assets and conclude that we should pursue ownership neutrality rather than export neutrality. They treat the neutralities as either/or propositions. If they instead approached the using a deadweight loss measure, they would likely argued that if we cannot avoid distortions in both ownership and the location of investments, we should design the tax system so that the marginal efficiency loss on each of these margins is equal. While they recognize this trade-off,<sup>3</sup> they frame their approach as a choice of one or the other type of neutrality.

Another reason why neutralities are not an appropriate way to think about international taxation is that there is no necessary connection between the various neutralities and the reasons for taxation. Optimal tax theory considers the design of the tax system by direct reference to the social maximand, the distribution of ability or related attributes in the population, and the underlying information constraints facing the government. If the reasons for taxation differ, the preferred design of the tax system responds. Neutralities do not respond this way. They are flat out commands that bear only an indirect connection to the reasons for taxation.

In particular, most international tax policy involves the taxation of capital income, most often at the firm level. To design the taxation of cross-border capital flows we need to know the reason why we are taxing capital income in the first place and why we are doing so at the firm level. If, for example, optimal tax considerations show that we should not be taxing capital income (or that we should exempt the normal return to capital), the design of the international tax system is straightforward and does not require the use of

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<sup>3</sup> At one point, they recognize these trade-offs when they consider the possibility that taxation affects both the location of production and who owns what. (Desai and Hines, 2003, p. 495) They argue in this case that one must trade off the efficiency losses based on empirical estimates of the losses. This is exactly the sorts of trade-offs that the use of neutralities tends to mask.



neutralities.

If on the other hand, there are reasons for taxing capital income, we need to specify what those are and design the taxation of international capital flows to match those reasons. I will suggest some directions that this approach may take in part 3. To peak ahead, suppose that a reason for taxing capital income is that it is a complement to leisure. Different types of capital income, including income located in different jurisdiction or invested through different types of investment vehicles might be differentially complementary to leisure. Neutralities of various sorts would not be desired, or if they are desirable they would arise out of an empirical claim about complementarity to leisure, not out of a priori reasoning.

Similarly, if we tax the return to savings because savings are an indicator of ability (as suggested in Saez (2002)), different forms of savings might indicate different levels of ability. Perhaps domestic savings indicates mid-level ability, savings in developed foreign nations indicates high ability, and managing to diversify savings to developing nations indicates very high ability. The optimal tax would follow. Or if this entirely made up empirical conjecture is false and all savings are equal indicators of ability, the optimal tax might meet a neutrality condition.

The basic point is that we cannot know what the optimal pattern of international capital income taxation should be without understanding the reasons for taxing capital income in the first place. Using neutralities does not allow us to make these determinations.

Similarly, much international tax policy considers firm-level taxation. To understand the design of firm-level taxation, however, we need to know why we are taxing firms. Firm-level taxation, for example, does not permit differentiation of tax rates by investor. Tax systems that require differentiation will either not use firm-level taxation or will use it as a preliminary withholding system rather than an end in and of itself. How one views the role of firm-level taxation will in part determine the taxation of cross-border cash flows by firms.

It is hard to prove a negative, so the arguments above are not a proof that a neutrality approach cannot, under some circumstances, provide the correct guidance for designing an international tax system. Nevertheless, given the basic problems with any such approach, it seems unlikely.

## 2.2 Neutralities as rules of thumb

One possible defense of using neutralities is that international tax policy is so hard and takes place under such severe constraints that we need simple rules of thumb to guide policymaking. Perhaps one of the neutralities is close enough to optimal to provide reasonable guidance in a complex policy-making environment. In addition, a simple rule might provide a focal point for coordination by multiple nations.

Consider the setting for international tax policy. The basic domestic tax system is most often taken as fixed. It is usually assumed to tax capital income (including the normal return to capital) at the same nominal rate as labor income, using the realization system and some sort of firm-level tax (but with different sources of firm financing taxed different ways). International tax policy is asked what sort of taxation of cross-border flows maximizes welfare conditional on these assumptions. While first principles approaches may be useful, real world guidance, one may argue, requires relatively simple rules that build off of the existing tax system.

While work taking this approach is no doubt useful – there is nothing wrong with a model that is conditional on assumptions about policy choices – it should not be the only or primary approach to the problem given how restrictive the assumptions are. Suppose that most academic work instead approached international taxation from a less restrictive set of assumptions and found that there were substantial welfare gains from different types of tax systems. For example suppose that the assumption of taxing the normal return to capital were relaxed and studies found large welfare gains. To the extent that this work informs policy making, we would be better off than if work took the existing framework as fixed. For example, Devereux, Fuest, and Lockwood (2013) compare optimal tax systems where the international tax system must tax the normal returns to capital and where it does not. They find that the tax systems the assumption that normal returns must be taxed prevents the tax system from reaching the first best optimum in the allocation of capital. As will be discussed in detail below, Auerbach, Devereux, and Simpson (2008) and Griffith, Hines, and Sørensen (2008) come to similar conclusions, although for different reasons. If conclusions like this hold up, restricting international tax policy discussions to rules of thumb built on the existing tax system may lead to substantial welfare losses.

## 2.3 Loose Language

The final possibility is that neutralities are not really used in the best studies of international tax policy. Even if neutralities are mentioned, the discussion is just a ritual incantation before the real work begins. If one examines recent work closely, much of it starts from a model of the problem to be examined and derives a tax system that optimizes a specified welfare function. Neutralities are largely extraneous to this work.

As mentioned above, Horst (1980) and Keen and Piekkola (1997) might be taken as early examples. Both papers find that neither CEN nor CIN is optimal by using a model of international investment. Becker and Fuest (2010) is a more recent example examining CON showing that it only holds under limited conditions. Studies of the effects of tax reform proposals, while sometimes making reference to neutralities, often try to directly measure the effects (e.g., (Grubert and Altshuler, 2013)).

The most recent comprehensive review of international tax policy is the relevant chapters in the Mirrlees Review, (Auerbach, Devereux, and Simpson, 2008) (ADS), and (Griffith, Hines, and Sørensen, 2008) (GHS). It is worth examining the approach taken in these chapters in a bit more detail because neither relies on neutralities.

ADS provides a good example of the sort of reasoning about international taxation that can be done without resorting to neutralities. They start by considering why we might want business level taxes. They list three reasons (ADS p. 876): (1) it may be less expensive to have corporations remit taxes than individuals; (2) the base of the tax may be best measured at the corporate level, such as if the base is rents earned by businesses; and (3) a corporate level tax may be able to tax foreign investors in domestic businesses while a pure residence-based tax on individuals cannot. As they note, however, the role of corporate taxes depends on the characteristics of the optimal tax system, so they turn to these issues, starting with a closed economy and then turning to an open economy.

In a closed economy, if the optimal base is consumption, we may still want to tax rents and old capital. As a result, ADS say that we may want a business level tax, but of the consumption sort (although the argument here is not clear – an individual level consumption tax would also or could also tax rents and old capital). If the optimal base is capital income, it is easier to see the role of a business level tax, although the distortions associated with such a tax need to be taken into account.

These considerations may change considerably in an open economy. The core claim made by ADS is that even if it is optimal to tax the capital income, we likely do not want to do so through source-based taxation. They note that in a small open economy,

[a source-based] tax simply raises the pre-tax required rate of return and reduces the stock of capital, shifting none of the burden to foreigners but resulting in more deadweight loss than a tax on domestic factors that bear the tax.

ADS p. 868. That is, because the after-tax rate of return is determined internationally, a domestic source-based tax will reduce domestic investment until the required pre-tax rate of return is sufficient to compensate international investors. Investors, therefore, are indifferent to the tax. The incidence of the tax is instead on immobile domestic factors such as labor. A direct tax on labor would be more efficient as it would not distort investment choices.

ADS conclude, therefore, that if we want a tax on income, we should want to do so via a tax on residence. In their view, a residence-based income tax would include returns on outbound investment, treating foreign taxes as an expense. (p. 869) The residence of individuals is relatively well-defined, and most individuals are largely immobile, creating administrative advantages. Because a residence-based tax would not depend on where capital or profit is located, the location of capital and profit would not be distorted. Moreover, the incidence would be on investors; the tax would not likely be shifted to immobile factors such as labor. At the business level, they recommend a version of a destination-based consumption tax.

GHS discuss neutralities extensively but their arguments effectively ignore these considerations in favor of concerns similar to those in ADS. Citing Gordon (1986), they state:

One of the best-known results in the literature on optimal tax setting behavior states that in the absence of location-specific returns, a government in a small open economy should not levy any source-based taxes on capital. . . . the burden of a source-based capital tax will be fully shifted onto workers and other immobile domestic factors via an outflow of capital which drives up the pre-tax return.

The incentive for countries to avoid source-based taxes is, according to GHS, offset by four factors. First, we may want source-based taxes to capture

location-specific rents. Second, if capital is less than perfectly mobile, some source-based taxation may be desirable. Third, business-level taxes may be needed to backstop residence-based labor income taxes, possibly making the distortions from source-based taxes worth their cost. Finally, they note that people may simply be confused about the effects of source-based taxes and, therefore, impose them by mistake.

After considering a number of smaller reforms for the UK, GHS propose a version of a business-level consumption tax known as ACE (effectively an income tax with a full allowance for the cost of capital). They base their arguments explicitly on Gordon (1986). They state that “the theoretical case for an ACE in an open economy context follows from the analysis that . . . in a small open economy with near-perfect capital mobility, the burden of a source-based tax on the normal return to capital will tend to be [more than] fully shifted onto the less mobile factors of production such as labour and land.” (p. 974)

When examining the body of literature on international taxation, therefore, it is apparent that there is a sizable portion which does not rely on neutralities and instead directly examines the effects of various tax rules or tries to develop rules based on their intended purpose and effects. It is possible that the use of neutralities is simply a ritual and that the real analysis lies elsewhere.

### 3 Optimal International Taxation

While the papers discussed immediately above do not rely on neutralities, they do not try to base the design of international tax systems on first principles. They do not ask why we are taxing capital income in the first place (or whether we should) and consider how those reasons might inform the design of the international component of the capital income tax. My task for this section will be to examine where an approach like this might lead. To keep the analysis simple, I will assume that the social welfare function is set to maximize national welfare without considering whether coordination of tax policy in a repeated game setting might point to alternative approaches.

### **3.1 THE OPTIMAL BASE IS CONSUMPTION**

The easiest case to consider is if the optimal tax base is consumption. There are well known reasons based on Atkinson and Stiglitz (1976), the considerations in Judd (1985) and Chamley (1986), and the administrative costs savings highlighted by Andrews (1974) for preferring consumption taxation.

Consumption taxes are relatively well understood in the open economy context (e.g, Grubert and Newlon (1997); Bradford (2004)). Standard results include the conclusion that under relatively strict assumptions, origin and destination-based taxes are the same. If we relax the assumptions, origin and destination-based taxes may differ with respect to (1) rents; (2) transition/tax rate changes; (3) tourism, and (4) administrative costs. Finally, consumption taxes in the open economy context are somewhat less efficient than in the closed economy context because they can affect discrete location choices, which depend on average not marginal rates. If discrete location choices are a concern, a small open economy may not want to impose source-based taxes at all except to the extent justified by location-specific rents.

Most of the issues analysts attempt to address using neutralities are not present in a consumption tax context. For example, consumption taxes are thought not to affect savings rates, location choices, and ownership choices. Therefore, discussions of international issues in a consumption tax setting do not generally use neutralities.

### **3.2 THE OPTIMAL BASE INCLUDES A TAX ON THE NORMAL RETURN TO CAPITAL**

The analysis is considerably more complicated if the optimal base includes a tax on capital income. To determine the optimal tax structure, we need to know why the base includes capital income as different rationales, I will suggest, may have different design implications. There are a number of reasons why we might want to tax capital income. Sorensen (2007), Banks and Diamond (2008), and Diamond and Saez (2011) provide surveys. I will consider several of the reasons for capital income taxation listed in those sources and illustrate the potential implications for international taxation.

### SAVINGS AS A SIGNAL OF ABILITY

Saez (2002) argues that we should tax the return to savings because, between two individuals with the same labor income, the person with more savings likely has a higher ability. We might think of savings as providing the government with information about ability. The argument is different from the NDPF argument in that a higher tax on savings is not to relax the incentive constraints for purposes of the labor income tax. Instead, the tax is simply to impose a higher burden on those with high utility for a given amount of labor effort.

The difficulty with using this argument for designing international tax systems is that Saez only shows that a marginal (i.e., non-zero but infinitely small) tax on capital is desirable (under his assumption that savings indicates ability, all else equal). The argument does not, at least yet, support any significant positive tax. To the extent that it can be read to support a significant (i.e., bounded away from zero) tax, the incidence issues raised by Gordon (1986) create problems with implementing it through a source-based tax. The goal is for the higher ability person to bear a higher burden and if globalized capital markets prevent this from happening, the goal will be defeated. The only way to implement Saez's tax is through a residence-based tax. That is, the difference between Saez's proposal and the NDPF proposals is that Saez's proposal is directly distributive while the NDPF proposals are Pigouvian.<sup>4</sup> This may make all the difference in tax system design when capital markets are global.

### NEW DYNAMIC PUBLIC FINANCE ARGUMENTS

The core argument for a capital income tax made in the new dynamic public finance literature is that savings creates a fiscal externality. People who save are able to work less in the future, living off of their savings. As a result, the incentive constraints on the labor income tax are tighter, reducing our ability to redistribute. A tax on savings can, in these models, be thought of as a Pigouvian tax on the fiscal externality created by excess savings. (As an aside, I would venture that arguments that rely on current savings in the United States being too high are unlikely to gain traction.)

A key question for these arguments is the extent to which the capital

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<sup>4</sup> They are, of course, indirectly distributive because they relax the incentive constraints on the labor income tax.

income tax needs to be personalized. In the most sophisticated models, the tax is highly dependent on the history of each individual's earnings and savings. Implementing these systems would require a residence-based tax, and one with a high level of information about behavior. The disagreements between ADS and GHS on the feasibility of such a tax would come into play, although ADS and GHS were considering the feasibility of a conventional tax on capital income, not the more complex NDPF taxes. It is not clear whether GHS, who believe residence-based taxes are feasible, would believe that the sorts of taxes envisioned by the NDPF literature are feasible in a setting with mobile capital.

Some versions of the NDPF arguments recommend a flat rate tax on capital income. A conventional residence-based tax may in this case be desirable and the arguments about its feasibility would apply. A more difficult question is whether a source-based tax can work. I think in this case that the incidence arguments in Gordon (1986) and relied up by GHS do not matter. The tax on capital is like a Pigouvian tax in that it is a tax on an externality-causing activity. Incidence doesn't matter; fully pricing the effects of a given behavior is what counts. The problem is that a source-based tax would not eliminate the externality to the extent that individuals invest abroad (and those nations do not have a tax on capital income or do not have one at the desired rate).<sup>5</sup>

### **COMPLEMENTARITY BETWEEN LEISURE AND FUTURE CONSUMPTION**

An important result from optimal taxation is that it may be desirable to tax complements to leisure more highly than other goods. The argument is that a labor income or consumption tax shifts the relative price of leisure compared to other goods, distorting work effort. Although we may not be able to tax leisure directly, we can impose a higher tax rate on complements to leisure (and a lower tax rate on substitutes for leisure). The argument is Pigouvian in that taxing complements to leisure relaxes the incentive constraint. Similar to the NDPF arguments, therefore, we may not care that the incidence of the tax is shifted to labor.

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<sup>5</sup> The NDPF argument provides no reason for taxing inbound investment as a source-based tax nominally does, but to the extent foreigners actually bear the tax, this is not a problem as I am assuming that foreigners are not part of the social welfare function.



### **CAPITAL-SKILL COMPLEMENTARITY AND ENDOGENOUS FACTOR PRICES**

Suppose that skilled labor is more complementary to capital accumulation than is unskilled labor. Capital accumulation will then tend to raise the relative wages of skilled workers. This makes it more attractive for a skilled worker to mimic an unskilled worker, tightening the incentive constraints on the labor income tax. The government may therefore want to reduce savings and capital accumulation through a positive capital income tax.

This argument seems to imply we want source-based taxation. We want to reduce domestic investment. In a sense, the argument embraces the result in Gordon (1986). On the other hand, the reason for reducing capital accumulation is so that the labor income tax can better redistribute. To the extent a source-based income tax falls on unskilled labor, it may hurt that goal. It is difficult to speculate on the net effect. The argument would not seem to support residence-based taxation as residence-based taxation may not reduce domestic investment.

## **4 Conclusion**

A way to frame the core question I have raised is whether or the extent to which it is desirable to incorporate optimal tax considerations into the design of international tax systems in place of more standard assumptions. Although doing so is a formidable task, I don't see any other way to proceed. In particular, if we are to have a tax on capital income, we need to understand why we want such a tax because different reasons will support different types of tax systems. Globalization of capital markets and the resulting incidence issues affect some reasons and not others. Some reasons require residence-based taxes because the rates must be personalized while others support flat rates. Neutralities, the standard tool of international tax policy, are not helpful. They are not clearly related to the underlying reasons for taxing capital. They do not permit of compromise – a decision to tax capital income means that we know we are distorting investment choices so the question is how best to do that given the relevant goals and administrative concerns.

## References

- ANDREWS, W. D. (1974): "A Consumption-Type or Cash Flow Personal Income Tax," *Harvard Law Review*, 87(6), 1113.
- ATKINSON, A. B., AND J. E. STIGLITZ (1976): "The design of tax structure: Direct versus indirect taxation," *Journal of Public Economics*, 6(1-2), 55–75.
- AUERBACH, A. J. (1989): "The deadweight loss from 'non-neutral' capital income taxation," *Journal of Public Economics*, 40(1), 1–36.
- AUERBACH, A. J., M. P. DEVEREUX, AND H. SIMPSON (2008): "Taxing Corporate Income," in *Mirrlees Review, Reforming the Tax System for the 21st Century*.
- BANKS, J., AND P. A. DIAMOND (2008): "The base for direct taxation," in *Mirrlees Review, Reforming the Tax System for the 21st Century*, pp. 548–674.
- BECKER, J., AND C. FUEST (2010): "Taxing Foreign Profits with International Mergers and Acquisitions," *International Economic Review*, 51(1), 171–186.
- BRADFORD, D. (2004): *The X Tax in the World Economy*. AEI Press, Washington DC.
- CHAMLEY, C. (1986): "Optimal taxation of capital income in general equilibrium with infinite lives," *Econometrica: Journal of the Econometric Society*, pp. 607–622.
- DESAI, M. A., AND J. HINES (2003): "Evaluating International Tax Reform," *National Tax Journal*, 56(3), 487–502.
- DESAI, M. A., AND J. R. H. HINES (2004): "Old rules and new realities: Corporate tax policy in a global setting," *National Tax Journal*, pp. 937–960.
- DEVEREUX, M. P. (2008): "Taxation of outbound direct investment: economic principles and tax policy considerations," *Oxford Review of Economic Policy*, 24(4), 698–719.

- DEVEREUX, M. P., C. FUEST, AND B. LOCKWOOD (2013): “The Taxation of Foreign Profits: a Unified View!,” .
- DIAMOND, P., AND E. SAEZ (2011): “The Case for a Progressive Tax: From Basic Research to Policy Recommendations,” *The Journal of Economic Perspectives*, 25(4), 165–190.
- FELDSTEIN, M., AND D. HARTMAN (1979): “The Optimal Taxation of Foreign Source Investment Income,” *The Quarterly Journal of Economics*, 93(4), 613–629.
- FULLERTON, D., AND A. B. LYON (1988): “Tax neutrality and intangible capital,” in *Tax Policy and the Economy: Volume 2*, pp. 63–88. MIT Press.
- GOLOSOV, M., M. TROSHKIN, A. TSYVINSKI, AND M. WEINZIERL (2013): “Preference heterogeneity and optimal capital income taxation,” *Journal of Public Economics*, 97, 160–175.
- GORDON, R. H. (1986): “Taxation of Investment and Savings in a World Economy,” *The American Economic Review*, 76(5), 1086–1102.
- GRAETZ, M. J. (2000): “Taxing International Income: Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies, The,” *Tax Law Review*, 54, 261.
- GRIFFITH, R., J. HINES, AND P. B. SØRENSEN (2008): “International capital taxation,” in *Mirrlees Review, Reforming the Tax System for the 21st Century*.
- GRUBERT, H., AND R. ALTSHULER (2008): “Corporate Taxes in the World Economy: Reforming the Taxation of Cross-Border Income,” in *Fundamental Tax Reform: Issues, Choices, and Implications*, ed. by J. Diamond, and G. Zodrow. MIT Press, Cambridge MA.
- (2013): “Fixing the system: an analysis of alternative proposals for the reform of international tax,” *Available at SSRN 2245128*.
- GRUBERT, H., AND T. S. NEWLON (1997): *Taxing Consumption in a Global Economy*. AEI Press, Washington DC.
- HINES, J. R. J. (2008): “Reconsidering the Taxation of Foreign Income,” *Tax Law Review*, 62, 269.

- HORST, T. (1980): “NOTES: A Note on the Optimal Taxation of International Investment Income,” *The Quarterly Journal of Economics*, 94(4), 793–798.
- JOINT COMMITTEE ON TAXATION, U. S. C. (1999): “Overview of Present-Law Rules and Economic Issues in International Taxation,” Discussion paper.
- JUDD, K. L. (1985): “Redistributive taxation in a simple perfect foresight model,” *Journal of public Economics*, 28(1), 59–83.
- KEEN, M., AND H. PIEKKOLA (1997): “Simple rules for the optimal taxation of international capital income,” *The Scandinavian Journal of Economics*, 99(3), 447–461.
- KEEN, M., AND D. WILDASIN (2004): “Pareto-Efficient International Taxation,” *The American Economic Review*, 94(1), 259–275.
- MIRRELES, J. A. (1971): “An exploration in the theory of optimum income taxation,” *The review of economic studies*, pp. 175–208.
- PIKETTY, T., AND E. SAEZ (2013): “A theory of optimal inheritance taxation,” *Econometrica*, 81(5), 1851–1886.
- RICHMAN, P. (1963): *Taxation of Foreign Investment Income, An Economic Analysis*. Johns Hopkins Press, Baltimore, MD.
- SAEZ, E. (2002): “The desirability of commodity taxation under non-linear income taxation and heterogeneous tastes,” *Journal of Public Economics*, 83(2), 217–230.
- SORENSEN, P. B. (2007): “Can Capital Income Taxes Survive? And Should They?,” *CESifo Economic Studies*, 53(2), 172–228.
- TREASURY, D. O. (2000): “The Deferral of Income Earned Through U.S. Controlled Foreign Corporations,” Discussion paper, Department of the Treasury.

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