

Taxing Foreign Profit: Economic Principles and Feasibility

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Executive Summary

This paper aims to review and extend the existing academic literature on the optimal structure of taxes on international corporate profit. It also aims to review recent proposals made by the UK government to reform the way it taxes dividends received by UK companies from foreign affiliates. These two aims are connected. The paper questions whether the UK proposals are consistent with the optimal tax structures suggested by economic theory. But the UK proposals lend an important additional element to the academic debate: the extent to which some forms of taxation are feasible.

In reviewing the academic literature, the paper begins with the aim of maximising global income and analyses tax structures which are consistent with the concept of production efficiency: this holds if it is not possible to reallocate resources between activities in a way that would increase total output. The paper shows that in a real-world situation in which there are cross-border flows of portfolio and direct investment, and also international trade, then taxes on a source or a residence base would be distorting unless they were completely harmonised.

By contrast, in the same situation, from a national perspective it is optimal to exempt outbound investment from tax. This is contrary to the standard prescription of economic theory, which is based on the assumption that £1 of outbound investment crowds out £1 of domestic investment. But if both forms of direct investment are financed at the margin by inbound portfolio investment, then there is no reason to tax outbound investment at the same rate as domestic investment.

The UK proposals follow this prescription for national optimisation, by proposing to exempt foreign source dividends received by UK companies from UK tax. However, the government casts doubt on its ability to prevent UK taxable profit being shifted abroad to lower-taxed jurisdictions. To counteract this, it proposes worldwide taxation of passive income received by affiliates of UK companies. As an anti-avoidance device, this is highly questionable: it is contrary to the spirit of the main reforms, and is likely to induce real distortions to economic activity and to create additional complexity. It will make the UK a less attractive location for parent companies.

More fundamentally, these proposals cast doubt on the long-term feasibility of a source-based system of taxing international corporate profit. There are good reasons for such doubt: it is very difficult in practice to determine a particular allocation of profit amongst countries, and increasingly there is little conceptual justification. But then the long-term future of the taxation of international corporate profit – if there is one – must lie elsewhere. One possibility, which requires further examination, is to base tax on where consumers purchase the final good or service: a destination-based tax.

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Abstract

This paper reviews economic principles for optimality of the taxation of international profit, from both a global and national perspective. It argues that for systems based on residence or source, nothing less than full harmonisation across countries can achieve global optimality. The conditions for national optimality are more difficult to identify, but are most likely to imply source-based taxation. This is consistent with recent proposals by the UK government. However, the government implicitly casts doubt on the feasibility of a source-based system. To the extent that such a system is becoming increasingly infeasible, more fundamental reforms – such as a destination-based tax – require further examination.

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1. Introduction

For a number of reasons, the structure of taxes on international corporate profit is on the political agenda in Europe. Various cases in the European Court of Justice have required significant changes to existing tax structures. Competition over corporate tax rates seems to have become more intense with the recent influx of a dozen new EU member states, most of which have low tax rates. And the Commission is proposing a radical EU-wide reform to remove “tax obstacles” to doing in business in Europe, in support of the Lisbon agenda.

This paper has two main aims. First, it aims to review and extend the existing academic literature on the optimal structure of taxes on international corporate profit. This has been studied for nearly half a century; yet its importance is growing continually as companies and their activities become increasingly international. Second, it aims to review recent proposals made by the UK government to reform the way it taxes dividends received by UK companies from foreign affiliates. These two aims are connected. On the one hand, the paper questions whether the UK proposals are consistent with the optimal tax structures suggested by economic theory. On the other hand, the UK proposals lend an important additional element to the academic debate: the extent to which some forms of taxation are feasible, or will continue to be feasible.

In reviewing the academic literature, the paper begins with the aim of maximising global income and analyses tax structures which are consistent with the production efficiency concept of Diamond and Mirrlees (1971). Production is allocated efficiently if it is not possible to reallocate resources between activities in a way that would increase total output. The paper shows that in a real-world situation in which there are cross-border flows of portfolio and direct investment, and also international trade, then taxes on a source or a residence base would be distorting unless they were completely harmonised.

By contrast, in the same situation, from a national perspective it is optimal to exempt outbound investment from tax. This is contrary to the standard prescription of economic theory, which argues that outbound investment should be taxed at the same rate as domestic investment, with foreign taxes being deductible from the residence country tax base. The reason for the difference stems from the substitutability of domestic and outbound investment. If £1 of outbound investment crowds out £1 of domestic investment, then the standard results hold. But if both forms of direct investment are financed at the margin by inbound portfolio investment, then the link between them is broken. In this case, there is no reason to tax outbound investment at the same rate as domestic investment.

The UK proposals follow the prescription for national optimisation, by suggesting a reform from taxing foreign source dividends received by UK companies to an exemption system. However, the UK government also casts doubt on its ability to prevent UK taxable profit being shifted abroad to lower-taxed jurisdictions. To counteract this, it proposes worldwide taxation of passive income received by affiliates of UK companies. As an anti-avoidance device, this is highly questionable: it is contrary to the spirit of the main reforms, and is likely to induce real distortions to economic activity and to create additional complexity.

However, more fundamentally, these proposals cast doubt on the long-term feasibility of a source-based system of taxing international corporate profit. There are good reasons for such doubt, arising in part from the nature of international business: it is very difficult in practice to determine a particular allocation of profit amongst countries, and increasingly there is little conceptual justification. But if this is true, then the long-term future of the taxation of international corporate profit – if there is one - must lie elsewhere. One possibility, which requires further examination, is to base tax on where consumers purchase the final good or service: a destination-based tax.

2. Economic principles for international taxation

The best-known concepts relating to the optimal taxation of international capital income date back to the 1960s, in contributions from Peggy Musgrave (Richman, 1963, Musgrave, 1969). Musgrave introduced the terms “capital export neutrality (CEN)” and “capital import neutrality (CIN)”, which are now in common use. CEN holds if any individual investor faces the same effective tax rate on her investments, wherever those investments are located. CIN holds if all investments undertaken in the same jurisdiction face the same effective tax rate.

Suppose that, at the margin and in the absence of taxation, competition drives the marginal pre-tax rate of return on all investments in a jurisdiction to be equalised. Then in a simple framework (see, for example, Keen, 1993) CEN implies that (a) the international tax system will not distort the location decisions of any individual investor, (b) the pre-tax rate of return in all jurisdictions will be the same (production will be efficiently organised), but (c) investors in different jurisdictions may face different post-tax rates of return on their investment, and hence different incentives to save. CIN implies that (a) the location choices of investors may be affected by differences in effective tax rates, (b) marginal pre-tax rates of return will differ across jurisdictions (there will not be production efficiency), but (c) investors in different jurisdictions will face the same post-tax rate of return on each of their investments, and hence all face the same incentive to save.

More formally, suppose that there are two countries, A and B, with one investor and one asset in each country. Each investor can purchase shares in either asset. The pre-tax rate of return on the assets are p_A and p_B . The effective tax rates may depend on the location of the investor and the location of the asset: for example, t_{AB} is the effective tax rate faced by the investor in A on the returns from the asset in B. The post-tax rates of return are s_A and s_B . Each investor would want to invest in each asset up to the point at which the post-tax rate of return from each investment was the same: otherwise they could increase their overall return by switching from the investment with the lower rate

of return to the investment with the higher rate of return. That is, each investor would like to allocate their investments such that:

$$\text{Investor A: } s_A = p_A(1 - t_{AA}) = p_B(1 - t_{AB}) \quad (1)$$

$$\text{Investor B: } s_B = p_A(1 - t_{BA}) = p_B(1 - t_{BB}) \quad (2)$$

It is by no means certain that both of these conditions can hold simultaneously: indeed it is unlikely that they will do so without some pattern in effective tax rates. If they do not, then only one investor would hold both assets, and the other would specialise in the one generating the higher post-tax rate of return: that is, either (1) or (2) will hold, but not both. The pre-tax rate of return on each asset is assumed to depend on the amount invested; so equality of one of the conditions will hold as the “marginal” investor shifts the allocation of his investment between the two assets until his condition holds.

CEN holds in both countries if $t_{AA} = t_{AB}$ and that $t_{BA} = t_{BB}$. This immediately implies, from (1) and (2) that $p_A = p_B$: that is the two assets generate the same pre-tax rate of return – which implies production efficiency. Note though, that if the tax rates differ between the two investors - $t_{AA} \neq t_{BB}$ - then the post-tax rates of return will differ: $s_A \neq s_B$.

By contrast, CIN holds in both countries if $t_{AA} = t_{BA}$ and $t_{AB} = t_{BB}$. The pre-tax rates of return will no longer be equal, $p_A \neq p_B$, but the post-tax rates of return will be equal $s_A = s_B$.

The distinction between these two notions of neutrality has led to some debate as to which is the more important (see, for example, Keen, 1993). The economic literature has generally favoured CEN, on the grounds that it generates production efficiency (discussed further below), though this has not always met with approval. Thus, for example, McLure (1992) has claimed that: “economists have generally favoured CEN

because it maximises global welfare ... but businessmen generally favor the ‘level playing field’ provided by CIN”.

However, through a number of contributions discussed below, the question of the optimal tax structure has now progressed well beyond a simple analysis of CEN and CIN. The remainder of this section reviews and develops broader principles.

2.1. Global optimisation and production efficiency

The starting point for any analysis of optimal tax systems is the Diamond and Mirrlees (1971) framework which demonstrated that, within a single country, it is optimal to preserve production efficiency. This holds when it is not possible to increase total output by reallocating inputs to different uses; which implies that the marginal pre-tax rate of return is the same on all investments. If this does not hold, then total output could be increased by shifting capital inputs from a less productive use to a more productive use. Competition between investors would achieve this in the absence of distorting taxes.

However, a number of caveats must be made before simply accepting production efficiency is optimal. First, the Diamond-Mirrlees theorem relies on two critical assumptions: that there are no restrictions on the use of tax instruments available to the government, and that economic rent is fully taxed at 100%¹ (or there is no economic rent). Keen and Piekola (1996) analyse optimal tax rates between co-operating countries when economic rents exist but cannot be taxed at a rate of 100%. In this case, the optimal tax system depends on similar factors to those identified by Horst (1980); namely the elasticity of the supply of savings and the elasticity of the demand for capital in each jurisdiction. Keen and Piekola also show that the optimal tax structure depends on the rate at which economic rents are taxed.²

¹ See Stiglitz and Dasgupta (1971).

² Huizinga and Nielsen (1995, 1996) analyse optimal tax policy when economic rents are taxed at less than 100%, in the absence of cooperation amongst governments.

A second caveat was introduced by Keen and Wildasin (2004). They pointed out that the Diamond-Mirrlees model does not directly apply in an international setting, since there is no longer a single government budget constraint, but each country has its own budget constraint. They analyse the case in which lump sum transfers between governments are ruled out, but where transfers can instead take place via trade taxes and subsidies. Under these circumstances, it may be the case that the optimal (Pareto-efficient) tax system does not generate production efficiency. However, as pointed out by Edwards (2005), if the aim is to generate a global optimum, it is not clear why governments should co-operate by adjusting their trade taxes, rather than agreeing to lump-sum transfers. In the latter case, we are effectively returned to the Diamond-Mirrlees setting of a single budget constraint.

Although the global optimality of production efficiency is an important issue, we now leave these caveats to one side. In the following discussion, we instead focus on the implications for the design of international taxes on profit of a requirement for production efficiency. We then consider in Section 2.6 the rather different case of national optimality.

2.2. Capital ownership neutrality

To begin with, we discuss the use of the term “capital ownership neutrality (CON)” by Desai and Hines (2003). This is similar, though not the same, as the use of the same term by Devereux (1990), as discussed below. Desai and Hines note that much foreign direct investment takes the form of acquisitions, rather than greenfield investment. This is consistent with there being differences in productivity according to the owner of an asset; the classic example is of a multinational firm being more productive than a domestic firm (there is a wealth of empirical evidence on this: see, for example, Criscuolo and Martin, 2004). Now suppose that investor A would have a more productive use of an asset than the current owner, investor B. In the absence of other factors, and taxes, there would be an improvement in world output (and potential gains to both A and B) if A purchased the asset from B. CON, as used by Desai and Hines, is a condition that the tax system does

not distort the ownership of assets; in this case, the international tax system does not prevent A purchasing the asset from B.

To analyse this more formally, return to the simple framework above. However, now suppose that the rate of return on the asset in A depends on the identity of the investor, with p_{AA} is the pre-tax rate of return earned by the investor in A, and p_{BA} is the pre-tax rate of return earned by the investor in B. To make things more concrete, suppose that, whatever the total size of the asset in A, the investor from A is more productive: that is, $p_{AA} > p_{BA}$.

Begin with investor A. In the absence of taxes, he will invest in asset A, which for a small investment suppose yields a return higher than p_B . He will continue to invest in asset A, either (i) until he has exhausted his wealth, or (ii) the return from asset A falls to the level of asset B. In the case of (i), total output would be higher if investor A was able to raise more finance to invest further in asset A. We rule out this possibility to concentrate on case (ii), which implies that $p_{AA} = p_B$ in equilibrium. The position of investor B depends exactly on how we define ownership. Desai and Hines seem to have in mind discrete ownership: either asset A is owned by investor A or by investor B, but not both. In this case, in equilibrium (and ruling out costs of transfer of ownership between the two investors), investor B would simply hold asset B, with $p_{BA} < p_B$.³

In the presence of taxes, the condition for investor A is similar. In equilibrium he will hold

$$(i) \text{ both assets if: } s_A = p_{AA}(1-t_{AA}) = p_B(1-t_{AB}) \quad (3a)$$

$$(ii) \text{ only asset A if: } s_A = p_{AA}(1-t_{AA}) > p_B(1-t_{AB}) \quad (3b)$$

$$(iii) \text{ only asset B if: } s_A = p_B(1-t_{AB}) > p_{AA}(1-t_{AA}) \quad (3c)$$

³ However, if B can hold a minority share in asset A (which is controlled managed and controlled by A), then B could also earn p_{AA} . With only two investors and two assets, then in this case (ii) must hold. However, we will not examine this case.

The equivalent conditions for B are:

$$(i) \text{ both assets if: } s_B = p_{BA}(1-t_{BA}) = p_B(1-t_{BB}) \quad (4a)$$

$$(ii) \text{ only asset A if: } s_B = p_{BA}(1-t_{BA}) > p_B(1-t_{BB}) \quad (4b)$$

$$(iii) \text{ only asset B if: } s_B = p_B(1-t_{BB}) > p_{BA}(1-t_{BA}) \quad (4c)$$

The introduction of a completely general tax system could generate an equilibrium in which investor B owns asset A instead of investor A. This would violate the Desai/Hines notion of CON. Note that in the absence of tax, we would observe (3a) and (4c). To ensure CON holds we therefore require conditions on the tax rates such that this combination continues to hold.

Desai and Hines claim that CON will hold if A and B face the same overall effective tax rate as each other on the returns to any asset. This would occur if the returns to the asset were taxed only in the location of the asset, and not in the residence location of the investors (which may be different). This in turn is consistent with the investors' residence countries exempting foreign source income from tax, the case emphasised by Desai and Hines.

More formally, let $t_A = t_{AA} = t_{BA}$ and $t_B = t_{AB} = t_{BB}$, as Desai and Hines describe. Then the second equality/inequality in each of (3a) and (4c) can be rewritten as:

$$p_{AA} = p_B \frac{(1-t_B)}{(1-t_A)} \quad (3a.i)$$

and

$$p_{BA} < p_B \frac{(1-t_B)}{(1-t_A)} \quad (4c.i)$$

This combination of tax rates cannot change the ownership structure of the assets. For example, suppose t_A is very large and t_B is zero. Then we would expect less investment in asset A by investor A since it is taxed at a higher rate. But since B would be taxed at the same rate on investment in asset A, the tax system cannot induce the case in which there is a switch of ownership.

However, while an exemption system may be a *sufficient* condition for achieving CON, it is not a *necessary* condition (at least in this framework). Suppose there is pure residence-based taxation, in which the returns are taxed only in the home country of the investor, so that $t_A = t_{AA} = t_{AB}$ and $t_B = t_{BA} = t_{BB}$. Then conditions (3a) and (4c) would become:

$$\frac{s_A}{1-t_A} = P_{AA} = P_B \quad (3a.ii)$$

and $\frac{s_B}{1-t_B} = P_B > P_{BA} \quad (4c.ii)$

The right hand part of these expressions is identical to the case in the absence of tax. The only difference from the case in which there is no tax is that the post-tax rates of return earned by the investors are different. For example, suppose that $t_A > t_B$. Then the two taxes would reduce the rate of return for A by more than the rate of return for B. But the pattern of ownership would be unchanged.

However, now let us add, in turn, two further elements. First, we have so far discussed only the position of individual investors; we have not yet distinguished between investment undertaken by individuals and investments undertaken by corporations. Second, we have not yet considered in detail the role of competition between companies, including international trade.

2.3. Distinguishing portfolio and direct investment

Devereux (2000) analyses simultaneously the optimality properties of personal taxes on capital income, and taxes on corporate profit. A useful framework for this distinction is to suppose that individuals (possibly indirectly through investment vehicles) undertake portfolio investment in corporations. These corporations need not be resident in the same country as the individual investor: despite a home bias in portfolio investment, there is huge cross-border portfolio investment. Corporations, in turn, raise finance from individual investors around the world, and undertake direct investment; again, the direct investment can be domestic, or cross-border.

Given perfect capital mobility for portfolio investment, and abstracting from risk,⁴ then the post-corporation tax rate of return required by companies must be equalised across all companies, no matter where they are located. In equilibrium, taxes levied on individual shareholders may affect the post-corporation tax, pre-personal tax, rate of return, required of companies, but that same rate is required of all companies.⁵ A change to any individual's personal tax rate may affect her allocation of investments, and may affect her post-tax rate of return. However, as long as each investor is small relative to the market (or each group of investors is small) such a change in tax rates will not affect the required post-corporation tax rates of return. Devereux (2000) analyses the required relationship between corporate and personal taxes in such a setting: here we abstract from personal taxes altogether in order to focus solely on corporate taxes. How does such a setting affect the requirements for achieving production efficiency?

The key new ingredient created by considering portfolio and direct investment is that the post-corporation tax rate of return required from direct investment corporations is now fixed. In terms of the formal framework used in this paper, it is straightforward to reinterpret the investment opportunities summarised in (1) and (2) as affecting only

⁴ There is an extensive literature which analyses portfolio investment decisions in the presence of risks and differential taxes on capital income, see, for example, Brennan (1970), Gordon and Bradford (1980) and Bond, Devereux and Klemm (2007). However, we abstract from these issues here.

⁵ Any withholding tax levied on payments to all shareholders is for this purpose treated as a tax on the corporation.

corporations. In this case the tax rates are effective corporate tax rates, and s_A and s_B denote the post-corporation tax (pre-personal tax) rates of return. But if all companies face the same post-corporation tax rate of return, then there is a further element to the framework: it must be the case that $s = s_A = s_B$.

In addition, like Desai and Hines (2003), Devereux (2000) also considers the case in which the productivity of an asset depends on the company which owns it. However, Devereux (2000) considers a more general problem than simply the ownership of a single asset. Suppose, for example, that each company operates in each country through wholly-owned subsidiaries. Then the pre-tax rates of return on the investments need not be equal to each other. In this case, we have:

$$s = p_{AA}(1-t_{AA}) = p_{AB}(1-t_{AB}) \quad (5)$$

and $s = p_{BA}(1-t_{BA}) = p_{BB}(1-t_{BB})$. (6)

In the absence of tax, (5) and (6) clearly would generate production efficiency (where the four pre-tax rates of return are equal). If one firm was more productive than another, it would generate a higher post-corporation tax rate of return. This would attract more capital from individual investors. As the company expanded, its marginal rate of pre-tax return would decline (and that of the other company would increase if it had less capital). In equilibrium, the two companies would earn the same post-corporation tax rate marginal return.

How do the neutrality concepts work in this context? There is no impact on the implications for how CEN can be achieved, except that the requirements for neutrality now specifically apply to effective corporation tax rates: as long as each company faces the same effective corporate tax rate on all investments (for example, $t_A = t_{AA} = t_{AB}$), then location decisions will not be distorted.⁶

⁶ Strictly, if companies make discrete investment decisions, then the relevant tax rate for location decisions is an average effective tax rate (see Devereux and Griffith, 1998). CEN therefore requires effective average tax rates to be equal across jurisdictions. However, in this case, companies also make economic rent, which

However, note that CEN on its own is no longer sufficient to achieve production efficiency. Suppose CEN holds, but that $t_A > t_B$. Then the pre-tax rates of return earned by company A would exceed those earned by company B: production efficiency would not hold. It is also clear that if only one country introduced CEN, this would not generate production efficiency. For example, if only A introduced CEN, the pre-tax rates of return would differ between the two companies, and they would also differ across the different investments undertaken by B. This calls into question the notion of some individual countries (see, for example, HM Treasury and HMRC, 2007) that they aim to achieve CEN for their own investors. On its own, this is not optimal either at a global level or for an individual country (see below).

What of CIN? This is more complex, since to some extent this is a neutrality property in search of a rationale. When introducing this concept, we noted that – in a simple framework – CIN would imply that all investors faced the same post-tax rate of return (though pre-tax rates of return would differ across countries). However, this is not an issue for the optimality of corporation taxes if all companies are required to earn the same post-corporation tax rates of return. The ultimate post-tax rate of return earned by investors will be affected by their personal tax rates on capital income, but not on the corporation tax system.

However, the “level playing field” mentioned by McLure (1992) suggests another interpretation of CIN, emphasised by Devereux (1990, 1998). This is that companies from A and B compete with each other in each country. Suppose, for example, that each company produces a different good (call them X_A and X_B) using just capital (K_A and K_B) in linear production functions: that is

$$X_A = aK_A \tag{7}$$

$$X_B = bK_A \tag{8}$$

raises again the issue of whether production efficiency is optimal. Devereux and Hubbard (2003) explore this in the context of national optimality, as discussed below

The factors a and b reflect how efficient each producer is. These goods sell in each country at country-specific prices: for example, company A sells its good in country B at price q_{AB} . Consumers in each country allocate their income between the two goods according to their preferences and the prices of the two goods. If the price of X_A rises then consumers will buy more of X_B and less of X_A . The rate of return earned by each company therefore depends on the price at which it can sell its product. The pre-tax rate of return on, say, investment by A in country B is $p_{AB} = aq_{AB}(1 + \varepsilon_{AB})$, where ε_{AB} is the elasticity of demand for X_A in country B. The higher is the relevant tax rate - t_{AB} - the higher will be the price at which X_A must be sold: this clearly gives an advantage to company B. But if CIN holds, that is $t_{AA} = t_{BA}$ and $t_{AB} = t_{BB}$, then neither company investor will gain a competitive advantage in either country.

If producers sell their product only in the country in which the good or service is produced, then levying the same effective tax rate on all producers in that country is a sufficient condition for taxes not to distort competition. This is equivalent to an exemption system in all residence countries.

Although this is a form of CIN, it might also be considered a form of CON. In this setting, CON does require an exemption for foreign source income (or at least a tax system which is equivalent). That is, to avoid distortions to the corporate ownership of assets in any jurisdiction, all companies which may purchase assets there must face the same effective rate of tax. It is no longer the case that pure residence based taxes – on corporations – can achieve CON.

However, the concept of fair competition outlined here is more general than CON, since the change of ownership considered in CON could be achieved not by acquisition, but by firm X simply entering the market and undercutting Y. Ultimately, Y could go out of business, to be replaced by X (which would take us back to the analysis in the previous section, instead of assuming that both countries operate in both markets). A broader interpretation of CON is therefore that one company has no competitive advantage over

another as a result of the tax system: this is the sense in which the term was used by Devereux (1990).

2.4. International trade

However, this broader interpretation of the term requires consideration of another dimension: international trade. In practice, companies do not always sell their output in the location of production: they can export the output to other countries. This has a profound impact on the requirement for production efficiency. Suppose companies X and Y compete with each other in a third country. To avoid any distortion to competition in the third market, it would be necessary for both companies to face the same effective tax rate. Yet, typical corporation taxes are not levied on a destination basis – where the output is sold. So there would not necessarily be any tax levied in the third country. Instead, tax would be levied either in the “source” country, where the investment takes place, or the “residence” country, where the company’s management and control takes place. Yet X and Y may compete with each other even if their source and residence locations are different from each other.

CON, in its broader sense that one company does not derive a tax-induced competitive advantage over another, would require full harmonisation of source- and residence-corporation taxes. That is, the effective tax rates faced by all potential competitors in any third country would need to be the same. This is clearly a much more demanding requirement than achieving CON in the Desai and Hines sense, which can be achieved by an exemption system, generating source country taxation.⁷

2.5. Summary of principles for global optimisation

In a world with direct and portfolio investment, in which all companies worldwide are required to earn a given post-tax rate of return, the principles of CEN, CIN and CON

⁷ It is for these reasons that the empirical papers of Devereux and Pearson (1995) and Devereux and Loretz (2008) consider the proximity of European tax systems to full harmonisation.

need some revision. With regard to the optimal setting of corporation tax, the principle that different individual savers should face the same post-tax rate of return is no longer relevant, since corporation taxes in any one country typically have no impact on this rate of return.

That leaves the principle of production efficiency. It is true that production efficiency is Pareto optimal only under certain conditions. However, there is no comparable and clear principle in cases where these conditions do not hold. As Slemrod (1995) has argued, the situation here is comparable to the principle of free trade. The conditions under which free trade are optimal are well known: while it is possible that these conditions do not hold, most economists still consider free trade to be a useful guiding principle. The same could be said for production efficiency.

Other “principles” are therefore subsidiary to production efficiency. Based on the discussion above, production efficiency implies two “principles:

1. Direct “CEN”: that taxes should not distort the location of corporate activity
2. Undistorted competition: that taxes should not distort competition (even in a very broad sense) between any companies operating in the same market⁸

The second of these principles is a more general concept of CON than the definition of Desai and Hines (2003). If it were the case that any less productive firm was immediately acquired by a more productive firm, then all (remaining) firms would be equally productive. In this case there would be no harm to competition, since all firms would be equally productive. But if such acquisitions do not always occur – as seems likely, given costs of acquisition - then we are left with firms of different levels of productivity co-existing. This introduces the more general principle above.

⁸ Devereux (2000) and Devereux and Pearson (1995) summarized the principles as Direct CEN and Direct CIN. If both of these hold, then so do the two principles set out here.

In a world where the post-corporation tax rate of return required for all companies is the same, production efficiency cannot be achieved by residence- or source-based taxes unless they are fully harmonised. In the absence of sufficient international agreement to achieve that outcome, two questions then arise.

First, is it possible to identify which of the economic distortions generated by taxes have the greater welfare costs? Source-based taxation distorts location choice and competition generated by international trade; residence-based taxation distorts competition generated by cross-border investment and international trade. However, given that all these factors are closely related – for example, decisions of location involve the choice between cross-border investment and trade - any argument in favour of one form of taxation on this basis would be precarious.

Second, is it possible to identify alternative bases for the international taxation of corporate income? One which might be worth exploring is a destination-based tax (see, Bond and Devereux, 2002, Auerbach et al, 2008). The idea here is that taxes are based neither on the location of residence, nor on the location of production, but on the location of a sale to a final consumer. In this case, if final consumers are immobile, location decisions will not be affected, and all companies competing in the same market would be taxed equally irrespective of their ownership and the location of their production and residence.

2.6. National optimisation

So far the discussion has focused on the conditions to achieve global production efficiency. But this almost inevitably requires international cooperation.

Perhaps a more realistic goal for a national government is to maximise the welfare of its own citizens. This may generate a very different “optimal” tax structure for the taxation of cross-border income. As with the terms CEN and CIN, Musgrave (Richman, 1963,

1969) introduced the term “national neutrality” to describe optimal policy for an individual government. Supported by more the formal analysis of Feldstein and Hartman (1979), the key policy prescription is that a government should tax the worldwide income of its residents, treating foreign taxes as a cost (and hence allowing them to be deducted, but not allowing a credit).

The rationale behind this is as follows. Suppose there is a fixed supply of saving, to be allocated between domestic and outbound investment. For the country as a whole, the optimal allocation of investment would equate the “social” rates of return from the two. In a simple framework,⁹ the social rate of return to the home country is the return net of foreign taxes, but before domestic taxes (since domestic taxes are used to benefit domestic residents). Hence the post-foreign tax rate of return on outbound investment should be set equal to the pre-tax rate of return on domestic investment. Private investors, however, will allocate investment to equalise post-tax rates of return. These two allocations are only the same under a worldwide tax system where foreign taxes are deductible from the home country tax base.

Slemrod (1995) justifies this approach with an analogy to free trade. In a basic economic model of a small open economy, it is inefficient to levy import tariffs or a source-based tax on capital income. But from the perspective of an exporting country, the existence of an import levy in the importing country does not justify any rebate to exports. Similarly, if the capital-importing country does have a source-based tax on capital income, that is no reason for the residence country to adjust its tax system: the residence country should levy tax on the returns net of foreign tax (which is an expense), and not give any credit.

A central assumption of the basic argument – explicitly stated in the Feldstein and Hartman (1979) model - is that there is a direct link between domestic and outbound investment: £1 more invested abroad reduces investment at home by £1. Yet this is not generally the case in practice. Indeed, in the framework of portfolio and direct investment set out above, domestic companies can raise unlimited finance on the world market at the

⁹ Strictly, where the marginal cost of public funds is unity.

world post-corporation tax rate of return. In this case, there may be no link at all between domestic and outbound investment, and hence no link between the optimal tax rates.

This position is studied in some detail by Devereux (2004), who considers a small open economy that has both inward and outward portfolio and direct investment, and analyses the optimal relationship between the taxes on these different forms of investment. In this model, outbound investment does not crowd out domestic investment, since at the margin both forms of investment are financed by inward portfolio investment. In this case, the existence of a tax on domestic investment has no implications for the optimal effective tax rate for outbound investment. If the country has a whole has no market power (that is, all its firms together are small relative to the world market), then the optimal tax rate on outbound direct investment is zero. A similar result was implicitly found by Mintz and Tulkens (1996).

If the country does have some market power, then it could be optimal to tax the outbound investment, to drive up the world price of the product. This is similar to the market power case for a tax on exports. However, it is not feasible to do this in practice with a general tax system applying all outbound investment.

The argument that the appropriate tax on outbound investment is zero is in fact very similar to the argument that the appropriate tax on inbound investment is zero (see, for example, Gordon, 1986). This is because if the outbound direct investment is financed at the margin by inbound portfolio investment, then it really can be considered a form of inbound investment. The decision of a multinational company as to where to locate its parent company and headquarters is similar to any other location decision. A high tax rate associated with parent company location may induce the company to choose a different, lower taxed, location. In such a setting, there is no rationale for the government hosting the parent company to tax its worldwide income.

In a more complex case, the links between domestic and outbound investment may be more subtle. Devereux and Hubbard (2003) consider the case in which a domestic

company may export to the foreign market or produce abroad: in either case it competes with another company making the same decision. In principle, the domestic government could modify its domestic tax system to manipulate the decisions of the company in a way which would give it a competitive advantage, and hence boost domestic welfare. However, the “optimal” tax system in this setting depends on the economic parameters facing the company: exemption, credit or deduction systems could all be optimal in different situations. Again, it is not feasible to adjust the tax system for outbound investment according to the specific characteristics of the tax payer.

There is now a growing empirical literature examining links between outbound and domestic investment (see, for example Simpson, 2008), which would imply an even more complex calculation of the optimal tax system. Again though, it is unlikely that the optimal system would be the same for all companies.

3. Implications of difficulties in identifying the location of profit

3.1. How robust is separate accounting?

This discussion of economic principles has so far left to one side the feasibility of any particular tax regime. However, in practice, it appears that feasibility may be such a concern that it may overturn other considerations. This is effectively the case in system proposed by the UK government in 2007:

“... the Government seeks views on a move to a regime in which foreign dividends paid to large and medium UK-based businesses could be exempt from UK tax. An exemption regime, however, would need to be coupled with alternative means of protecting UK revenues. So the paper proposes a new income-based system for controlled companies (CC), which would distinguish mobile passive income from active income and enable the UK to tax artificially located profits that are effectively within the control of the UK parent”

(HM Treasury and HM Revenue and Customs, 2007, page 3)

That is, the UK government would like to switch from a system in which worldwide income is taxed on repatriation to the UK, with a limited credit given for foreign taxes borne, to a system which taxes only income arising in the UK. However, the government is concerned that such an exemption system will make it easier for UK-based businesses to shift corporate profit out of the UK to escape UK tax (since such profit could be returned to the UK as an untaxed dividend). The government's proposal for dealing with this tax avoidance strategy is to introduce a distinction between active and passive income, on the grounds that it is passive income which is more easily shifted abroad.

We consider the distinction between active and passive income below. Before doing so, however, it is useful to consider the source of the problem identified by the government. That is, the government apparently has little confidence that it can introduce such a reform in a relatively revenue-neutral way, in spite of the fact that currently only a small proportion of corporation tax revenue is generated from foreign source dividends received by UK companies. (Most other OECD countries already have some form of exemption of foreign source dividends).

The fundamental problem here is in identifying profit which is earned in the UK. But attempting to define the where profit is generated is often very difficult, and in some cases impossible.

In a simple case, we can consider a UK resident company that wholly owns a subsidiary which is registered, and which carries out all its activities – employment, production, sales – in, say, France. Then France is typically considered the source of the corporate profit. Conventionally, we can also drop sales from the list of activities: if the subsidiary exported all its product to Italy, France would still conventionally be regarded as the source of the profit (although in economic terms it is less clear why this would be the case).

Things are less clear, however, if the UK holding company owns several subsidiaries in different countries, which undertake different aspects of the multinational's activities: for

example, finance, marketing, R&D, production, sales. The existing system of separate accounting requires all transactions between these different parts of the group to be valued, in order to divide total profit between the countries involved. The contribution made by each would be determined using “arm’s length pricing” – the price that would be charged by each subsidiary for its services as if it were dealing with an unrelated party. Of course, this procedure is difficult in practice since in many cases no such arm’s length price can be observed; transactions between subsidiaries of the same corporation may not be replicated between third parties. But in many cases, not only is this difficult to administer, it has no conceptual foundation.

For example, suppose that the multinational has two R&D laboratories in different countries. Each R&D laboratory has invented, and patented, a crucial element of the production technology. Each patent is worthless without the other. One measure of the arms length price of each patent is therefore clearly zero – a third party would not be prepared to pay anything for a single patent. Another possible measure would be to identify the arm’s length price of one patent if the purchaser already owned the other patent. But if both patents were valued in this way, then their total value could easily be larger than the value of the final output. More generally, it is far from clear that the arm’s length price used by independent parties would be the same as the price which would be transacted by affiliates within the same group: different organisational forms can be expected to arise because of differences between companies, which may be reflected in cost structures: in this case, as shown by Devereux and Keuschnigg (2008), applying the arm’s length price could in itself generate significant economic distortions.

Identifying where profit is generated is a fundamental problem of conventional corporation taxes in an international setting. In some ways it is a problem with which the world has learned to live, even though allocating profit among source countries is in practice a source of great complexity and uncertainty. But this problem is not just one of complexity and uncertainty: as evidenced by the approach proposed by the UK, it can – and should – also affect the fundamental design of the tax system.

3.2. Active v passive income

In its concern to combat possible shifting of profit out of the UK, the government proposes to borrow the distinction used elsewhere – especially in the USA - between active and passive income. Broadly, and bearing in mind that the proposals are not fully developed, the following Table indicates the proposal.

Table 1. Proposed treatment of different forms of income¹⁰

	Received in the UK	Received abroad
Taxed	Interest, rents, royalties, active income, dividends from non-CC profit	Interest, rents, royalties, active income
Not taxed	dividends from CC profit	active income

In the table, CC denotes “controlled company” – the proposed regime would replace the existing CFC (“controlled foreign company” regime). Subject to specific exemptions, then, for a worldwide group of companies controlled by a UK company, the government is in effect proposing (a) to tax active income which arises only in the UK, but (b) a worldwide tax on accrual for all passive income arising within a UK-resident multinational company.

The government may well be correct that companies may find it easier to shift passive income between jurisdictions (including out of the UK) than to shift active income. However, at first sight, the proposals seem to be strangely targeted. The government is concerned that income earned in the UK is shifted out of the UK in order to avoid UK tax. In principle, this could apply to all types of income. However, instead of creating rules to police the border between UK and non-UK income, the government instead proposes to create a different border – between active and passive income.

¹⁰ The government proposes an active finance exemption for “genuine active banking, financial, insurance activity and property investment businesses” as well as an exemption for certain intra-group interest (HM Treasury and HMRC, 2007, page 21).

From an economic perspective, this is an entirely artificial distinction, based primarily on the form in which the income from an investment takes. An investor could finance a factory producing machine tools, which it sells. The sales revenue constitutes active income. But the same investor could instead finance an R&D facility which generates a patent. The company may licence other users of the patent in return for a royalty payment: this is passive income. Or the investor could simply deposit the funds in a bank which lends the funds and receives interest: again, passive income.

Is there any prima facie reason to tax these activities differently? One line of argument is that it is easier to shift passive income. However, it is easy to imagine more or less identical circumstances where income may take an active or a passive form. Consider just two examples. First, suppose a foreign affiliate (X) of a UK company develops a new product, produces it, markets it and sells it. Clearly this is active income; if profits were repatriated to the UK in the form of a dividend, then under the government's proposals they would not be taxed. Now suppose that instead, this affiliate develops the product, but licences a second affiliate (Y) to produce, market and sell the product. Y pays a royalty to X for the right to do so. X has then received passive income, which would be taxable under the proposals. But taxing these forms of organisation in different ways will clearly distort the way in which the company organises its worldwide structure. There is no prima facie reason why they should be treated differently. Indeed, there is no prima facie reason why the income should be taxed differently even if company Y were an independent third party.

Second, suppose affiliate X uses retained earnings to purchase equity in affiliate Y, and received a stream of dividends from the profits made by Y. This is passive income. But alternatively, it could pay its own profit as a dividend to the UK parent. This would be exempt tax under the proposals. The UK parent could then purchase the equity in Y directly, and receive the dividend stream from Y without further tax. Again, the distinction in the tax treatment of passive and active income would have significant effects on the structure and organisation of the business, and may significantly affect the pattern of investment.

This discussion does not mean that a Controlled Company regime should not include a distinction between passive and active income. Given that it is easier to shift passive income, then such a distinction may be helpful. (However, it is not clear whether introducing this distinction, as opposed to identifying specific forms of income, would really be an advantage).

3.3. Conclusions on the UK proposals

The broadest issue which arises from consideration of the proposals made by the UK government in HM Treasury and HMRC (2007) is the government's view on the feasibility of the underlying structure of the international tax system – separate accounting. This structure is based on the principle that it is possible to identify where income and costs are generated, and to tax profit in the jurisdiction in which it arises. The discussion in Section 2 about the merits of source and residence-based taxation assumes that such a system is feasible.

In practice, there are many ways in which the “source” of income may be manipulated. And even if there is no intention to manipulate the source, there may be conceptual uncertainty as to where the profit was earned.

The UK's approach to protecting the UK tax base is instructive. It does not propose to design rules to ascertain whether or not an income stream, or a cost stream, should be allocated to the UK. Instead, it proposes rules which determine whether or not an income stream, arising anywhere in the world, is passive or active. By proposing a tax on worldwide passive income, the UK government appears to be implicitly acknowledging that it cannot directly determine whether income (or costs) originates in the UK. In effect,

it is admitting that the source-based system of separate accounting cannot be policed. If this is true, then it is an important factor in considering an optimal tax policy.

If implemented, the proposals which the government does make will result in two types of error:

- (a) it will not prevent taxable profit from active income being shifted out of the UK, and
- (b) it will tax passive income arising in the rest of the world which has no relationship with the UK.

4. Conclusions

This paper examines economic principles which underlie the optimal taxation of international corporate profit. Section 2 reviews and extends the analysis of the forms of taxation which can generate global and national optimality, while Section 3 discusses specific proposals recently made by the UK government.

Global optimality is generally achieved by production efficiency. The analysis here demonstrates that – in the context of cross-border portfolio and direct investment, as well as international trade in goods and services – taxes on a source or a residence basis would need to be fully harmonised to achieve production efficiency.

The conditions for national optimality depend partly on the characteristics of the economy: the government could, in principle and in some cases, induce a welfare gain stimulating or reducing outbound direct investment. However, a central case is where domestic and outbound investment are both financed at the margin by inflows of portfolio investment, and the country has no market power: in this case, there is no convincing argument for taxing the returns from outbound direct investment, even if domestic investment is taxed on a source-basis. This leads to a presumption in favour of source-based taxation. The UK's proposal to move to a source-based system by

exempting foreign source dividends received by UK companies from UK tax is consistent with the aims of national optimisation.

However, it is by no means clear that a system of source-based separate accounting can be adequately administered. Some evidence of this comes from the anti-avoidance proposals made by the UK government. As Section 3 describes, the government is not confident that it can protect the UK tax base under an exemption system. To protect the UK tax base, it does not propose rules to identify whether income or costs arise in the UK, but instead proposes a worldwide distinction between active and passive income. If it is true that the system of source-based taxation accounting cannot be policed, then the discussion of optimal tax principles in Section 2 requires another important element.

What is the optimal tax system if source-based taxation is infeasible? Of course, the broad conclusion of the discussion of a globally optimal tax system based on source or residence is that either would need to be fully harmonised; this is already infeasible, and any infeasibility of implementing a source-based system merely confirms that. But if source-based taxation is optimal from a national perspective, then whether or not it is feasible is of crucial importance.

If source-based taxation is infeasible, a more radical reform is called for. One possibility would be a destination-based tax, levied where sales are made to a final consumer. If the final consumer is immobile, then such a tax would not distort the location of economic activities undertaken by companies. If it applies to all companies competing in the same market, it would not distort the pattern of competition. And since income would be measured only by reference to sales to a third party, intra-company transfers would not be taxable, and transfer pricing would become irrelevant. Such a tax therefore meets the objectives of a globally optimal tax system outlined above. It would also be optimal from the perspective of a single country, since no source or residence taxes would be applied in that country. If other countries maintained source-based taxes, then that country would attract higher inward direct investment. The feasibility of such a tax needs to be examined in more detail.

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