Oxford University
Centre for
Business Taxation

US Supreme Court unanimously chooses substance over form in foreign tax credit

August 2014

WP 14/11

Charles E McLure
Stanford University

Jack Mintz
University of Calgary

George Zodrow
Rice University

Working paper series | 2014

SAID BUSINESS SCHOOL
UNIVERSITY OF OXFORD

US Supreme Court Unanimously Chooses Substance over Form in Foreign Tax Credit Case: Implications of the PPL Decision for the Creditability of Cash-flow Taxes

Charles E. McLure, Jr.
Senior Fellow Emeritus, Hoover Institution
Stanford University, Stanford CA, USA

Jack Mintz
Palmer Chair, School of Public Policy
University of Calgary, Alberta, Canada

George R. Zodrow (Corresponding Author)
Cline Professor, Economics Department, and Rice Scholar, Baker Institute for Public Policy
Rice University, Houston, TX, USA;
International Research Fellow, Centre for Business Taxation
Oxford University, Oxford, England
zodrow@rice.edu

A revised version of this paper is forthcoming in International Tax and Public Finance

Abstract

In a recent unanimous decision in the PPL case, the US Supreme Court ruled that a one-time retroactive British "Windfall Tax" levied on 32 public utilities that were privatized between 1984 and 1996 was eligible for the US foreign tax credit (FTC). The Court rejected the contention of the US Internal Revenue Service that eligibility for the FTC should be governed by the legislative form of the tax rather than its economic substance. This decision could have far-reaching implications for the creditability of taxes that are not ordinarily thought to be income taxes, including various cash-flow business taxes that are key elements of several proposals recommending replacement of the income tax with a consumption-based tax. This article examines these issues, arguing that one and arguably both of the most common forms of cash flow consumption-based taxes should be creditable; it also discusses questions that remain about the interpretation of key regulatory requirements that govern creditability.

Keywords: US Supreme Court PPL decision, windfall profits tax, foreign tax credit, cash flow tax, rent tax

JEL Codes: H25, H8

US Supreme Court Unanimously Chooses Substance over Form in Foreign Tax Credit Case: Implications of the PPL Decision for the Creditability of Cash-flow Taxes

1. Introduction

On May 20, 2013, in the PPL case,[1] the US Supreme Court ruled, in a unanimous decision, that a one-time retroactive British tax levied on 32 public utilities that were privatized between 1984 and 1996 – known as the Windfall Tax – was eligible for the US foreign tax credit (FTC). The Court rejected the contention of the US Internal Revenue Service that eligibility for the FTC should be governed by the legislative form of the tax rather than its economic substance. Questions remain, however, about the interpretation of key regulatory requirements that govern creditability.

The PPL decision could have far-reaching implications for the creditability of taxes that are not ordinarily thought to be income taxes, including various cash-flow business taxes that are key elements of several proposals recommending replacement of the income tax with a consumption-based tax. Indeed, in an amicus brief in support of the respondent (Alstott et al. (2013, p. 3)), a group of eight distinguished law school professors and one economist warned that a decision for the taxpayer could "extend the foreign tax credit well beyond its statutory scope of income and excess profits taxes to a whole host of taxes on value and perhaps even to consumption taxes, none of which have ever been creditable."

This article examines these issues, drawing in part on arguments made in Altshuler et al. (2012), an amicus brief filed in support of the petitioners in the PPL case in which all three of the authors of this paper participated. Section 2 provides background information; it summarizes the US statute and regulations governing creditability, the provisions of the UK's Windfall Tax, the arguments of the taxpayer and the government in the PPL case, and why the US Supreme Court agreed to consider the creditability of such a seemingly unimportant tax. Section 3 summarizes the most relevant arguments presented by Alstott et al., the Supreme Court's opinion written by Justice Thomas, the concurring opinion written by Justice Sotomayor, and some questions left unanswered by the *PPL* decision, including the interpretation of the regulatory provisions mentioned above. Section 4 summarizes the experience of the present authors when they considered recommending that various foreign countries enact cash-flow taxes and considers the implications of *PPL* for the creditability of cash-flow taxes. Section 5 considers some sector-specific cash flow taxes and other taxes broadly similar to cash flow taxes that have been deemed creditable by the US and also examines the warning that taxes on value could be deemed creditable. Section 6 concludes.

2. Background

2.1 The US statute and regulations

The United States allows credit against US tax liability for certain taxes paid to foreign governments, including taxes paid by foreign subsidiaries of US companies. The US Internal Revenue Code (IRC), Section 901, states that income, war profits, and excess profits taxes are creditable. The regulations that interpret the statute (IRC Section 1.901), which lump these three types of taxes together as "income taxes," state that whether a tax is creditable depends on its "predominant character," which must be "that of an income tax in the U.S. sense." Generally, a

[1] *PPL Corp. et al, v. Commissioner of Internal Revenue*, 569 US _____ (2013).

tax "either is or is not an income tax, in its entirety, for all persons subject to the tax."

The "predominant character" criterion is met if the tax "is likely to reach net gain in the normal circumstances in which it applies." To fulfill the latter requirement, (1) gain must be realized (the realization requirement), (2) gross receipts cannot exceed actual values (the gross receipts requirement), and (3) recovery of all significant expenses must generally be allowed (the net income requirement). These requirements are intended to prevent FTCs being claimed for taxes that are not levied on net income (e.g., taxes on gross income) and for taxes whose base exceeds income in the US sense (for example, by taxing gain that has not been realized, overstating gross receipts, or understating deductions). An exception to the generally applicable net income rule would seem to be crucial for the creditability of some forms of cash-flow taxes: the net income rule is deemed to be satisfied even if recovery is not allowed for all expenses, as long as other allowances compensate for their absence.

2.2 The UK Windfall Tax

As part of the Thatcher government's efforts to reduce direct government participation in the British economy, the UK privatized 32 public utilities between 1984 and 1996. During an "initial period" following privatization, commonly about four years, the privatized companies were not subject to rate regulation. During this period the companies were not allowed to raise rates, but also were not required to reduce them. By becoming more efficient, the companies increased profits substantially, giving rise to complaints that the values at which the companies were privatized were too low. When it came into power in 1997, the Labour government imposed the Windfall Tax, to deliver on a campaign promise to claw back the excess profits earned during the initial period following privatization.

Formally, the tax was levied on the difference between two values: a calculated figure defined as the "value in profit-making terms" and the lower "flotation value" or privatization value. The Windfall Tax can be described by the following formula:

$$Tax = 0.23\,[(365 \times 9 \times P/D) - FV] = 0.23\left\{9\left[\frac{P}{(D/365)}\right] - FV\right\}\ , \qquad (1)$$

where

D is the number of days in the taxpayer's initial period,

P is the total amount of profits earned during that period, and

FV is flotation value.

The term 9[P/(D/365)] defines value in profit-making terms. It reflects an estimate of the value of the firm, calculated as the product of an implicit price-earnings ratio (9) and the average annual earnings of the firm [P/(D/365)] during the initial period. The tax was thus 23% of the difference between the value in profit-making terms and the flotation value. The assumed price-earnings ratio used (nine) was the minimum value realized by the 32 privatized companies.

2.3 The taxpayer's position

Of the 32 privatized companies, 27 had initial periods of four years, and three more had initial periods that differed only slightly from four years. Only one, Railtrack, had a significantly shorter initial period, 316 days. (One company had no tax liability.) The taxpayer PPL, the American part-owner of one of the privatized companies, argued that an initial period of four years was the normal circumstances in which the tax applied. Based on this reasoning it argued that, with insignificant rounding, equation (1) could be rewritten as:

$$Tax = 0.23[9/4 \times P - FV] \tag{2}$$

or as:

$$Tax = 0.5175\ [P - 0.444 \times FV]. \tag{2a}$$

This equation refers to tax paid during the entire four-year initial period. To convert it to an annual tax on excess profits in each of the four years, it can be rewritten as follows:

$$Tax_i = 0.5175\ [P_i - 0.111 \times FV], \tag{2b}$$

where Tax_i is the annual tax and P_i represents profits in each of the four years, considered individually. This expression implies that the tax was 51.75% of the excess of profits over 11.1% of flotation value. PPL thus contended that the Windfall Tax was in fact a tax on excess profits, emphasizing that (2b) is precisely the form excess profits taxes commonly take.[2]

2.4 The government's position

Although the government stipulated to the accuracy of the taxpayer's mathematical manipulations of equation (1), it objected that the rewritten formulas were neither "the statutory equivalent of the equation set forth in the [Windfall Tax] Act" nor "an appropriate application of the equation in the Act" and argued that the stipulations are "irrelevant and immaterial." It argued that the form of the tax, and not its economic substance, should determine credibility, going so far as to argue before the Tax Court that "[t]he words of the UK statute *are* the

---

[2] As stressed by Goldin (2010), assuming that D is fixed in moving from (1) to (2) such that $D/365=4$ implies that the tax specified in (2a) and (2b) is based on average profit per day rather than actual profit. This creates some anomalies for companies whose initial period is not four years, as the tax due will not change even if actual profits change as long as profits per day are unchanged. Goldin provides some numerical examples illustrating this point; for example, he shows that total profits can increase (for a firm with an initial period greater than four years) but tax can fall if profits per day decline. Because all but one of the 32 privatized firms that paid tax under the Windfall Tax had initial periods that either equaled or closely approximated four years, the tax calculated using (2a) of (2b) are a very close approximation to the tax that would be due under a windfall profits tax imposed on actual profits, analogous to that specified in (2b). For such firms, it is reasonable to argue that the Windfall Tax had the "predominant character" of an income tax. However, as will be discussed below, this is not the case for Railtrack, which had an initial period of only 316 days, but was treated as an "outlier" that could be ignored for the purpose of determining creditability.

'substance' of this tax." (emphasis in original) In other words, the Windfall Tax was levied on the difference in two values, not excess profits, and therefore was not creditable.[3] Crucially, the government did not question PPL's position that an initial period of four years was the normal circumstances in which the tax was imposed, agreeing that "outliers" – taxpayers with unusual circumstances -- could be ignored. In other words, it conceded that equation (1) could be rewritten as equation (2).

2.5 The circuit court split

In two cases involving identical issues, the Tax Court found for the taxpayers. When the government appealed the Tax Court decisions, one circuit court of appeals found for the government (in *PPL)* and one for the taxpayer (in *Entergy*) – both in unanimous decisions. PPL appealed the former decision to the Supreme Court and the government appealed the latter. The Supreme Court agreed to hear the cases to resolve this circuit court split and thereby prevent the untenable situation in which creditability would depend on which circuit court's ruling applied to a particular taxpayer. The Supreme Court's decision in favor of PPL meant that the government lost its appeal in the Entergy case.

3. The Supreme Court Decision

Before turning to the Supreme Court's decision, it will be useful to summarize the position taken in the amicus brief prepared by Alstott et al. (2013).

3.1 The Alstott et al. amicus brief

Adding emphasis that does not appear in the regulations, Alstott et al. stated in their amicus brief, "Treasury regulations under § 901 are clear: With exceptions not relevant here, 'a tax either is or is not an income tax in its entirety for *all* persons subject to the tax.'" (Brief of Alstott et al. in support of respondent, at 17.) In other words, to be creditable, a tax must be an income tax, as defined by the regulations, for all taxpayers. (It is unclear how the professors who prepared the brief would square this unequivocal view with the regulation's clear reference to only "the normal circumstances in which it [the tax] applies.") This view implies that "outliers" cannot be ignored in determining whether a tax is creditable. For Railtrack, with its initial period of only 316 days, the effective tax rate on "excess profits" would be 239.1 percent, rather than 51.75 percent, as in equations (2a) and (2b). The brief concluded that, because income tax rates do not exceed 100 percent, the Windfall Tax was not an income tax and thus was not creditable.

3.2 The Court's opinion

The Court had no difficulty rejecting the government's position that form, not substance, should determine the creditability of a tax. Its opinion states:

> The Commissioner argues that any algebraic rearrangement is improper, asserting that U. S. courts must take the foreign tax rate as written and accept whatever tax base the foreign tax purports to adopt. As a result, the Commissioner claims that

[3] The government also argued that the realization, gross receipts, and net income standards for determining creditability were not met. These arguments, which the Court rejected, are not considered further. In the form presented in *PPL*, they have no relevance for the questions considered in the remainder of this article.

> the analysis begins and ends with the Labour government's choice to characterize its tax base as the difference between "profit making value" and flotation value. Such a rigid construction is unwarranted. It cannot be squared with the black-letter principle that "tax law deals in economic realities, not legal abstractions." Given the artificiality of the U. K.'s method of calculating purported "value," we follow substance over form and recognize that the windfall tax is nothing more than a tax on actual profits above a threshold.[4] (internal citations omitted)

In reaching its decision, the Court rejected the emphasis on "all" added by Alstott et al. in quoting the regulations. It stated (p. 5), "... a foreign tax that operates as an income, war profits, or excess profits tax *in most instances* is creditable, even if it may affect a handful of taxpayers differently. Creditability is an all or nothing proposition." (emphasis added) Although the Court mentioned (p. 14, note 6) the Alstott et al. argument that the two outliers changed the predominant character of the Windfall Tax, the Court did not take it into account, noting that the government had not preserved this argument in its briefing before either the appeals court or the Supreme Court.

3.3 Justice Sotomayor's concurring opinion

Justice Sotomayor found the Alstott et al. argument "persuasive," but did not base her analysis on it because the government had agreed that outliers should be disregarded in determining the "predominant character" of a tax. She observed (p. 2), in remarks that seem relevant for the analysis in the remainder of this article, "The challenge in applying predominant character analysis will sometimes lie in determining whether and how such outlier taxpayers affect the characterization of a given tax."

3.4 Unanswered questions

The Supreme Court answered unequivocally the most important question raised by *PPL*: whether the IRS can base the creditability of a tax on its form. But it left important questions unanswered, because the government did not raise them. In particular, how does one determine the "predominant character" of a tax? Do the words "normal circumstances in which it applies" mean what they seem to mean, or can outliers make a tax non-creditable, as argued by Alstott et al.? What distinguishes normal from abnormal circumstances?

Another question that did not arise in *PPL* is important for present purposes. The regulations state:

> A foreign tax law that does not permit recovery of one or more significant costs or expenses, but that provides allowances that effectively compensate for nonrecovery of such significant costs or expenses, is considered to permit recovery of such costs or expenses.

The regulations do not explain how to determine whether allowances "effectively compensate for

[4] *PPL Corp. et al, v. Commissioner of Internal Revenue*, *supra* n. 1, at 10-11. The Court noted (*id*., at 8) that "the Labour government's conception of 'profit-making value' as a backward-looking analysis of historic profits is not a recognized valuation method; instead, it is a fictitious value calculated using an imputed price-to-earnings ratio."

nonrecovery" of significant costs or expenses. (The UK Petroleum Revenue Tax discussed below provides an example of such compensation.) But if the timing of allowed and disallowed deductions differs, the only method of evaluation that is consistent with the principle cited by the Court that "tax law deals in economic realities ..." is to examine the present values of such deductions. That is the approach taken in the next section

4. The creditability of cash-flow taxes

Whether cash-flow taxes would be eligible for the FTC offered by the United States has long been subject to uncertainty. McLure and Zodrow have encountered this issue in several countries, including Bolivia, Colombia, Jamaica, Kazakhstan, and Russia.[5] Most significantly for present purposes, in 1994, presaging the government's position in *PPL*, a representative of the US Internal Revenue Service (IRS) told McLure and Zodrow – and the president of Bolivia at the time, Gonzalo Sánchez de Lozada – that a cash-flow tax the president was seriously considering would not be creditable because, at the IRS, "we look at form, not substance".[6] The concern that the proposed cash-flow tax would not be creditable in the US was sufficiently great that it doomed the proposal – even though many US firms, including potential investors in Bolivia, already had more FTCs than they could use (they were in an excess "FTC position"), so that additional credits would have been of relatively little value.

Even though many US firms still have excess credits, in many cases creditability remains a critical issue – primarily for capital-importing countries in which the predominant source of foreign direct investment is, at least potentially, US multinationals that are not in an excess foreign tax credit position.[7] The PPL decision may open the way for such countries to introduce some forms of cash-flow taxation as a general corporate tax, as they may be much less uncertain about whether the tax will be creditable and less fearful that it will not be.[8] (The PPL decision reinforces the impression gained from the fact that the IRS has not yet ruled that a cash-flow-based minimum tax enacted in Mexico in 2008 is not creditable.) Given the manifest economic and simplification benefits of such taxes,[9] this could produce an important gain in world welfare. Moreover, given the paucity of "real world" cash-flow taxes, other than sector-specific resource rent taxes based on cash flows enacted in the resource sectors of various countries, other countries considering adopting similar taxes – including the United States, which is the source of many such reform proposals – could learn from the experience of early adopters. This section

[5] McLure (2013) provides an overview of this experience; for a more detailed review, see McLure and Zodrow (2007).

[6] This episode is discussed in McLure and Zodrow (1996, 1998).

[7] A separate issue is whether a cash-flow tax would also be deemed non-creditable by other capital-exporting countries with FTC systems, compounding the problems associated with non-creditability in the US. This issue is rapidly becoming moot, however, as many capital-exporting countries, most prominently Japan and the United Kingdom, have in recent years moved to "territorial" tax systems under which active foreign-source income is largely exempt from domestic tax and foreign taxes are no longer credited against home tax liabilities.

[8] Arguably the US government should not oppose creditability for cash-flow taxes, since the amount of potentially creditable tax paid under a cash-flow tax will generally be significantly less than under an income tax levied at the same rate.

[9] These advantages are discussed in detail by Zodrow and McLure (1991), who focus on the benefits of consumption-based taxation in a developing country context.

considers whether, under the statute and the regulations interpreting them and in light of the Court's ruling in *PPL* emphasizing substance over form in deciding issues of creditability, various types of cash-flow taxes should be creditable in the United States.

4.1 Background on the economic substance of various business taxes

4.1.1 Overview

Before discussing the creditability of cash-flow taxes, it may be useful to provide a brief overview of the basic properties of both income-based and consumption-based business taxes.[10] The key similarities and differences between the two approaches lie in their treatment of the normal and above-normal returns to both equity-financed and debt-financed investment.[11] The two forms of consumption-based taxation are similar in that they both tax all above-normal returns or economic rents and exempt from tax the normal return to debt-financed investment; they are thus also often described as rent-based taxes. (Both types of returns may or may not be taxed under the personal income tax; we focus only on business-level taxation in this discussion.) The essential difference between the two forms of taxation lies in their treatment of the normal return to equity-financed investment, which is taxed under an income tax but is effectively exempt under a consumption-based business tax. Since the latter is thus a tax on economic rents, it can be viewed as an "excess profits" tax that taxes all above-normal returns and exempts all normal returns – identical in substance if not in form to the more conventional excess profits taxes described above. These propositions can be illustrated with an analysis that calculates the costs of capital and the marginal effective tax rates (METRs) under the various taxes.[12]

An METR analysis is useful for this purpose because it calculates the effective tax rate applied to a "marginal" investment that just covers the opportunity costs of its investors – that is, the normal return to investment – and thus determines the equilibrium level of investment in the economy.[13] The calculation takes into account not only the statutory tax rate but also the details

---

[10] See Zodrow (2007) and Auerbach (2008) for further discussion of the differences between income-based and consumption-based taxes.

[11] The normal return refers to the average economy-wide risk-free rate of return to investment. We abstract from uncertainty in this paper. Note, however, that both income-based and consumption-based business taxes tax the returns to risk taking and that, depending on the provisions dealing with losses, taxpayers and governments share in the losses to risky investments. The primary difference under the two approaches is that the government also effectively shares in the cost of an investment (i.e., it acts as a silent partner in the investment with an ownership share equal to the tax rate) under rent-based business taxes that allow expensing and full offset of losses, for example, by carrying forward losses at a factor equal to one plus the time value of money (the riskless bond rate); by comparison, such cost sharing does not occur under an income tax. When the government fully shares in both gains and losses incurred, the consumption-based tax provides an implicit deduction for the cost of risk (Mintz 1995*)*.

[12] In the calculations below, we adopt the simplest METR approach that illustrates the essential differences between income-based and rent-based taxes; for more thorough discussions, see Devereux and Griffith (2003) and Klemm (2008).

[13] Note, however, that the location decisions of firms that earn above normal rents are also affected by the statutory tax rate, since that is the rate that is generally applied to above normal

of the system of business taxation, including deductions for investment in capital assets and inventory, investment tax credits, and the treatment of various forms of finance, etc. An METR of zero implies that the deductions allowed under the tax system are sufficiently large that the normal return to investment is exempt from tax while above-normal returns are subject to tax at the statutory rate (since they are not offset by any deductions). By comparison, an METR equal to the statutory rate implies that both above-normal and normal returns are fully taxed at the statutory rate.

Since the details of METR analysis are well known (Boadway, Bruce, and Mintz, 1984; King and Fullerton, 1984), we only outline the approach for depreciable capital assets here. Consider an investment that costs *q*, lasts forever but depreciates exponentially at rate δ, and has a marginal revenue product *c*. We also assume there is no inflation so that nominal and real returns on assets are the same. The firm finances a fraction *b* of the investment using debt at an interest rate *i* (the return to bond holders) and finances the remainder *(1-b)* with equity at a cost of ρ (the return paid as dividends or capital gains to shareholders). The firm faces a corporate income tax with a statutory tax rate τ; the tax system allows deductions for economic depreciation but has no additional investment incentives. (With no inflation, tax and economic depreciation are identical for depreciation at rate δ.) The treatment of debt and equity finance under the corporate tax system is specified by two parameters: $\varphi_D = 1$ ($\varphi_D = 0$) if interest expense is (not) deductible, and $\varphi_E = 1$ ($\varphi_E = 0$) if the opportunity cost of equity capital is (not) deductible. The discount rate for the firm, which reflects a weighted average of its costs of debt and equity finance taking into account whether such costs are deductible, is thus

$$r = b(1-\varphi_B\tau)i + (1-b)(1-\varphi_E\tau)\rho \ . \tag{3}$$

4.1.2 The income tax

Consider first a traditional or "classical" income tax that allows deductions for economic depreciation and for interest expense ($\varphi_D = 1$) but not for the cost of equity ($\varphi_E = 0$), which implies a discount rate of $r = b(1-\tau)i + (1-b)\rho$. For a marginal investment made at time *t=0*, the cost of the investment must equal the present value of after-tax returns over the (infinite) lifetime of the investment, or

$$q = (1-\tau)\int_0^\infty ce^{-\delta t}e^{-rt}dt + \tau\int_0^\infty \delta q e^{-\delta t}e^{-rt}dt \ , \tag{4}$$

that is, the cost of the asset must equal the present value of after-tax gross receipts net of the value of depreciation deductions. Solving for the cost of capital $c/q - \delta$ (the before-tax return to the investment net of depreciation) yields

$$\frac{c}{q} - \delta = \frac{r}{1-\tau} = \frac{b(1-\tau)i + (1-b)\rho}{1-\tau} \ , \tag{5}$$

---

profits (Devereux and Griffith, 1998, 2003). Given the location decision, the METR is then the key factor in determining the level of investment.

In the absence of taxes ($\tau = 0$), this expression reduces to $c/q - \delta = bi + (1-b)\rho$, which simply states that the marginal return on a dollar of investment must just cover its opportunity costs. With the income tax, consider first the case of all debt finance (*b=1*). In this case, $c/q - \delta = i$, which implies that the cost of capital is unchanged for a fully debt-financed investment under the income tax, since all of the returns on the marginal investment are paid out as deductible interest expense. This in turn implies that the METR, defined as the difference between the before-tax return net of depreciation ($c/q - \delta = i$) and the amount paid to investors (*i*), divided by the former, is zero: an income-based corporate tax does not impose a burden on the marginal debt-financed investment. By comparison, for a fully equity-financed investment (*b=0*), (5) becomes $c/q - \delta = \rho/(1-\tau)$. The cost of capital is thus increased by a factor of $1/(1-\tau)$, and the METR for a fully equity-financed investment under the income is

$$METR_E^{IT} = \frac{\rho/(1-\tau) - \rho}{\rho/(1-\tau)} = \tau, \tag{6}$$

that is, the METR equals the statutory corporate income tax rate. Thus, as noted above, a traditional income tax subjects to full taxation all above-normal returns and the normal return to equity-financed investment, while exempting the normal return to debt-financed investment.

4.1.3 The allowance for corporate equity (ACE) tax

The allowance for corporate equity (ACE) tax was developed simultaneously by the Institute for Fiscal Studies (1991) and by a German group headed by Manfred Rose (Rose, 1994, 1999; Rose and Wiswesser, 1998), which first implemented the tax in Croatia as an "interest-adjusted profits tax." It was later adopted in whole or part in several countries, including Belgium, Brazil, and Italy (Genser and Reutter 2007). The ACE tax is basically a traditional income tax, complete with deductions for depreciation[14] and interest expense, supplemented by an additional deduction for the opportunity cost of corporate equity capital; the latter is equal to the product of what is sometimes termed the "protective" rate of interest – which corresponds to the normal return to capital above – and the value of a firm's equity capital. The ACE thus treats equity and debt finance on equal terms by allowing a deduction for the opportunity cost of each form of finance.

The ACE is easily incorporated into our cost of capital/METR analysis, since it implies that the return to equity investors on the marginal investment is fully deductible ($\varphi_E = 1$), while interest expense continues to be deductible ($\varphi_D = 1$). Everything else remains the same as under the income tax; in particular, equity returns in excess of those earned on a marginal investment are taxed. In this case, the firm's discount rate becomes $r = (1-\tau)[bi + (1-b)\rho]$. An analogous analysis implies that the ACE has no effect on the cost of capital ($c/q - \delta = i$ for debt finance

[14] One difference between the two taxes is that under the income tax depreciation deductions are typically based on historical values regardless of when they are used, while under the ACE tax losses are carried forward with interest so that any unused deductions are effectively adjusted for the time value of money.

and $c/q - \delta = \rho$ for equity finance), and the METRs on both debt-financed and equity-financed investments are zero. Despite its superficial resemblance to an income tax, the ACE is thus a rent-based business tax: it taxes all above-normal returns at the statutory rate and exempts the normal return on both debt-financed and equity-financed investment, and can thus be viewed as a tax on economic rents or an excess profits tax.

4.1.4 The R-Base Cash-flow Tax

We now turn to the cash-flow taxes that are the focus of our analysis. Cash-flow taxes are distinguished by the allowance of immediate expensing for all purchases of capital assets, rather than deductions for depreciation and inventory accounting (loosely speaking, the tax base is cash flowing in and out of the business). The simplest form of cash-flow taxation is, using the terminology of the Meade Report (Institute for Fiscal Studies 1978), an R-base cash-flow tax, under which the tax base includes only the cash flow of "real" transactions and ignores borrowing and lending (and thus does not allow deductions for interest expense). The best known tax reform proposals that include R-Base cash-flow business taxes are the flat tax advocated by Hall and Rabushka (1995) and its graduated-rate relative, the X-Tax favored by Bradford (1986, 2005). Since neither interest expense nor the opportunity cost of equity capital are deductible, the firm's discount rate is the same as in the no-tax case, $r = [bi + (1-b)\rho]$. Thus, with expensing under an R-Base cash-flow tax, (4) becomes

$$q = (1-\tau)\int_0^\infty ce^{-\delta t}e^{-rt}dt + \tau q \ , \tag{7}$$

and the cost of capital is

$$\frac{c}{q} - \delta = r \ , \tag{8}$$

indicating that, as in the case of the ACE tax, the R-Base cash-flow tax does not affect the cost of capital, resulting in METRs of zero for both debt-financed and equity-financed investment. The intuition underlying these results is that (1) for debt finance, the benefit of allowing expensing rather than deductions for depreciation offsets the cost of not allowing interest deductions, and results in the same METR of zero that occurs under both the income tax and the ACE, and (2) for equity finance, the same logic applies with respect to a comparison with the ACE (expensing compensates for the lack of a deduction for the opportunity cost of equity) and, in comparison to the income tax, the relative benefit of expensing is sufficiently large to reduce the METR to zero under the R-Base cash-flow tax as compared to an METR equal to the statutory rate under the income tax.

4.1.5 The R+F-Base Cash-flow Tax

The Meade Report also discusses the option of a cash-flow tax on both real and financial transactions, which it terms the "R+F-Base" cash-flow tax; well known proposals that incorporate an R+F-Base business tax are the "consumed income tax" discussed by the US

Treasury (1977) and the "lifetime income tax" proposed by Aaron and Galper (1985).[15] This tax is identical to the R-Base cash-flow tax, except that (1) the proceeds of borrowing and repayments of interest and principal associated with previous loans issued are included in the tax base, and (2) interest expense and repayments of loan principal are deductible, as are amounts lent. These exceptions, however, have no effect on the tax base in present value terms, so that the cost of capital (r) and the METRs on both debt-financed and equity-financed investment (zero) are the same as in the case of the R-Base cash-flow tax.

To see this, consider the case of borrowing to finance an investment. Suppose that the fraction of the value of an asset financed with debt is constant at b over the life of the asset, which requires that the loan be repaid at the rate of depreciation, δ. In this case, the net effect on the cash-flow tax base of the specified treatment of loans – in present value terms, assuming that the firm discounts all cash flows related to the loan at the interest rate i[16] – is

$$bq - \int_0^\infty \delta bqe^{-\delta t}e^{-it}dt - \int_0^\infty ibqe^{-\delta t}e^{-it}dt \,, \tag{9}$$

where the first term reflects the initial inclusion of the proceeds of the loan in the cash-flow tax base, and the second (third) term reflects the present value of the deductions for the repayment of principal (interest expense) over the life of the investment. Since this expression reduces to zero

$$bq - \frac{\delta bq}{\delta + i} - \frac{ibq}{\delta + i} = 0 \,, \tag{10}$$

the treatment of loans under the R+F-base tax has no impact on cash flow in present value terms, so that the R-Base and R+F-Base are equivalent in terms of having no effect on the equilibrium cost of capital (r), which in turn implies that the METRs on debt-financed or equity-financed investment are zero under both regimes – as they are under the ACE tax.

These results on the fundamental properties of a business income tax and the three forms of consumption-based business taxes are summarized in Table 1.

4.2 Implications of the analysis for the creditability of the various taxes

4.2.1 The ACE tax

Creditability has never been an issue for the various ACE taxes enacted in several countries, including Croatia, Italy, Brazil, Belgium (Genser and Reutter, 2007). Because the ACE tax includes both deductions for depreciation and interest expense, it has always been deemed to have the predominant character of an income tax, clearly satisfying the realization, gross receipts, and net income criteria. Although one could easily argue that the additional

[15] A third cash-flow tax discussed by the Meade Report (Institute for Fiscal Studies 1991), the "S-Base" cash-flow tax which is assessed on only on net distributions to shareholders, is equivalent to the R+F-Base Tax.

[16] Since the deductibility of interest acts to offset in part the inclusion of the proceeds of the loan in the tax base, the appropriate discount rate for debt finance is the before-tax interest rate and, assuming that the firm equalizes the costs of debt and equity finance, $i = \rho$, so $r = i$.

deduction for the opportunity cost of equity under the ACE results in a measure of net income that is too small, the statute is written and has been interpreted as requiring only that deductions be sufficiently large to avoid imposing a tax on gross income. For example, the UK corporate income tax in the mid-1980s allowed expensing, but the creditability of the UK tax was never at issue. This and the granting of creditability to various ACE taxes implies that the IRS has already – on numerous occasions – deemed creditable a consumption-based tax that imposes tax only on above-normal returns and exempts normal returns.[17]

4.2.2 Resource Rent Taxes

Numerous countries, including Australia, Canada, Norway, and the UK, utilize cash flow-based taxes, often referred to as "resource rent taxes," to assess tax on the "net profit" or "economic rents" earned by resource companies, that is, returns in excess of a threshold rate of return, where investments are measured on a cash flow basis.[18] These taxes have been deemed creditable in several cases but not always. In *Inland Steel Co. v. United States,*[19] the Ontario Mining Tax on mining profits, defined gross of interest expense, depletion and royalties, was found to be not creditable since the tax did not reach "net gain". However, in *Texasgulf Inc. v. Comm'r,*[20] the same Ontario Mining Tax was found to be creditable since its allowances for processing costs were in excess of other disallowed expenses. The Tax Court also ruled in *Phillips Petroleum Co. v. Commissioner* in 1993 that the Norwegian supplementary cash-flow tax on offshore petroleum was creditable. Similarly, the UK Petroleum Revenue Tax (PRT), which is a cash flow based tax that allows deductions for capital costs and also allows an "uplift allowance" equal to 35 percent of most capital expenditures that was deemed to compensate for the PRT's lack of interest deductions, was deemed creditable in *Exxon Corporation vs. Commissioner*.[21] More generally, in a recent survey of resource rent taxes, Land (2010, p. 257) concludes that "Creditability issues no longer appear to be a factor that would inhibit the use of a [sic] conventionally designed resource rent taxes in host countries, although it is a matter to be examined with regard to different home tax jurisdictions and any double taxation agreement in place or under negotiation …" Although these resource taxes are sector-specific rather than generally applicable cash flow taxes, they provide additional examples of cash-flow based rent-taxes that the IRS has deemed creditable.

4.2.3 Creditability of the R-Base cash-flow tax

In our view, an R-Base cash-flow tax should clearly be a creditable tax. Three related – and individually compelling – arguments support this position.

First, even though the R-Base cash-flow tax does not satisfy the net income standard because it disallows a deduction for interest expense, the analysis above demonstrates clearly that allowing expensing rather than deductions for economic depreciation more than

[17] As noted above, the IRS has also not deemed the cash flow minimum tax utilized in Mexico to be non-creditable.

[18] Chen and Mintz (2013) discuss aspects of royalty systems in Australia, Canada, Norway and United Kingdom that resemble features of cash flow taxation.

[19] *Inland Steel Co. v. United States*, 677 F.2d 72 (Ct. Cl. 1982).

[20] *Texasgulf Inc. v. Comm'r*, 172 F.3d 209 (2nd Cir. 1999).

[21] For further details on the creditability of the UK PRT and other broadly similar taxes, see Gesualdi (2013).

compensates for the lack of recovery of interest expense. (The METRs are zero for debt-financed investment for both income and R-Base taxes, and the METR of zero for equity-financed investment under the R-Base tax is lower than the METR under the income tax, which equals the statutory rate.) Thus, the fact that, for purposes of satisfying the net income requirement, the regulations allow the absence of the deductibility for an expense (interest expense) to be offset by another compensating deduction (the excess of expensing over deductions for depreciation), implies the R-Base cash-flow tax should be creditable.

Second, under the normal circumstance in which an R-Base cash-flow tax is applied it is economically equivalent to the ACE tax. Since the IRS has deemed numerous version of the ACE tax to be creditable, the emphasis of the Supreme Court in the *PPL* decision on economic substance over legislative form implies that the tax should be creditable: even though the R-Base tax may differ in form from the ACE tax, the economic equivalence of the two taxes implies that if one is creditable, both should be creditable. (The same logic arguably applies for the numerous sector-specific resource rent taxes that have also been deemed to be creditable.)

Third, the analysis above demonstrates that the R-Base cash-flow tax, like the ACE tax, is a consumption-based tax that taxes above-normal returns while exempting normal returns for both debt-financed and equity-financed investments. It is thus effectively a tax on above-normal returns, that is, on excess profits, and as such should be a creditable tax under the clear meaning of IRC Section 902. Such an interpretation would clearly be consistent with the logic of the *PPL* decision.[22]

4.2.4 Creditability of the R+F-Base cash-flow tax

The arguments for creditability are less transparent in the case of the R+F-Base cash-flow tax and, in comparison to the R-Base tax, the R+F-Base is considerably less likely to be deemed

[22] Grubert (2005) argues that the importance of the creditability of cash flow taxes is often overstated because creditability is not likely to affect decisions regarding investments earning above normal returns or economic rents. His argument has two components. First, for investments earning completely immobile location-specific rents (e.g., due to access to local markets or the use of local resources), the standard theory of the taxation of monopoly profits implies that investment decisions will not be affected as long as the combined tax rate is less than 100 percent. Second, for investments earning highly mobile firm-specific rents (e.g., due to intellectual property or other unique intangible assets), Grubert argues that all of the rents should be paid to the parent firm as deductible royalties, so that no tax will be collected by the source country and again investment decisions will not be distorted. These arguments are open to debate, since few rents are completely immobile and all rents are not likely to be paid out as royalties – certainly not to the relatively high-tax United States. Further, as shown by Leechor and Mintz (1993), a cash flow tax in a capital importing country is not neutral if the capital exporting country uses a deferral approach to tax corporate income. Specifically, the investment and financing decisions of the subsidiary will affect the tax imposed by the capital exporting country on repatriated dividends; it will thus distort decisions regarding the allocation of capital across the capital exporting and capital importing countries, thereby undermining the validity of the Grubert argument. More importantly, all three of our arguments presented above, which are constructed within the context of the determination of creditability under current law, are not affected by the Grubert analysis, which is conducted in the context of a redesign of the international tax system that emphasizes minimizing behavioral distortions, including those regarding the international allocation of investment.

creditable by the IRS. Nevertheless, in our view, this consumption-based tax should also be a creditable tax.

Note first that the second and third arguments in the previous section apply with full force to the R+F-Base cash-flow tax. Since the tax is economically equivalent to the R-Base tax and thus to the creditable ACE tax, the Court's emphasis on substance over form implies that the R+F-Base tax should also be creditable. And, since the R+F-Base tax is thus also a tax on economic rents or above-normal returns, it should be creditable as an excess profits tax.

The critical problem for the creditability of the R+F-Base tax is that the inclusion of both the proceeds of net loans (loans net of financial asset purchases) and repayments of loan principal (net of financial asset sales) in the cash-flow tax base implies that it does not satisfy the realization requirement for creditability since these cash-flow items are not treated as realization events under a conventional income tax. However, we would argue that this should not necessarily be dispositive in determining the creditability of the tax. Although the form of the tax is clearly problematical given existing regulations, the analysis above demonstrates that its substance is not. In particular, the inclusion of loan proceeds in the tax base is fully offset in present value terms by subsequent deductions for repayments of principal and interest, and the inclusion of repayments of principal (and interest) in the tax base is fully offset in present value terms by an earlier deduction for lending. Thus, at least in present value terms (although not in annual terms), these inclusions do not violate the realization requirement over the life of a loan. Indeed, as shown above, if all of the features of the tax are taken into account, the tax base is smaller than the typical tax on net income, despite these inclusions that are not normally treated as realization events under the income tax. Moreover, again emphasizing substance over form, one could apply an analog to the "compensating deduction" regulation noted above in the case of the absence of interest deductions under the R-Base tax. That is, although relative to a conventional income tax the tax base under the R+F-Base is too large due to the inclusion of the proceeds of borrowing, that is compensated for by subsequent additional deductions for the repayment of principal (not allowed under an income tax) and interest. Similarly, the inclusion of repayments of principal is offset by earlier deductions for lending (also not allowed under an income tax). Accordingly – although admittedly inconsistent with the current form of the regulations – the inclusion of these two items in principle should not be dispositive in determining the creditability of the tax. Although these positions may strain the Court's emphasis on substance over form in the *PPL* case, the arguments are compelling from the perspective of the economic substance of the tax.

It could also perhaps be argued that, if a sufficiently small amount of investment is debt-financed, the inclusion of the proceeds of borrowing and the repayment of debt under the R+F-Base cash-flow tax would not cause the realization requirement to be violated, making the predominant character of the R+F-Base tax that of an income tax. This is what McLure and Zodrow found in Bolivia in 1994, where relatively low levels of debt implied that, for the nation's largest taxpayers, the base of an R+F-Base cash-flow tax would have been only three to six percent larger than that of an income tax.[23] It would, however, be difficult to know what are the "normal circumstances" in which a tax applies and to identify outliers, especially since reliance on debt – and thus presumably creditability – could change over time. Worse, an R+F-Base tax structured in a given way might seem to satisfy the realization test in one country, but not in another, because of differences in reliance on debt. This seems to be an untenable state of

[23] McLure and Zodrow (1998, pp. 10-11).

affairs. It seems better to base creditability on principles that apply universally, such as the fact that expensing compensates for the lack of an interest deduction under R-based cash-flow tax – and on the analogous present-value analysis of the R+F Base tax presented above, than on empirical relations that are not the same for all taxpayers or in all countries and will change over time.

5. A brief commentary on two points raised by Alstott et al.

Alstott et al. (2013, p. 3) assert that acceptance of the arguments made by PPL would in effect "extend the foreign tax credit well beyond its statutory scope of income and excess profits taxes to a whole host of taxes on value and perhaps even to consumption taxes, none of which have ever been creditable." We examine this contention in this section.

5.1 The lack of international experience with generally applicable cash-flow taxes

In our view, the Alstott et al. assertion that direct consumption-based taxes have never been creditable, seems disingenuous for two reasons. First, as discussed above, the ACE taxes enacted by numerous countries, while not based on cash flow, are consumption-based taxes that tax above-normal returns at the statutory rate and exempt normal returns; all of these taxes have been deemed creditable by the IRS. Also, as noted above, cash flow based taxes on resource rents in many countries, including Australia, Canada, Norway, and the UK, have been deemed creditable.

Second, opportunities for determining the creditability of generally applicable cash-flow consumption-based business taxes have been virtually non-existent, as no country that relies heavily on investment from the United States and has been well-advised has ever introduced such a cash-flow consumption-based business tax, given the uncertainty that the tax might not be creditable (and, as we now know, the likelihood that the IRS would deny creditability). It is, of course, possible – or even likely in light of the PPL decision – that a taxpayer with expert counsel making the kind of arguments based on economic substance presented above could prevail, at least for certain types of cash-flow taxes. But the price that both countries and taxpayers would be forced to "pay to play" – the risk of double taxation because of ineligibility for the FTC – has always been deemed to be too high. For example, in one important oil-producing country, a major oil company headquartered in the United States told one of the authors (McLure) to "back off" from proposing a cash-flow tax, because they did not wish to take the risk of paying billions of dollars in tax that might not be creditable. Indeed, forging ahead to introduce a cash-flow tax that might not be creditable could have a chilling effect on investment from the United States, so it is not surprising that prior to the *PPL* decision virtually all countries had been unwilling to do so.

5.2 Creditability of taxes on value

Although we obviously agree that an implication of the *PPL* decision is that consumption-based cash-flow taxes may – and should – become creditable, the Alstott et al. brief also suggests that, since any tax on value can be approximated as a tax on income, the decision may have adverse revenue consequences by facilitating the conversion of non-creditable value-based taxes into creditable income or excess profits taxes. Although this is a possibility, the converse is true as well – one could approximate an income tax or an excess profits tax as a

value-based tax and make it non-creditable. Given this inherent ambiguity,[24] the key factor in determining whether any tax should be creditable would, at least in the first instance, seem to have to be simply whether it is in actuality based on income, excess profits, or value. The fact that the Windfall Tax was based on profits rather than value thus clearly suggests that the Court was correct it determining that it should be creditable.

Moreover, even if interpreted as an approximation to a tax on value, the Windfall Tax clearly did not accurately measure the value differential it claimed to capture – the difference in value attributable to lax regulation over the initial four-year period following privatization. Instead, because it applied a fixed price-equity ratio to average earnings over the period of lax regulation, the Windfall Tax formula approximated the change in value that would have occurred had the lax regulations counterfactually remained in place forever.[25] It is thus exceedingly difficult to argue that the base of the Windfall Tax even approximately captured the undervaluation due to lax regulation. By comparison, as shown above, it is straightforward to demonstrate that, with the appropriate rate adjustment, the Windfall Tax formula can be interpreted as a reasonable approximation to an excess profits tax. Thus the Court's decision to treat the Windfall Tax as a creditable excess profits tax is eminently reasonable. By comparison, the fact that even if interpreted as a valuation formula the Windfall Tax did not accurately measure the value differential it claimed to capture makes it unclear what implications, if any, the *PPL* decision might have for the possibility of the conversion of non-creditable taxes on value to creditable income or excess profits taxes.

6. Concluding remarks

The Supreme Court's resounding rejection of the doctrine of form over substance in its *PPL* decision is consistent with a long legal tradition supporting the importance of the economic substance of business transactions over their form. The decision is thus inconsistent with claims that creditability should be denied for cash-flow business taxes simply because their form is not identical to that of a conventional income tax, and indeed suggests that at least some forms of cash-flow taxation may be creditable. Indeed, in this paper we argue that the PPL decision suggests that the two most common forms of cash flow business taxation — the R-Base version, which ignores loans and thus does not allow deductions for interest expense, and the R+F-base version, which includes the proceeds of loans in the tax base and allows deductions for repayment of both interest and principal — should be creditable against the domestic tax liability of US multinationals. Adoption of this position would in turn imply that the US IRS could no longer effectively act as a unilateral GATT for taxes; that is, the IRS could no longer make it unattractive, or at least extremely risky, for foreign governments who rely on investment from

[24] Indeed, Viard (2013) argues that the ambiguity that inevitably arises by arbitrarily allowing creditability for income taxes but not for asset taxes is a fatal flaw of the foreign tax credit system, which he argues should be replaced by an exemption system or a preferential rate for foreign source income – an issue that we do not address here, but which is discussed comprehensively by Grubert and Altshuler (2013).

[25] In the appendix, we construct a simple example in which the Windfall Tax formula results in a tax base that is too large, relative to an accurate measure of the difference in value attributable to lax regulation over the initial four-year period following privatization, by a factor of roughly three.

US multinationals to adopt business cash flow taxes simply because they do not fit the mold of conventional income taxes.

REFERENCES

Aaron, H.J. and Galper, H. (1985). *Assessing tax reform.* Washington, DC: Brookings Institution Press.

Alstott, A., Chirlestein, M., Desai, M., Graetz, M., Halperin, D., Kane, M., Lokken, L., Peroni, R., and Warren, A. (2013). Amici curiae brief filed (January 18, 2013) in support of respondent, PPL Corp and Subsidiaries v. Commissioner of Internal Revenue, Supreme Court of the United States.

Altshuler, R., Bird, R.M, Gillis, M., Harberger, A.C., Hufbauer, G.C., McLure, C.E. Jr., Mintz, J., and Zodrow, G.R., (2012). Amici curiae brief filed (August 8, 2012) in support of petitioners, PPL Corp and Subsidiaries v. Commissioner of Internal Revenue, Supreme Court of the United States.

Auerbach, A.J. (2008). Tax reform in the twenty-first century. In J.W. Diamond & G.R Zodrow (Eds.), *Fundamental tax reform: Issues, choices and implications* (pp. 27-59). Cambridge MA: MIT Press.

Boadway, R.W., Bruce, N. & Mintz, J. M. (1984). Taxation, inflation, and the marginal tax rate on capital for the Canadian mining industry. *Canadian Journal of Economics* 17, 62-79.

Bradford, D.F. (1986). *Untangling the income tax*. Cambridge, MA: Harvard University Press.

Bradford, D.F. (2005). A tax system for the twenty-first century. In A.J. Auerbach & K.A. Hassett (Eds.), *Towards fundamental tax reform*. Washington: American Enterprise Institution.

Devereux, M.P. & R. Griffith, 1998.Taxes and the location of production: Evidence from a panel of U.S. multinationals. *Journal of Public Economics* 68(3), 335-367.

Devereux, M.P. & R. Griffith, 2003. Evaluating tax policy for location decisions. *International Tax and Public Finance* 10(2), 107–126.

Genser, B., & A. Reutter, 2007. Moving toward dual income taxation in Europe. *Finanzarchiv* 63(3), 436–456.

Gesualdi, C. (2013). After *PPL*: How to bring congressional intent back to the foreign tax credit applicability decision. *Tax Notes International,* 71, 355-365.

Goldin, J. (2012). Reconsidering substance over form in PPL. *Tax Notes* 137 (December 12), 1229-1232.

Grubert, H. (2005). Tax credits, source rules, trade, and electronic commerce: Behavioral margins and the design of international tax systems. *Tax Law Review* 58(2), 149-190.

Grubert, H., and R. Altshuler (2013). Fixing the system: An analysis of alternative proposals for the reform of international tax. *National Tax Journa*l 66 (3), 671-712.

Hall, R.E. & Rabushka, A. (1995). *The flat tax*. Stanford, CA. Hoover Institution Press.

Institute for Fiscal Studies (1991). *Equity for companies: A corporation tax for the 1990s*. London: Institute for Fiscal Studies.

Klemm, A. (2007). Effective average tax rates for permanent investment. IMF Working paper WP/08/56. Washington DC: International Monetary Fund.

King, M., & Fullerton, D. (1984). *The taxation of income from capital*. Chicago: University of Chicago Press.

Land, B.C. (2010). Resource rent taxation: Theory and experience. In P. Daniel, M. Keen, and C. McPherson (Eds.), *The taxation of petroleum and minerals: Principles, problems and practice.* New York: Routledge.

Leechor, C., & J. Mintz (1993). "On the taxation of multinational investment when the capital exporting country uses the deferral method." *Journal of Public Economics*, 51,1, 75-96.

McLure, C.E. Jr. (2013). Reflections on the PPL decision and its implications for the creditability of cash-flow taxes. *Tax Notes*, 71, 141-43,

McLure, C.E. Jr. & Zodrow, G.R. (1996). A hybrid consumption-based tax proposed for Bolivia. *International Tax and Public Finance*, 3, 97-112.

McLure, C.E. Jr. & Zodrow, G. R. (1998). The economic case for foreign tax credits for cash flow taxes. *National Tax Journal* 51(1), 1-22.

McLure, C.E. Jr. & Zodrow, G. R. (2007). Consumption-based direct taxes: A guided tour of the amusement park. *Finanzarchiv*, 63, 285-307.

Mintz, J. (1995). "The corporation tax: A survey," *Fiscal Studies*, 16(4), 23-68.

Mintz, J. & Chen, D. (2012). Capturing economic rents through royalties and taxes. *SPP Research Papers,* 5(30), The School of Public Policy, University of Calgary,

Rose, M. (1994). Tax reform in Eastern Europe: Economic concept and administrative feasibility. In O. Gans (Ed.), *Policy reform and structural adjustment: The cases of Malaysia, Hungary, China, Peru and Sri Lanka* (pp. 41-62). Heidelberg: Heidelberg Studies in Applied Economics and Rural Institutions.

Rose, M. (1999). "Recommendations on taxing income for countries in transition to market economies." In M. Rose (Ed.), *Tax reform for countries in transition to market economies* (pp. 23-62). Stuttgart: Lucius and Lucius.

Rose, M. & Wiswesser, R. (1998). Tax reform in transition economies: Experiences from participating in the Croatian tax reform process of the 1990s. In P.B. Sorensen (Ed.), *Public finance in a changing world*. Macmillan Press, Houndmills.

US Treasury (1977). *Blueprints for basic tax reform*. Washington: USGPO.

Viard, A. D. (2103). PPL: Exposing the flaws in the foreign tax credit. *Tax Notes* (April 29), 553-566.

Zodrow, G.R. (2007). Should capital income be subject to consumption-based taxation? In H J. Aaron, L. Burman, and C. E. Steuerle (Eds.), *Taxing capital income*. Washington: Urban Institute Press.

Zodrow, G.R. & McLure, C.E. Jr. (1991). Implementing direct consumption taxes in developing countries. *Tax Law Review*, 46, 405-87.

Table 1. Properties of Income-Based and Consumption-Based Taxes

Transactions and types of returns	Type of Business-Level Tax			
	Income tax	ACE tax	R-Base tax	R+F-Base tax
Treatments of transactions				
Depreciable assets	Depreciation, typically based on historical values	Depreciation, with adjustment for time value of money	Expensed	Expensed
Inventory	Inventory accounting	Inventory accounting, with adjustment for time value of money	Expensed	Expensed
Borrowing/receipt of debt repayment	Ignored	Ignored	Ignored	Taxable
Lending/debt repayment	Ignored	Ignored	Ignored	Deductible
Interest received	Taxable	Taxable	Exempt	Taxable
Interest paid	Deductible	Deductible	Non-deductible	Deductible
Imputed return to equity	None	Deductible	None	None
Marginal effective tax rates (METRs)				
Normal returns: equity	Statutory rate	Zero	Zero	Zero
Normal returns: debt	Zero	Zero	Zero	Zero
Supranormal returns (economic rents): equity	Statutory rate	Statutory rate	Statutory rate	Statutory rate
Supranormal returns (economic rents): debt	Zero	Zero	Zero	Zero

APPENDIX

The argument underlying the Windfall Tax is that profits P^H during an initial four-year period of lax regulation were too high relative to the normal profits P^N that would have been obtained in those years, and in fact were obtained in subsequent years, under more appropriate regulation. Thus, assuming constant profits of both types and a constant interest rate *r*, the value of the firm with lax regulation in the first four years can be approximated by

$$V^H = \left[\frac{P^H}{(1+r)} + \frac{P^H}{(1+r)^2} + \frac{P^H}{(1+r)^3} + \frac{P^H}{(1+r)^4}\right] + \left[\frac{P^N}{(1+r)^5} + ...\right],$$

while the value of the firm, had the appropriate regulations been in place initially, can be approximated by the so-called "flotation value" of the value firm

$$FV = \left[\frac{P^N}{(1+r)} + \frac{P^N}{(1+r)^2} + \frac{P^N}{(1+r)^3} + \frac{P^N}{(1+r)^4}\right] + \left[\frac{P^N}{(1+r)^5} + ...\right] = \frac{P^N}{r}.$$

Thus, if the base of the Windfall Tax were designed to capture the undervaluation due to lax regulation, the base would be the difference between these two expressions. Given the assumption that *r* = 11.1%, or the inverse of the assumed price-earnings ratio of 9, this difference can be approximated as

$$V^H - FV = \left[3P^H + 6P^N\right] - 9P^N = 3(P^H - P^N); \quad r = 0.111, \ 1/r = 9.$$

Instead, by multiplying average earnings during the lax regulation period by the price-earnings ratio, the Windfall Tax formula essentially and counterfactually assumes that lax regulations are maintained indefinitely and the firm is able to earn P^H forever. In terms of this example, the base of the Windfall Tax is approximately

$$B^{WT} = 9P^H - FV = 9(P^H - P^N) = 3(V^H - FV),$$

that is, the base of the Windfall Tax is roughly three times the appropriate level. It is thus exceedingly difficult to argue that the base of the Windfall Tax even approximately captures the undervaluation due to lax regulation.

By comparison, neglecting discounting over the first four years of lax regulation, a reasonable base for an excess profits tax over the four years of lax regulation in this case would be

$$EP = 4(E^H - E^N) = 4\left[E^H - r(E^N / r)\right] = 4\left[E^H - r(FV)\right].$$

The formula for the Windfall Tax is consistent with this formulation, once the statutory tax rate of 23% is multiplied by the factor (9/4) to yield an effective excess profits tax rate of 51.75%, or

$$\begin{aligned} Tax &= 0.23[(9E^H - FV] = \left[(0.23)(9/4)\right]\left\{(4/9)[(9E^H - (FV)]\right\} \\ &= \left[(0.23)(9/4)\right]\left\{4[(E^H - r(FV)]\right\} \\ &= 0.5175\left\{4[(E^H - r(FV)]\right\}, \quad r = 1/9, \end{aligned}$$

that is, the product of the effective excess profits tax rate and the excess profits tax base. Thus, apart from the lack of discounting over the first four years, the Windfall Tax formula corresponds to the correct excess profits tax formula, providing strong evidence that it should be creditable as an excess profits tax. (Taking into account discounting, the multiplicative factor on the expression for *EP* above should be 4 instead of 3, and the Windfall Tax would be too high, relative to the correct excess profits tax, by one-third (4/3-1), far smaller than the error in the case of the undervaluation interpretation.)

Oxford University Centre for Business Taxation
Working Paper series recent papers

WP 14/10 David Neumark and Helen Simpson *Place-based policies*

WP 14/09 Johannes Becker and Ronald B Davies *A negotiation-based model of tax-induced transfer pricing*

WP 14/08 Marko Koethenbuerger and Michael Stimmelmayr *Taxing multinationals in the presence of internal capital markets*

WP 14/07 Michael Devereux and Rita de la Feria *Designing and implementing a destination-based corporate tax*

WP 14/05 John W Diamond and George R Zodrow *The dynamic economic effects of a US corporate income tax rate reduction*

WP 14/04 Claudia Keser, Gerrit Kimpel and Andreas Oesterricher *The CCCTB option – an experimental study*

WP 14/03 Arjan Lejour *The foreign investment effects of tax treaties*

WP 14/02 Ralph-C. Bayer Harald Oberhofer and Hannes Winner *The occurrence of tax amnesties: theory and evidence*

WP14/01 Nils Herger, Steve McCorriston and Christos Kotsogiannisz *Multiple taxes and alternative forms of FDI: evidence from cross-border acquisitions*

WP13/25 Michael Devereux, Niels Johannesen and John Vella *Can taxes tame the banks? Evidence from European bank levies*

WP13/24 Matt Krzepkowski *Debt and tax losses: the effect of tax asymmetries on the cost of capital and capital structure*

WP13/23 Jennifer Blouin, Harry Huizinga, Luc Laeven, Gaëtan Nicodème *Thin capitalization rules and multinational firm capital structure*

WP13/22 Danny Yagan *Capital tax reform and the real economy: the effects of the 2003 dividend tax cut*

WP13/21 Andreas Haufler and Christoph Lülfesmann *Reforming an asymmetric union: on the virtues of dual tier capital taxation*

WP13/20 Michael Blackwell *Do the haves come out ahead in tax litigation? An empirical study of the dynamics of tax appeals in the UK*

WP13/19 Johannes Becker and Ronald B Davies *Learning and international policy diffusion: the case of corporate tax policy*

WP13/18 Reuven S Avi-Yonah *And yet it moves: taxation and labour mobility in the 21st century*

WP13/17 Anne Brockmeyer *The investment effect of taxation: evidence from a corporate tax kink*

WP13/16 Dominika Langenmayr and Rebecca Lesterz *Taxation and corporate risk-taking*

WP13/15 Martin Ruf and Alfons J Weichenrieder *CFC legislation, passive assets and the impact of the ECJ's Cadbury-Schweppes decision*

WP13/14 Annette Alstadsæter and Martin Jacob *The effect of awareness and incentives on tax evasion*

WP13/13 Jarkko Harju and Tuomos Matikka *The elasticity of taxable income and income-shifting between tax bases: what is "real" and what is not?*

WP13/12 Li Liu and Andrew Harper *Temporary increase in annual investment allowance*

WP13/11 Alan J Auderbach and Michael P Devererux *Consumption and cash-flow taxes in an international setting*

WP13/10 Andreas Haufler and Mohammed Mardan *Cross-border loss offset can fuel tax competition*

WP13/09 Ben Lockwood *How should financial intermediation services be taxed?*

WP13/08 Dominika Langenmayr, Andreas Haufler and Christian J bauer *Should tax policy favour high or low productivity firms?*

WP13/07 Theresa Lohse and Nadine Riedel *Do transfer pricing laws limit international income shifting? Evidence from European multinationals*

WP13/06 Ruud de Mooij and Jost Heckemeyer *Taxation and corporate debt: are banks any different?*

WP13/05 Rita de la Feria *EU VAT rate structure: towards unilateral convergence?*

WP13/04 Johannes Becker and Melaine Steinhoff *Conservative accounting yields excessive risk-taking - a note*

WP13/03 Michael P.Devereux, Clemens Fuest, and Ben Lockwood *The Taxation of Foreign Profits: a Unified View*

WP13/02 Giorgia Maffini *Corporate tax policy under the Labour government 1997-2010*

WP13/01 Christoph Ernst, Katharina Richter and Nadine Riedel *Corporate taxation and the quality of research & development*

WP12/29 Michael P Devereux and Simon Loretz *What do we know about corporate tax competition?*

WP12/28 Rita de la Feria and Richard Krever *Ending VAT Exemptions: Towards A Post-Modern VAT*

WP12/27 Theresa Lohse, Nadine Riedel and Christoph Spengel *The Increasing Importance of Transfer Pricing Regulations – a Worldwide Overview*

WP12/26 Harry Huizinga, Johannes Voget and Wolf Wagner
Capital gains taxation and the cost of capital: evidence from unanticipated cross-border transfers of tax bases

WP12/25 Harry Huizinga, Johannes Voget and Wolf Wagner
International taxation and cross border banking

WP12/24 Johannes Becker and Nadine riedel
Multinational Firms Mitigate Tax Competition

WP12/23 Michael Devereux, Li Liu and Simon Loretz
The Elasticity of Corporate Taxable Income: New Evidence from UK Tax Records

WP12/22 Olivier Bargain, Mathias Dolls, Clemens Fuest, Dirk Neumann, Andreas Peichl, Nico Pestel, Sebastian Siegloch
Fiscal Union in Europe? Redistributive and Stabilising Effects of a European Tax-Benefit System and Fiscal Equalisation Mechanism

WP12/21 Peter Egger, Christian Keuschnigg, Valeria Merlo and Georg Wamser *Corporate taxes and internal borrowing within multinational firms*

WP12/20 Jarkko Harju and Tuomos Kosonen *The impact of tax incentives on the economic activity of entrepreneurs*

WP12/19 Laura Kawano and Joel slemrod *The effects of tax rates and tax bases on corporate tax revenues: estimates with new measures of the corporate tax base*

WP12/18 Giacomo Rodano, Nicolas Serrano-Velarde and Emanuele Tarantino *Bankruptcy law and the cost of banking finance*

WP12/17 Xavier Boutin, Giacinta Cestone, Chiara Fumagalli, Giovanni Pica and Nicolas Serrano-Velarde *The Deep pocket effect of internal capital markets*

WP12/16 Clemens Fuest, Andreas Peichl and Sebastian Siegloch *Which workers bear the burden of corporate taxation and which firms can pass it on? Micro evidence from Germany*

WP12/15 Michael P. Devereux *Issues in the Design of Taxes on Corporate Profit*

WP12/14 Alan Auerbach and Michael P. Devereux *Consumption Taxes In An International Setting*

WP12/13 Wiji Arulampalam, Michael P. Devereux and Federica Liberini *Taxes and the location of targets*

WP12/12 Scott Dyreng, Bradley Lindsey and Jacob Thornock *Exploring the role Delaware plays as a tax haven*

WP12/11 Katarzyna Bilicka and Clemens Fuest *With which countries do tax havens share information?*

WP12/10 Giorgia Maffini *Territoriality, Worldwide Principle, and Competitiveness of Multinationals: A Firm-level Analysis of Tax Burdens*

WP12/09 Daniel Shaviro *The rising tax-electivity of US residency*

WP12/08 Edward D Kleinbard *Stateless Income*

WP12/07 Vilen Lipatov and Alfons Weichenrieder *Optimal income taxation with tax competition*

WP12/06 Kevin S Markle *A Comparison of the Tax-motivated Income Shifting of Multinationals in Territorial and Worldwide Countries*

WP12/05 Li Liu *Income Taxation and Business Incorporation: Evidence from the Early Twentieth Century*

WP12/04 Shafik Hebous and Vilen Lipatov *A Journey from a Corruption Port to a Tax Haven*

WP12/03 Neils Johannesen *Strategic line drawing between debt and equity*

WP12/02 Chongyang Chen, Zhonglan Dai, Douglas A. Shackelford and Harold H. Zhang, *Does Financial Constraint Affect Shareholder Taxes and the Cost of Equity Capital?*

WP12/01 Stephen R. Bond and Irem Guceri, *Trends in UK BERD after the Introduction of R&D Tax Credits*