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Abstract

The classical corporation tax entails double taxation of corporate income. The current EU practise is to grant a credit from or impute the corporation tax to the domestic recipients of dividends. In case of a company with international owners the feature converts the imputation system back to a classical corporation tax. When the exemption method is applied to the taxation of repatriated dividends, their onward distribution to the international owners of the parent requires complex rules for exempting them from the minimum corporation tax, which equals the tax credit on dividends, in order to avoid the cumulation of the corporation tax internationally. In contrast, the classical corporation tax, combined with the tax exemption of foreign and domestic dividends within the corporate sector, maintains its simplicity and can be designed neutral with respect to the financing and dividend decisions of multinationals, by adopting double taxation of interest income. Broad tax bases and low statutory tax rates are advocated as general policy.

JEL classification: H25, G32, G35

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1. INTRODUCTION

Classical corporation tax regards the corporation and its owners as separate tax entities and therefore double-taxes its income, first the corporation and again the owners on dividends and realised capital gains. Such a tax system is thought to discriminate the incorporation of business ideas, restrain the supply of equity finance necessary for their economic utilisation, reallocate resources from the corporate sector to the unincorporated one and thus to cause an efficiency loss to the whole economy (Harberger 1962).

The need to eliminate these drawbacks gave impetus to tax reforms that emphasised to integrate the taxation of the corporation and its owners. EU countries adopted the thinking to regard the corporate income tax as a kind of withholding tax of the owners' final income tax. Therefore it was to be credited on the distributed corporate profit against the owners' income tax on dividends. Such a system became to be known as the corporation tax credit or *avoir fiscal* in France and the imputation system in Britain, the purpose of which is to guarantee taxation of income once. Crediting the corporation tax on the undistributed part of profit was not even considered because many European countries do not tax long-term realised capital gains at all, or tax it at a lower legal rate than dividends, with further benefit due to deferred realisations. The corporation tax on undistributed profit was then seen as an accrual based tax. Without it undistributed profit would escape taxation altogether, against the idea of the comprehensive income tax.

The corporation tax credit is typically not extended to the foreign shareholders nor is granted on dividends received from abroad except on a reciprocal basis. Therefore, the imputation system does not eliminate double taxation of foreign-source dividends or foreign-destination dividends. On the contrary, foreign-source dividends which are distributed further are

typically subject to a minimum tax in the country of residence of the dividend distributing company. Such a tax is typically set equal to the tax credit on dividends unless the company has paid corporation tax during the accounting year, on the basis of which the distribution is paid, or unless it has unutilised past tax surpluses, that is, previously paid corporation taxes on undistributed profits. This means that foreign-source dividends are double-taxed when leaving the country of residence of the dividend paying company. And, the shareholders' countries of residence levy their own dividend taxes.

These things show the imputation system not to be a multinational friendly arrangement, which is recognised in literature; see Boadway and Bruce (1992) and Alworth (1988), who refers the imputation system been "invented by the French to beastly to the Americans" because it favours domestic ownership over foreign one. On the practical side, Germany decided to give up the imputation system altogether, but to count half of dividends in ordinary income in the personal income taxation.

Below it is demonstrated more formally that

(i) the corporation tax starts to cumulate, if foreign-source dividends are tax exempt, but onward distributed dividends are subject to the minimum tax, and more importantly that

(ii) given the mixture of foreign and domestic ownership, the imputation system converts effectively back to a classical corporation tax with double taxation of dividends, when the imputation credit is not granted to foreign-destination dividends of a multinational with foreign shareholders.

Therefore, some old properties about the classical corporation tax are demonstrated:

(iii) such a tax without deductibility of interest expenses on debt, that is, the corporation tax base comprises of the return on both equity and debt, but with equal tax rates on interest, dividend and capital gains in the shareholders' income taxation, is neutral with respect to financing and dividend decisions of the firm (King 1974, 1977),

(iv) in case of multinationals the corporation tax does not cumulate, if the foreign corporation tax is always either fully credited against the domestic one in a country receiving foreign-source income or is exempt from it, the two main ways to treat foreign-source corporate income in EU.

Property (iii) then simply extends double taxation to the whole income generated by the corporation and adopts the flat-rate approach to the personal taxation of income from capital, as currently in the Nordic countries. The design is then a double-tax version of Comprehensive Business Income Tax (CBIT) –proposals, widely discussed in tax policy literature during the past decade; see Cnossen (1996), and US Treasury (1992).

The plan of the remainder is the following. Section 2 explains the imputation system and develops the key concepts to analyse the financial choices of a company that operates only domestically. Section 3 considers a multinational and derives the tax incentives for repatriating and for distributing onward foreign-source income in the imputation system. Section 4 demonstrates the superiority of the classical double-tax system over the previous one. Section 5 concludes with policy discussion. Appendix examines the cost of capital for internally financed investments in the international environment. This trapped equity approach is the driving analytic force of the whole paper.

2. THE IMPUTATION SYSTEM AND FINANCIAL DECISIONS

The British way to operate the corporation tax credit system in the shareholders' dividend taxation is established to model it in the tax literature following King (1974, 1977). The shareholders' credit is defined in terms of the rate of imputation u according to which the received dividend d is deemed already to have been taxed in the corporation tax. Therefore, the taxable gross dividend per an euro of dividends received is 1/(1-u) euros, which carries a credit of u/(1-u) euros. Both the dividend and the credit are taxed at the personal income tax rate of t^d. After the credit the investor's additional tax on dividend d is

$$(1) \qquad T^d = (\hat{o}^d - u)\frac{d}{1-u},$$

and his post-tax dividend q from a dividend of one euro d=1 is

$$(2) \qquad \grave{e} = 1 - T^d = \frac{1-\hat{o}^d}{1-u}$$

An important element is the market valuation g of one euro of post-tax undistributed profit. There are investors in the market who want to benefit from the possibly differing tax treatments of dividends and capital gains. In the arbitrage equilibrium the market price g must be such that the investors are indifferent between pocketing the post-tax dividends or selling their shares. Then they realize a post-tax capital gain of $(1-t^g)g$ per one euro of post-tax profit of the corporation, t^g being the effective accrual equivalent tax rate on undistributed profit facing the investors. Hence, the no-arbitrage condition

$$(3) \qquad (1-t^g)g = q$$

gives the market valuation coefficient of undistributed profit

$$(4) \qquad \tilde{a} = \frac{1-\hat{o}^d}{(1-\hat{o}^g)(1-u)} .$$

The following concepts are needed, too:

β = a variable describing the degree of deductibility of real interest expenses from the corporate tax base, with $\beta = 0$ when not at all deductible, and $\beta = 1$ when fully deductible;

t^h = the rate of the corporation tax in the home country (h-country); and

t^b = the effective personal tax rate on real interest income.

The effective tax rates are typically different from the legal ones due to inflation, but inflation is abstracted away in this paper.

In this section the company is assumed to operate only in the h-country. So, let us consider the conditions for its financial decisions to be independent of the tax system.[1] Both the corporation and investor level tax consequences of those decisions are taken into account. The question is how to allocate the real true post-tax income generated by the corporation among real interest expenses on debt, dividends to the shareholders and among retained profit, that is, capital gains to the shareholders. Let us start from the trade-off between

[1] The approach here is purely static. Keen (1991) derives the same conditions in the intertemporal and international setting.

interest expenses and post-tax retained profit. The decision to increase debt in the balance sheet of the company is independent of the tax system, if the following holds:

(5) $t^{b} - t^{h}\beta = t^{g} g\ (1 - t^{h} b)$

The lhs gives the combined net tax burden from allocating one euro of profit to interest payments: the investors' tax on additional interest income minus the tax shield due to their deductibility from the corporate tax base. This must be the same as the shareholders' increased capital gains tax on the rhs, if the company decides not to increase its interest payments, thus saving net $(1 - t^{h} b)$ from one euro of interest expense.[2]

Consider next the trade-off between allocating post-tax profit to dividends or retaining it for financing investment. It is not affected by the tax system, if the following is true:

(6) $$\frac{\hat{o}^{d} - u}{1 - u} = \hat{o}^{g}\tilde{a}$$

That is, the investors' additional tax burden must be the same, when the corporation uses one euro of post-tax profit to dividend distribution (lhs) or retains it in the corporation (rhs). There is, of course, the third trade-off between debt and new share issues, which is given by the left hand sides of conditions (5) and (6). It is redundant, for if (5) and (6) hold simultaneously, the tax system does not distort the financing and dividend decisions of the company.

It is immediately clear from conditions (5)-(6) that the classical corporation tax, when the rate of imputation u = 0 holds, without the deductibility of debt interest $\beta = 0$, satisfies them simultaneously with equality

(7a) $\hat{o}^{b} = \hat{o}^{g}\tilde{a}$

[2] As a matter of fact, the interpretations of this and condition (6) are much more delicate as appears from the original reference (King 1974, 1977, ch, 4; see also Sinn 1987, ch. 4.2). They are, however, fully sufficient for the clarity of the current policy problem.

(7b) $\hat{o}^d = \hat{o}^g \tilde{a}$

if the following is true of all investors' tax rates

(8) $t^b = t^d = t^g$,

whence g =1 holds in the classical system. The condition is satisfied in principle in the Nordic flat rate system of taxing income from capital, only earned income being subject to the progressive tax schedule. Conditions (7a-b) and (8) hold true except among tax-free and tax-paying investor groups. The latter is double-taxed while the former once. Hence, the only incentive is to channel savings and income from capital through tax-free institutions. The described classical corporation tax is not neutral with respect to the ownership of corporations, though debt and dividend decisions are independent of the tax system.

It must be emphasised, in addition the uniformity of the flat-tax rates among investors, that decisive for neutrality of financial policies is the taxation of true economic income both at the corporation and investor levels. To consider investment incentives for different kinds of projects is beyond the scope of this paper, but Appendix summarises the effect of the tax system on the minimum required return of investment.

Finally, to avoid the cumulation of the domestic corporation tax, the natural solution is to exempt all dividends and interest income received from other domestic corporations from the tax base, or the corporation should be credited not only on received dividends but also on interest income, and the possible surplus credits be remitted.

The imputation system eliminates double-taxation of dividends, but not that of undistributed profits which in some countries is not regarded as a problem due to the non-existent or low effective capital gains tax rate. Yet Finland, for example, runs a capital gains tax system where realised nominal capital gains are fully taxable[3] and unrealised ones are subject to an annual wealth tax. So the approximate uniformity (8) of the tax rates is reality. Hence it is

[3] After 10 years' holding period 50 per cent of the total gross proceeds from the realized asset is taxable income if that is less than on the basis of the original purchase price.

obvious that the neutrality conditions (5)-(6) cannot hold under the imputation system. To see it, substitute the value of γ from (4) to conditions (5) an (6), set $\beta = 1$ because of deductibility of interest expenses, use condition (8), and apply the full corporation tax credit on dividends $u = t^h = t^d$. Then the left hand sides of conditions (5)-(6) are zeros, and the right hand sides are equal to t^g. Such a system is neutral with respect to the sources of outside finance, but discriminates against internal finance. Neutrality of financial decisions would require the re-adoption of the old thinking, non-taxed long-term capital gains, or perhaps better still, credit the corporation tax on the accumulated undistributed profits during the ownership period as Norway does. This has the benefit of taxing capital gains that are realized before the company earns any profit at all.

3. DISTRIBUTIONS FROM REPATRIATED INCOME

The main theme of this paper is the taxation of internationally flowing dividends from the subsidiary to the parent company and further to its shareholders. Therefore, less attention is paid to the taxation of interest income on which brief principles are given at the end of next section. The chain of dividend taxation is examined here in two stages, repatriation and onward distribution by the parent, assuming the imputation system to be in operation.

Repatriation decision

Repatriation is examined in three different regimes. When h-country credits foreign taxes against and up to the domestic tax on foreign-source income, the parent is either in the state of excess credits or deficit credits. The former (latter) occurs when the domestic tax liability on foreign-source income is lower (higher) than creditable foreign corporation tax and withholding tax. The third regime corresponds to the case where h-country applies the exemption method to foreign-source income of the parent company.

If the repatriation of dividend d^{hf} from the subsidiary is made, the additional net taxes faced by the multinational and its owners (T= their total tax liability) are in the three regimes as follows:

(9a) $\partial T/\partial d^{hf} = w(1-t^{g}g);\ t^{h} < t^{f} + (1-t^{f})w$ (excess credits)

(9b) $= \dfrac{\hat{o}^{h} - \hat{o}^{f}}{1-\hat{o}^{f}}(1-t^{g}g);\ t^{h} \geq t^{f} + (1-t^{f})w$ (deficit credits)

(9c) $= 0;$ (exemption of foreign dividend, no withholding tax)

where t^{f} stands for the rate of corporation tax and w for the withholding tax in the foreign country (f-country). To interpret the net total tax effects in each regime, remember that one euro of post-corporation tax profit is repatriated as dividend. Therefore in case (9a) the subsidiary pays the withholding tax on it at the rate w, which directly reduces the undistributed profit of the whole multinational. Its market value is γw. So the owners save in their capital gains tax liability, and (9a) gives the net tax effect of the two.

In (9b) h-country recognises that one euro's dividend is born out of 1/(1-t^{f}) euros of taxable income abroad, for which the parent pays domestic corporation tax at the rate t^{h}, but receives the foreign tax credit t^{f}/(1-t^{f}). Now the excess domestic corporation tax over the foreign one plays the same role as the withholding tax in (9a). The only difference concerns the distribution of tax revenues. In (9a) it is the source country of income and in (9b) the h-country of the multinational who gain while in both cases the residence countries of the shareholders lose tax revenue. Condition (9c) speaks for itself.

What is important in (9a-b) is that coefficient γ now reflects the market value of post-corporation tax profit retained abroad, which also depends on the possible additional taxes in the repatriation phase. Let $\tilde{a}^{f}$ stand for it. Its value derives from an analogous arbitrage condition to (4) as follows:

(10) $(1-\hat{o}^{g})\tilde{a}^{f} = \grave{e}^{hf}$

where $\grave{e}^{hf}$ means the post-tax dividend resulting to the shareholders of the parent from one euro's dividend from the subsidiary:

$$(11)\quad \grave{e}^{hf} = \left\{1 - \max\left[\frac{\hat{o}^h - \hat{o}^f}{1-\hat{o}^f} - w, 0\right] - w\right\}\left(1 - T^d\right)$$

where the first term in the curly braces is the dividend from the subsidiary, the second the possible excess domestic corporation tax on it, and the third one the withholding tax on it. The expression of the curly braces itself is the declared dividend by the parent from the repatriation. The final term T^d on the rhs is the additional tax of the onward distribution. At the moment it is assumed that the imputation credit is received by all shareholders, also by those whose country of residence (r-countries) differs from that of the multinational. This is equivalent to the assumption that the r-countries apply the credit method to the foreign-source dividends of all investors, except for tax revenues allocating differently.

The value of $\tilde{a}^f$ now follows from conditions (10) and (11) in the regime of (9a), when the argument zero bites in the max-term of (11):

$$(12a)\quad \tilde{a}^f = \frac{1-\hat{o}^d}{1-\hat{o}^g}\cdot\frac{1-w}{1-u}$$

In regime (9b), the first argument of the max-term is the relevant one, whence

$$(12b)\quad \tilde{a}^f = \frac{1-\hat{o}^d}{1-\hat{o}^g}\cdot\frac{1-\hat{o}^h}{1-\hat{o}^f}\cdot\frac{1}{1-u}$$

follows. When h-country applies the exemption method, dividends from the subsidiary, when distributed further to the shareholders, are subject to the minimum corporation tax determined on the basis of the dividend distribution d^f and set equal to the granted tax

credit u/(1-u) on every dividend euro.[4] Therefore the additional tax of the distribution phase is no longer given by (1), but by (1) plus u/(1-u). Therefore conditions (10)-(11) give

$$(12c)\quad \tilde{a}^f = \frac{(1-\hat{o}^d-u)(1-w)}{(1-\hat{o}^g)(1-u)}$$

in case of the exemption method in the h-country.

Total additional tax of onward distributed repatriated dividend

The total additional tax due to the repatriation and distribution onward by the parent is thus the sum of the effect in (9a-b) and (1), and in case of exemption (9c) and (1) plus u/(1-u), with respective $\tilde{a}^f$ from (12a-c). Hence one obtains in each regime as follows:

$$(13a)\quad \frac{\partial T}{\partial d^{hf}} + \frac{\partial T}{\partial d} = \frac{t^d - u}{1-u} - t^g g + w(1-t^g g) \text{ with } \tilde{a}^f \text{ from (12a)}$$

$$(13b)\quad \frac{\partial T}{\partial d^{hf}} + \frac{\partial T}{\partial d} = \frac{t^d - u}{1-u} - t^g g + \frac{t^h}{1-t^f}(1-t^g g) \text{ with } \tilde{a}^f \text{ from (12b)}$$

$$(13c)\quad \frac{\partial T}{\partial d^f} = \frac{t^d - u}{1-u} - t^g g + \frac{u}{1-u}\left[1-t^g g\right] \text{ with } \tilde{a}^f \text{ from (12c)}$$

In (13c) it is clear that the supplementary tax u/(1-u) in the distribution phase on exempted repatriated dividends plays the same role as the withholding tax in case of excess foreign tax credits in (13a), with equivalent interpretations, but tax revenue implications as in (13b).

It is seen from (13a-b) that, in comparison to the solely domestic company, the neutrality of the dividend decision with the full corporation tax credit $u = t^h = t^d$ and with zero capital gains tax rate (or the extension of the corporation tax credit to the capital gains tax) requires the additional taxes either in the repatriation phase (the withholding tax or the excess of domestic corporation tax rate over the foreign one) or in the onward distribution phase be

[4] This means that the total amount distributed exceeds the post-tax profit generated by the multinational in the h-country by d^f.

zeros.[5] If the dividend and debt financing decisions were both simultaneously be independent of the tax system, the foreign corporation tax rate, at which interest expenses are deductible, should equal the domestic one and the personal tax rate on interest by condition (8). The cost of capital would then be the same for each source of finance and the same both in f- and h-country; see Appendix.

Treatment of foreign shareholders

Introduce next the crucial property that the imputation credit is not extended to the foreign shareholders of the parent.[6] Assume that their ownership share is η and that they pay tax in the countries of residence on dividends at the same rate t^d as the h-country investors, which amounts to the same as the r-countries apply the exemption method to foreign-source dividends of all their corporate investors. Hence the proportion 1-η of the shareholders receive the full imputation credit $u = t^h = t^d$ when paying their dividend tax. Assume the share η to be constant and modify respectively the expression (11) of the post-tax dividend $\grave{e}^{hf}$. The arbitrage condition (10) gives the market valuation coefficient of undistributed foreign profits in the three regimes as follows:

$$\text{(14a)} \quad \tilde{a}^{f\varsigma} = \frac{1-\varsigma\hat{o}^d}{1-\hat{o}^g}(1-w).$$

$$\text{(14b)} \quad \tilde{a}^{f\varsigma} = \frac{1-\varsigma\hat{o}^d}{1-\hat{o}^g}\left(1-\frac{\hat{o}^h-\hat{o}^f}{1-\hat{o}^f}\right)$$

$$\text{(14c)} \quad \tilde{a}^{f\varsigma} = \left\{1-\varsigma\hat{o}^d-\frac{u}{1-u}\right\}\frac{1-w}{1-\hat{o}^g}$$

where a foreign withholding tax is assumed to exist, as opposed to (9c).

[5] If the capital gains and withholding tax rates are not zeros, but set at equal rates, their direct effect on $\tilde{a}^f$ cancels out, but the net effect is to reduce the total tax liability.

[6] Neither can the non-taxable domestic shareholders such as pension insurance companies and trusts, foundations, unions, and associations serving public purpose claim the tax credit back.

It is immediately clear in case (14a) of excess foreign tax credits that the valuation parameter of internal equity is the same as under the classical system when u=0 holds in (12a). The only difference is that the dividend tax rate is weighted by the share of foreign shareholders ηt^{d}. The same is of course true in case of deficit credits (14b) and exemption plus a supplementary tax (14c). The total tax effect of repatriation and onward distribution is then as follows:

$$(15a)\quad \frac{\partial T}{\partial d^{cf}} + \frac{\partial T}{\partial d} = \frac{\hat{o}^{d} - u}{1-u}(1-ç) + ç\hat{o}^{d} - \hat{o}^{g}\tilde{a} + w(1-\hat{o}^{g}\tilde{a})$$

$$(15c)\quad \frac{\partial T}{\partial d^{f}} = \frac{\hat{o}^{d} - u}{1-u}(1-ç) + ç\hat{o}^{d} - \hat{o}\tilde{a} + \frac{u}{1-u}[1-\hat{o}^{g}\tilde{a}]$$

from which the case of deficit credits is omitted as obvious and where $\tilde{a}^{fh}$ is the respective one of (14a-c). When the h-country of the parent fully imputes the corporation tax to its resident shareholders u = t^{h} = t^{d}, the first terms in (15a-c) are zeros. The combined effect of the remaining three terms should then be zero for tax neutrality of repatriation and onward distribution. This justifies a positive capital gains tax rate, which would be $t^{g} = \eta t^{d}$ in case of no withholding tax w = 0. Yet, the distortion in favour of debt finance remains because of interest deductibility.

The case (14c) of exemption differs from case (14a) of excess credits only by having a lower market valuation of foreign internal equity due to the cumulative effect of the supplementary corporation tax. This explains why in Finland the politicians have yielded to grant concessions from the supplementary corporation tax on the part of onward distributed dividends which are paid abroad. The exemption of foreign-source dividends in the r-country of the multinational is hence not consistent with the system of crediting the corporation tax to the shareholders and the supplementary corporation tax. The latter is unnecessary, if the parent is treated according to the foreign tax credit system. That is the logical system together with the imputation system.

Hence the imputation system converts effectively to a classical corporation tax with double-taxed equity but once-taxed debt irrespective of whether the home country of the parent company runs a system of foreign corporation tax credit or exempts foreign-source dividends. So the multinational ownership structure of a multinational together with a imputation system in its home country potentially distorts its financial structure.

4. GLOBAL CLASSICAL CORPORATION TAX

The natural question then arises. If the behavioural incentives of the classical corporation tax are an unavoidable property of the imputation system in an international perspective, why not adopt it directly without the current administrative complexities. And why not adopt it without the deductibility of debt interest expenses globally.

In such a case there is no economic justification for collecting the withholding tax. So let us assume w = 0 as well as the uniformity condition (8) of the flat-tax rates on all kinds of income from capital, whence $\gamma = 1$ holds under classical corporation tax u = 0. Then the total tax effect from repatriation and onward distribution is zero in cases of excess credits (13a) and exemption (13c). What is paid in the dividend tax due to those decisions is saved in the capital gains tax. The repatriation and onward distribution of dividends is independent of the tax system. Equity income is double-taxed, first in the r-countries of the subsidiary and parent on their domestic income, thereafter in the r-countries of the investors at the tax rates $t^{\mathrm{d}} = t^{\mathrm{g}}$.

The r-countries of the investors collect revenue from the dividend tax, capital gains tax and interest income tax. The r-countries of the corporations collect the corporation tax revenue at their respective rates. Under these conditions the deficit credits case (13b) is only slightly different, because the h-country corporate tax rate exceeds the foreign one and therefore collects some corporation tax revenue with respective incentives to delay repatriation.

To see the significance of this regime for the overall neutrality requirement for financial policies, consider now the decision to repatriate interest income, but continuing to assume

the classical corporation tax, without the deductibility of interest expenses β=0, and with the uniformity condition (8) of the flat-tax rates irrespective of the investors' r-country.

Interest payments directly to the investors

Consider a multinational, the foreign subsidiary of which pays interest expenses directly to its international investors. Assume for the moment the existence of the foreign withholding tax w. In analogy to (5), the total tax consequence of paying interest expenses is zero when the following holds:

(16a) $\quad w - t^{f} b^{f} = t^{g} g(1 - t^{f} b^{f}); \quad w \geq t^{b}$ (excess credits)

(16b) $\quad t^{b} - t^{f} b^{f} = t^{g} g(1 - t^{f} b^{f}); \quad t^{b} > w$ (deficit credits)

where γ is given by conditions (12) and depends on the withholding tax rate. But, without interest deductibility β=0, there is no economic justification for the withholding tax any more. Hence, set w= 0 and eliminate condition (16a). The valuation factor of internal equity γ=1 now holds with the uniform personal tax rates (8). Tax neutrality would then prevail both between the decisions to increase and decrease interest payments along with their non-deductibility $b^{f} = b^{h} = 0$.[7]

Repatriation of interest

With non-deductibility of interest expenses the only consistent way is to exempt them in the taxation of the parent company. In the end it will be double-taxed when distributed onward, at the rate t^{b} when paid to those investing in the debt of the parent, or at the equal dividend tax (8) if as dividends. The withholding tax and its crediting are consistent only with interest deductibility.

[7] On the other hand, the reporting of foreign-source interest income is regarded as a problem. Were there a withholding tax $w = \hat{o}^{b}$ together with the non-deductibility, no control and obligation to report them under exemption would be required. Neither would r-countries of investor collect any tax revenue.

5. CONCLUSION

Both the imputation system, which credits the corporation tax on dividends to the shareholders, and the classical corporation tax, which double-taxes dividends, are examined as tax systems of a multinational, the ownership of which is internationally dispersed. The most of international tax literature deals with the tax incentives of repatriation within a multinational under different ways of treating repatriated income in the taxation of the parent company. The analysis is here extended to take the tax incentives of onward distribution into account.[8]

The major finding is that when the restriction of the imputation system of not to extend the imputation credit to the dividends paid abroad is taken into account, the imputation system converts effectively back to a classical system with double-taxation of equity income, favouring debt finance, the system it was supposed to replace. This property occurs irrespective of whether the exemption method or the foreign tax credit is applied to the taxation of repatriated income. As there are administrative complexities of running the imputation system to avoid the cumulation of the corporation tax internationally, the paper addresses to the benefits of the classical corporation tax as a global system.

The particular design advocated here is to extend double-taxation to the whole income of a corporation. The classical corporation tax, without the deductibility of interest expenses, but combined with the uniformity of the flat-tax rates among all categories of income from capital in the personal taxation, is demonstrated to produce

(i) neutrality with respect to the sources of finance, if the rates of corporation tax and the personal flat-tax rates of income from capital tend to converge to the same level in each country because of tax competition and global harmonisation efforts; the return on outside equity, internal equity and debt would be double-taxed, first at the corporate level, thereafter at the investor one

(ii) fair division of tax revenues among the resident countries of corporations and investors

[8] As to formal economics, the conditions derived here are analogous to the ones by Keen (1991).

(iii) administrative simplicity; income from other corporations would be non-taxable to the receiving one; there is no justification for the withholding tax on repatriated income when the payer is another corporation

(iv) apprehension and clarity

The kind of system outlined above is not free from the general handicaps of the comprehensive income tax due to its obstinacy to tax income from capital on an accrual basis, which distorts intertemporal saving and investment decisions, and to its lack of treating equally all categories of ownership. That is why savings tend to channel through the non-taxed sector, distorting the ownership structure of the corporate sector. International tax competition toward lower legal tax rates and tax harmonization efforts toward broader tax basis would reduce these distortions.

In Appendix the traditional "trapped equity" –argument, the cost of capital of an investment project financed from internal equity does not depend on the personal tax rate of future dividends on such an equity, is combined with the Hartman-Sinn result, the potential "dividend tax" of the repatriation phase does not affect the incentive to expand or contract capital stock abroad,[9] to show that the dividend tax of neither repatriation nor onward distribution affects the cost of capital of a foreign investment financed from profit retention. Instead, both phases of the dividend tax are shown to affect the average tax rate of an internally financed investment, because they affect the opportunity cost of such funds, the market value of internal equity, the precise reason why they do not affect the cost of capital. The international allocation of capital would thus depend on the corporation tax rates of the host countries of investing corporations if multinationals finance their subsidiaries internally.

[9] The relevant references are Sinn (1984) and Hartman (1985).

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APPENDIX: INVESTMENT DECISION AND "TRAPPED EQUITY"

In the main text the emphasis is on the tax neutrality of the financing decisions of the multinational. Their satisfaction does not guarantee intertemporal neutrality, which comprehensive income taxation (CIT) breaks on purpose, because it taxes the return on saving. Neutrality with respect to the financing decisions means in CIT a uniform taxation of all channels of saving for all savers. The investment decision is briefly summarised here, and extended to the different regimes of international taxation. Because the most controversial part is the cost of capital for internal finance of the multinational, it is almost the sole focus of this appendix. Neither is attention paid to tax depreciation allowances and similar investment incentives.

Define

MRR^h = the marginal pre-tax real rate of return on investment after true economic depreciation

r = the pre-tax real rate of interest on the alternative financial investment

When the company refrains from dividend distribution of one euro and instead invests it, the shareholders' wealth increases with g euros. The investment yields a post-tax dividend stream to the shareholders equal to $q(1-t^h)\,MRR^h$ in every future period, assuming the true depreciation being continuously reinvested which maintains the income generating power of the asset constant to infinity. The company invests up to the point at which the real rate of return on investment equals to the post-tax one on the shareholders' alternative financial asset:

$$\text{(A 1)} \qquad \frac{\grave{e}(1-\hat{o}^h)MRR^h}{\tilde{a}} = (1-\hat{o}^b)r$$

where q is from (2) and g from (4). These give $g = q/(1-t^g)$, which implies that q appears both in the numerator and denominator of (A1). The pre-tax cost of capital on investment financed from a marginal euro of post-tax profit retained is thus

$$\text{(A 2)} \qquad MRR^h = \frac{(1-\hat{o}^b)r}{(1-\hat{o}^g)(1-\hat{o}^h)}$$

The striking feature of this is that dividend distributions on equity accumulated out of undistributed post-tax profits do no longer face the personal dividend tax t^d, because the dividend tax is already deducted from the share price g at the instant of profit retention. It follows that the tax rate of a marginal investment

$$\text{(A 3)} \qquad \frac{MRR^h - (1-\hat{o}^b)r}{MRR^h} = \hat{o}^h + \hat{o}^g(1-\hat{o}^h)$$

does not depend on the dividend tax rate t^d, when the source of finance is profit. This phenomenon, the capitalization of the dividend tax into the share price, is the "trapped equity" – argument. Dividend tax is paid in any case, whether one euro of post-tax profit is distributed or retained, because dividends are the only way to channel the return on investment to the shareholders. The marginal tax rate of investment (A 3) is, however, made up of both the tax wedge of the investing company t^h and of the one supplying finance $t^g(1-t^h)$.

Because the dividend tax t^d is deducted in the market price of undistributed profit, it affects their average tax rate. When each euro of the true pre-corporation tax profit retained is taxed and when the shareholders accrual equivalent capital gains tax is paid on the market value of the remaining post-tax profit, the average tax rate of the undistributed part of profit is

(A 4) $\quad ATR = \hat{o}^h + \hat{o}^g(1-\hat{o}^h)\tilde{a}$,

which clearly depends on t^d through g from (4). If g is less than one, as is often assumed to be case due to the fact that the effective t^g tends to be less than t^d in most tax systems, the average tax rate (A 4) is lower than the marginal one (A 3). If $g=1$ holds as with uniform flat-tax rates (8), tax rates (A3) and (A4) are equal. If the corporation tax system is the classical one without interest deductibility but with uniform tax rates (8), the tax rates (A3-4) are also naturally equal to the ones on the debt-financed part of the company $t^h + t^b(1-t^h)$ and on the part of the company financed from outside equity $t^h + t^d(1-t^h)$. If the company earns economic profit over its real cost of finance, that is, it adds value, the average tax rate of the whole company is defined by (A4), when the tax rates satisfy condition (8).

The essentials of the "trapped equity" -argument do not change, when the company is a multinational. It still follows from condition (A1) that the net dividend $\grave{e}^{hf}$ from (11) pocketed from the repatriated dividend cancels out from the numerator $\tilde{a}^f$, conditions (12a-c). The dividend taxes, whether of the repatriation or onward distribution phase, are unavoidable. The only difference from the expression (A2) is that the foreign corporation tax rate $\hat{o}^f$ of the investing subsidiary enters the cost of capital MRR^f instead of the h-country one. Also, in case of h-country applying the imputation system, but not extending it to the dividends received from and distributed abroad, the cost of capital remains unaffected. Yet, in both cases the relevant $\tilde{a}^f$ has an effect on the average tax rate (A4), increasing it when $\tilde{a}^{fç}$ from (14a-c) hold true.

Hence the cost of capital of a foreign subsidiary and the international allocation of capital depends on the dividend tax system if the subsidiary is marginally financed with newly raised outside equity from the ultimate international investors of the multinational. Equity finance from the parent is internal equity.

The double-taxation logic of undistributed profit under the imputation system, which is clear from the neutrality condition (6) of a dividend vs. retained euro, is regarded controversial by some tax analysts, because the imputation credit capitalises into the share price. When a company earns one pre-tax euro per share and $(1-t^h)$ of an euro post-tax, the shareholders pocket a net dividend of θ of an euro from (2). If the company retains the post-tax profit, its share price increases from (4) with one euro when a full imputation of the corporation tax on dividends $u = \hat{o}^h$ applies. Hence after selling his share, the owner pockets after the capital gains tax the same amount as θ, condition (3). By this argument, such analysts regard internal equity as not double-taxed.