



Tax Cuts versus Profit Shifting Regulations

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Abstract

The literature highlights the importance of international coordination in both corporate tax rates and regulations governing profit shifting to ensure the effective taxation of multinational firms. This paper illustrates, within a stylized theoretical framework, that regulations limiting profit shifting are welfare-enhancing when the domestic–foreign tax rate differential is small, even if implemented unilaterally. When the tax differential is large, however, this result is reversed. At the same time, a unilateral reduction in the corporate income tax increases welfare by stimulating investment and raising pre-tax wages, despite ongoing profit shifting. Taken together, these findings suggest that while international coordination may be crucial for addressing tax rate competition, an objective central to Pillar 2, the case for coordinated action against profit shifting is less clear-cut.

Keywords: Corporate taxation, Profit shifting regulations

JEL classification: H21, H25, H87

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Sammendrag

Denne studien analyserer velferdseffekter av selskapsskatt og regulering av overskuddsflytting i en liten åpen økonomi der multinasjonale selskaper kan flytte overskudd til lavskatteland. Analysen bygger på en likevektsmodell med perfekt mobil kapital og en bindende offentlig budsjettbetingelse, der redusert proveny fra selskapsskatten må kompenseres gjennom økt beskatning av arbeidsinntekt. Overskuddsflytting påvirker dermed velferden indirekte gjennom skattegrunnlaget og behovet for arbeidsbeskatning.

Et hovedfunn er at det eksisterer en klar asymmetri mellom endringer i selskapsskattesatsen og regulering av overskuddsflytting som virkemidler i skattepolitikken. En reduksjon i selskapsskatten øker entydig velferden ved å stimulere investeringer, redusere avkastningskravet og øke lønningene. Effekten av strengere regulering av overskuddsflytting er derimot betinget av forskjellen mellom innenlandsk og utenlandsk skattesats. Når skatteforskjellen er liten, vil strengere regulering utvide det innenlandske skattegrunnlaget uten å påvirke investeringene i særlig grad. Dette gir rom for lavere skatt på arbeid og dermed høyere velferd. Når skatteforskjellen er stor, vil derimot strengere regulering øke kapitalkostnaden, redusere lønningene og dermed svekke velferden.

Analysen avdekker dermed fundamentale forskjeller mellom regulering av overskuddsflytting og reduksjoner i selskapsskattesatsen. Dette gir også ulike implikasjoner for internasjonal koordinering: koordinering av skattesatser fremstår som viktig for å motvirke skattekonkurranse, mens behovet for koordinering av regulering av overskuddsflytting er mer situasjonsavhengig.

Studien er forankret i empirisk forskning som dokumenterer omfanget av overskuddsflytting, investerings følsomhet for skatt og hvordan selskapsbeskatning påvirker lønninger. Dette gir en tolkning av modellens mekanismer som er i tråd med observerte sammenhenger i små åpne økonomier, og understøtter relevansen av resultatene for praktisk skattepolitikk.

1. Introduction

Small open economies may seek to attract foreign direct investment either by lowering corporate income tax rates or by adopting regulatory regimes that permit profits to be shifted to low-tax jurisdictions. Competition across countries along these margins can push the effective taxation of multinational firms below socially desirable levels. The literature therefore emphasizes the need for international coordination of both corporate tax rates and profit-shifting regulations to prevent a race to the bottom. This study contributes to the literature on the choice of policy instruments under tax competition by showing, in a stylized model, that corporate tax rate reductions and profit-shifting regulations have fundamentally different welfare properties. The study shows that the welfare effects of limiting profit shifting depend critically on the domestic–foreign tax rate differential. Tighter regulation is welfare-enhancing when the tax differential is small but may reduce welfare when it is large. The intuition is that when the tax differential is small, stricter regulations have only a limited effect on wages, while increasing corporate tax revenues, allowing labor taxes to be reduced and thereby improving worker welfare. In contrast, unilateral reductions in corporate tax rates unambiguously raise welfare.

Both Hong and Smart (2010) and Raimondos-Møller and Scharf (1999) argue that lax regulation permitting profit shifting may be welfare-enhancing in small open economies. The present study shows, however, that stricter regulations limiting profit shifting increase worker welfare when the domestic–foreign tax rate differential is small, even if implemented unilaterally. The intuition is that tighter regulation broadens the domestic corporate tax base while only marginally distorting investment. This contrasts with Hong and Smart (2010), who argue that international tax planning can benefit citizens of high-tax countries by lowering the effective marginal tax rate on mobile capital while maintaining higher taxation of less mobile bases, and with Raimondos-Møller and Scharf (1999), who emphasize that regulatory competition may result in inefficiently weak enforcement. When the tax rate differential is large, however, the present analysis also finds that stricter regulation may reduce welfare, in line with these contributions.

Several theoretical contributions show that perfectly mobile capital should not be taxed in a small open economy in the absence of profit shifting (Gordon, 1986; Razin and Sadka, 1991). A related literature argues that tighter restrictions on profit shifting may intensify competition over statutory tax rates (Hong and Smart, 2010; Becker and Fuest, 2012; Mongrain, Oh, and van Ypersele, 2023). The present analysis qualifies this concern by showing that such restrictions do not prevent tax competition from driving corporate tax rates toward zero. The results are robust to alternative fiscal closures, including a setting in which tax revenue finances public employment while labor taxation adjusts to maintain budget balance. Taken together, these findings suggest that coordination is

central to addressing tax rate competition. Successful coordination on statutory tax rates, partly reflected in recent developments associated with tax competition and the Pillar 2 agreement, reduces the domestic–foreign tax rate differential to a negligible level. The case for coordinated action against profit shifting when tax rates are harmonized is less clear-cut as unilateral policy measures may suffice to limit such behavior.

The remainder of the paper is structured as follows. Section 2 reviews the related literature. Section 3 presents the model framework. Sections 4 and 5 report the main results. Section 6 discusses the implications, and Section 7 concludes.

2. Literature

The increasing mobility of multinational firms has profoundly shaped corporate taxation in open economies. Over recent decades, statutory corporate income tax rates have declined substantially across countries, a development widely attributed to international tax competition for mobile capital (Zodrow and Mieszkowski, 1986; Wilson, 1986; Devereux, Lockwood and Redoano, 2008). At the same time, a large empirical literature documents that multinational enterprises respond strongly to international tax differentials not only by reallocating real investments, but also by shifting reported profits to low-tax jurisdictions (Hines and Rice, 1994; Dharmapala and Riedel, 2013; Beer, de Mooij and Liu, 2020). Multinationals are effectively taxed below intended levels according to Tørsløv, Wier, and Zucman (2023).

Several theoretical contributions show that perfectly mobile capital should not be taxed in a small open economy in the absence of profit shifting (see Gordon, 1986; Razin and Sadka, 1991). The underlying mechanism is that a source-based tax on capital raises the required pre-tax rate of return, thereby reducing investment. Lower investment in turn implies a lower capital-labor ratio and hence lower wages. In such an environment, it is more efficient to tax immobile labor directly. The present study contributes to this literature by showing that a unilateral reduction in the corporate income tax increases worker welfare by stimulating domestic investment and raising pre-tax wages, even when part of the resulting profits is shifted abroad.

A growing theoretical literature emphasizes that tax competition and profit shifting interact in important ways. While early models of tax competition focused exclusively on real capital mobility, more recent contributions introduce profit shifting as an additional adjustment margin (Häufler and Schjelderup, 2000; Hong and Smart, 2010; Becker and Fuest, 2012; Mongrain, Oh and van Ypersele, 2023). Much of this literature analyzes strategic interactions between governments and highlights the concern that policies restricting profit shifting may intensify competition over statutory tax rates. Mintz and Smart (2004) show that while international tax planning can sustain inward investment by lowering the effective tax burden on mobile capital, it does so in a distortionary manner by favoring firms with access to profit shifting. They demonstrate that governments can achieve the same investment more efficiently by eliminating tax planning and reducing statutory tax rates, thereby lowering aggregate deadweight costs. Hong and Smart (2010) argue that citizens of high-tax countries may benefit from some degree of international tax planning. By allowing multinational firms to shift profits, tax planning lowers the effective marginal tax rate on mobile capital while maintaining higher taxation of less mobile bases. This selective relief reduces distortions to investment and improves capital allocation, which can raise overall efficiency despite some erosion of the tax base. Raimondos-Møller and Scharf (1999) further show that enforcement of transfer

pricing rules may itself become a dimension of tax competition, potentially leading to inefficiently weak regulation.

The present study reaches a different conclusion. While acknowledging that lower effective corporate taxation can stimulate investment through explicit tax rate reductions, it shows that allowing profit shifting as an implicit form of tax relief reduces welfare when the domestic–foreign tax rate differential is small. Restricting profit shifting broadens the domestic corporate tax base, enabling lower labor income taxation and thereby increasing worker welfare, even under unilateral policy. Mintz and Smart (2004), by contrast, argue that profit shifting is undesirable because it stimulates investment in a distortionary way, unlike a reduction in statutory tax rates. In Hong and Smart (2010), tax planning lowers effective taxes on mobile capital while maintaining higher taxation of less mobile bases, thereby improving welfare. Profit shifting operates as an implicit reduction in capital taxation, without explicitly linking the associated revenue loss to compensating adjustments in labor taxation. By contrast, the present study imposes a binding government budget constraint, such that any erosion of the corporate tax base must be offset by higher labor taxation. Importantly, the main results are robust to alternative specifications of the fiscal closure, including a setting in which tax revenue finances public employment that enters the welfare function. When the tax rate differential is large, however, the analysis also shows that stricter regulation may reduce welfare, consistent with the findings in the existing literature.

Related work examines profit-shifting regulations in strategic tax competition settings. Gresik, Schindler, and Schjelderup (2017) show that the design of thin capitalization and earnings stripping rules affects both welfare and firms’ financing decisions by shaping the trade-off between reduced profit shifting and distortions to real investment. They emphasize that different instruments target different margins and may induce substitution across avoidance channels, implying that optimal policy balances tax base protection against real economic distortions. Juranek, Schindler, and Schneider (2023) analyze royalty taxation as a tool to curb profit shifting and show that such policies interact with tax competition and can effectively eliminate profit shifting. Importantly, they find that a positive royalty withholding tax is not only Pareto-efficient under coordination but also optimal as a unilateral policy. Johannesen (2022) shows that a global minimum tax can raise welfare by curbing profit shifting and expanding the tax base, but may also redistribute resources toward low-tax jurisdictions, implying ambiguous net effects. In contrast, the present study abstracts from coordinated solutions and strategic interactions by adopting a small open economy framework. It therefore focuses on unilateral policy choices, demonstrating that limiting profit shifting is welfare-enhancing when the domestic–foreign tax rate differential is small, whereas competition over statutory tax rates remains susceptible to inefficient undercutting.

The analysis is also closely related to work examining how countries should design their tax system in the presence of tax havens. Slemrod and Wilson (2009) study tax competition in the presence of parasitic tax havens that facilitate profit shifting and emphasize the resulting fiscal externalities. Gresik, Schindler, and Schjelderup (2025) show that the optimal strategy for attracting FDI depends on institutional tax capacity. Countries with weak capacity struggle to tax multinationals, those with intermediate capacity underutilize taxation to attract investment, while countries with strong institutions benefit from fully exploiting their tax capacity. Complementing these contributions, the present study clarifies the welfare effects of unilateral policy choices when multinational firms invest domestically but are able to shift profits abroad, highlighting an asymmetry in the need for international coordination across policy instruments.

A large empirical literature provides support for the key mechanisms emphasized in the theoretical framework. A central finding is that multinational firms respond strongly to tax rate differentials through profit shifting. Dharmapala (2014) surveys the evidence and concludes that profit shifting constitutes a quantitatively important margin of adjustment, while Heckemeyer and Overesch (2017) report semi-elasticities implying substantial responsiveness of reported profits to tax differentials. Complementary evidence using firm-level data (Dowd, Landefeld, and Moore, 2017) further confirms that profit shifting plays a significant role in shaping the effective taxation of multinational firms. These findings lend empirical support to modeling the share of shifted profits as a key determinant of both the domestic tax base and investment incentives.

A related empirical literature examines how corporate taxation affects real investment. Meta-analyses by De Mooij and Ederveen (2008) and subsequent contributions building on the effective marginal tax rate framework of Devereux and Griffith (2003) document that foreign direct investment responds negatively to higher corporate taxation. This evidence is consistent with the mechanism in the model whereby tax policy influences the required pre-tax rate of return and, in turn, domestic factor prices. By linking corporate taxation to investment, the model reflects well-established empirical regularities, providing a quantitative interpretation of how tax-induced changes in capital allocation translate into worker welfare.

Finally, a growing empirical literature shows that a substantial share of the burden of corporate taxation is borne by workers. Studies such as Arulampalam, Devereux, and Maffini (2012), Fuest, Peichl, and Siegloch (2018), and Suárez Serrato and Zidar (2016) find that higher corporate taxes are associated with lower wages, consistent with incidence falling partly on labor. At the same time, recent contributions on international tax coordination, including analyses of global minimum taxation (Keen and Konrad, 2013; Johannesen, 2022), emphasize the policy relevance of interactions between tax rates and profit shifting. The analysis integrates these empirically grounded channels

into a model framework designed to study corporate policy in small, high-tax countries that lack the ability to influence policy choices in other jurisdictions. As a result, the study generates welfare implications with clear empirical relevance for such small open economies.

3. The model framework

The analysis examines how changes in the corporate income tax system affect worker welfare in a small open economy in which multinational firms can shift a share of their profits to low-tax jurisdictions. Profit shifting is modeled explicitly, allowing both the required pre-tax rate of return on investment and corporate tax revenue to respond endogenously to policy changes. The government operates a welfare state with a fixed revenue requirement, implying that any reduction in corporate tax revenue must be offset by adjustments in other taxes. Multinational firms matter indirectly through their effects on employment, wages, and tax revenues. Production takes place under perfect competition and constant returns to scale, ensuring that investors earn a common after-tax return across domestic and foreign investments.

3.1. The government

Assume that the government's objective is to maximize worker welfare subject to the government budget constraint. Firms matter only insofar as they generate employment, wages and tax revenue. The welfare function is

$$(1) W = w(1 - t_w)L.$$

Welfare equals the consumption of workers, which is given by the after-tax labor income per worker, $w(1 - t_w)$, multiplied by the number of workers, L .

The government budget constraint consists of corporate tax revenue plus labor income tax revenue. It is given by

$$(2) P_k K(1 - s)t_r + wLt_w = G,$$

where G denotes exogenously determined public expenditures. Corporate tax revenue is given by $P_k K(1 - s)t_r$, where pre-tax profits taxed domestically equal the return per unit of capital, P_k , multiplied by the stock of capital, K , and by the share of profits taxed domestically, $(1 - s)$. This pre-tax profit is then multiplied by the domestic tax rate, t_r . Labor income tax revenue equals the pre-tax wage income, wL , multiplied by the labor income tax rate, t_w .

3.2. The production side

A representative multinational firm may invest in the domestic (high-tax) country and shift a proportion, s , of its profit to a low-tax country. Domestic after-tax profit, $\hat{\pi}$, is then given by

$$(3) \hat{\pi} = [L^\alpha K^{1-\alpha} - wL][s(1 - t_r^*) + (1 - s)(1 - t_r)].$$

Production follows a Cobb–Douglas technology in labor (L), and capital (K), with output sold at a price normalized to 1. The firm pays the wage rate w , and shifts a share of its profit abroad, s , where it is taxed at the rate t_r^* . The remaining share, $1 - s$, is taxed domestically at the rate t_r . The share of profits shifted abroad, s , captures the equilibrium outcome of firms' tax planning given the prevailing regulatory and enforcement environment. While profit shifting may occur through intra-group debt, transfer pricing, or the location of intangible assets, these channels are summarized by s , which represents the fraction of profits shifted abroad. Note that results rely primarily on the mobility of capital and the presence of profit shifting and are not specific to the Cobb–Douglas specification.

The firm chooses labor to maximize after-tax profits. The first-order condition for optimal labor demand is

$$(4) L = \left(\frac{w}{\alpha}\right)^{\frac{-1}{1-\alpha}} K.$$

Substituting (4) into (3) yields profit as a function of the capital stock, π :

$$(5) \pi = \left[(1 - \alpha) \left(\frac{w}{\alpha}\right)^{\frac{-\alpha}{1-\alpha}} K\right] [s(1 - t_r^*) + (1 - s)(1 - t_r)].$$

Differentiating (5) with respect to K gives the marginal return to capital,

$$(6) \frac{\partial \pi}{\partial K} = \left[(1 - \alpha) \left(\frac{w}{\alpha}\right)^{\frac{-\alpha}{1-\alpha}}\right] [s(1 - t_r^*) + (1 - s)(1 - t_r)].$$

Capital is assumed not to depreciate, and its price is normalized to 1 in both periods.

The multinational firm may alternatively invest abroad and liquidate the investment after one period. The pre-tax return of investing abroad, r^* , is taxed at the rate t_r^* . The payoff, F , is

$$(7) F = 1 + r^*(1 - t_r^*).$$

In equilibrium, the after-tax return to domestic real investment must equal the after-tax return to foreign investment. Thus, the marginal profit in equation (6), together with the resale value of capital, must equal the payoff in equation (7):

$$(8) 1 + r^*(1 - t_r^*) = \left[(1 - \alpha) \left(\frac{w}{\alpha}\right)^{\frac{-\alpha}{1-\alpha}}\right] [s(1 - t_r^*) + (1 - s)(1 - t_r)] + 1,$$

which simplifies to

$$(9) \frac{r^*(1-t_r^*)}{s(1-t_r^*)+(1-s)(1-t_r)} = (1-\alpha) \left(\frac{w}{\alpha}\right)^{\frac{-\alpha}{1-\alpha}} = P_k.$$

The rate of return requirement, P_k , in equation (9) determines the equilibrium wage rate, w . The rate of return requirement increases as the domestic tax rate increases when a share of the profit is taxed domestically. The explanation is that multinationals require a higher pre-tax return to compensate for the higher tax rate. The rate of return requirement, P_k , equals the pre-tax return abroad if domestic and foreign tax rates are equalized. The explanation being that post-tax returns are equalized when pre-tax returns are equalized in this case.

Labor supply is assumed to be fixed, i.e.

$$(10) L = \bar{L}.$$

The model delivers two key margins through which policy operates: the required pre-tax return on capital and the domestic tax base. The following sections analyze how these margins translate into welfare effects.

4. Taxation and regulations

This section evaluates the welfare implications of policy changes under the assumption that a large number of countries simultaneously set policies to maximize national welfare. Each country is treated as having a negligible impact on the policy choices of others. Accordingly, the analysis abstracts from strategic interactions, including attempts to influence other countries' policies for indirect welfare gains. The calculations quantify the welfare effects of unilateral policies, both in fully decentralized settings and within coordinated outcomes, where the foreign tax rate is held at the coordinated level. Section 4.1 explores implications of an increase in the corporate tax rate. Section 4.2 explores the implications of more lenient profit shifting regulations.

4.1. Taxation

The welfare effect of a marginal change in the corporate tax rate is obtained by differentiating (1) with respect to t_r , where both t_w and w are given as functions of t_r , and where (10) is inserted:

$$(11) \quad \frac{\partial W}{\partial t_r} = \frac{\partial w}{\partial t_r} (1 - t_w) \bar{L} - w(t_r) \bar{L} \frac{\partial t_w}{\partial t_r}.$$

The impact of a marginal change in the corporate tax rate on the wage rate, the first expression on the righthand side of (11), is obtained by differentiating the rate of return requirement, equation (9). Implicit differentiation of (9) with respect to the domestic corporate tax rate, t_r , where w is a function of t_r , yields

$$(12) \quad \frac{\partial w}{\partial t_r} = \frac{-(1-s)r^*(1-t_r^*)}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} < 0.$$

A marginal increase in the domestic corporate tax rate raises the required pre-tax return on domestic investment, thereby reducing the equilibrium wage rate.

The impact of a marginal change in the corporate tax rate on the wage tax rate, the last expression on the righthand side of (11), is obtained by differentiating the government budget constraint, equation (2), while taking investment behavior and other assumptions into account. Substituting equation (10) into (4), and using equation (9) to express $w = w(t_r)$, the government budget constraint (2) implicitly defines the labor income tax rate, t_w , as a function of the corporate tax rate, t_r :

$$(13) \quad \frac{(1-\alpha)}{\alpha} w(t_r) \bar{L} (1-s) t_r + w(t_r) \bar{L} t_w = G.$$

Implicit differentiation of equation (13) with respect to t_r , where t_w is given as a function of t_r gives

$$(14) \frac{\partial t_w}{\partial t_r} = - \left[\frac{\frac{(1-\alpha)\bar{L}t_r(1-s)+t_w\bar{L}}{\alpha}}{w\bar{L}} \right] \frac{\partial w}{\partial t_r} - \left[\frac{\frac{(1-\alpha)w\bar{L}(1-s)}{\alpha}}{w\bar{L}} \right].$$

Substituting equation (12) and (14) into (11), and implementing (9), yields

$$(15) \frac{\partial w}{\partial t_r} = \frac{-(1-s)r^*(1-t_r^*)}{[s(1-t_r^*)+(1-s)(1-t_r)]^2} \bar{L} \left(\frac{w}{\alpha} \right)^{\frac{1}{1-\alpha}} \left[\frac{1}{\alpha} (1-s)t_r + st_r^* \right] < 0$$

for positive tax rates.

Equation (15) implies that worker welfare increases when the corporate tax rate is reduced. The welfare effect hinges on how tax-induced changes in the required pre-tax return translate into wages relative to the implied adjustment in labor taxation. The underlying mechanism is straightforward: a lower corporate tax rate reduces the required pre-tax return on domestic investment, which in turn raises the equilibrium wage. The resulting wage increase generates a welfare gain that outweighs the welfare cost associated with the adjustment in labor income taxation required to satisfy the government budget constraint. Although a corporate tax cut reduces corporate tax revenue directly, it also stimulates investment, while the lower required pre-tax return reduces the tax base.

The relative strength of these effects depends on the extent of profit shifting. When a smaller share of profits is shifted abroad, the reduction in the required pre-tax return is larger, leading to a stronger wage response. At the same time, the corporate tax base becomes more sensitive to the rate cut, increasing the required adjustment in labor taxation. The overall conclusion nonetheless holds for all interior values of the profit-shifting share, except in the corner case in which all profits are shifted abroad.

A domestic corporate tax rate below a strictly positive foreign rate generates tax savings through inward profit shifting. The model does not specify the foreign response, although a reduction in the foreign tax rate is plausible. From equation (15), the right-hand side is positive, negative, or zero when the domestic rate is negative, positive, or zero, respectively, assuming a zero foreign rate. The optimal corporate tax rate is therefore zero. The decentralized equilibrium thus entails a race to the bottom.

4.2. Profit shifting regulations

This subsection isolates the welfare effects of profit-shifting regulations while holding the statutory tax rate constant. It examines how welfare is affected by a more lenient regulatory policy, corresponding to a higher share of profits shifted abroad. Within the model framework, such a policy corresponds to an increase in s , the share of profits shifted abroad. Enforcement and

administrative costs associated with profit-shifting regulations are abstracted from in the model framework.

The welfare effect of a marginal change in s is obtained by differentiating the welfare function (1) with respect to s , where both t_w and w are given as functions of s :

$$(16) \frac{\partial W}{\partial s} = \frac{\partial w}{\partial s} (1 - t_w) \bar{L} - w \bar{L} \frac{\partial t_w}{\partial s}.$$

The impact of a marginal change in s on the wage rate, the first expression on the righthand side of (16), is obtained by differentiating the rate of return requirement, equation (9). Implicit differentiation of (9), where w is a function of s , implies that

$$(17) \frac{\partial w}{\partial s} = \frac{(t_r - t_r^*) r^* (1 - t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1 - t_r^*) + (1 - s)(1 - t_r)]^2} > 0$$

when $t_r > t_r^*$.

A marginal reduction in s therefore lowers the equilibrium wage rate whenever the domestic tax rate exceeds the foreign tax rate.

The impact of a marginal change in s on the wage tax rate, the last expression on the righthand side of (16), is obtained by differentiating the government budget constraint, equation (2), while taking investment behavior and other assumptions into account. The labor income tax rate as an implicit function of the share of profit shifted abroad, s , is found by inserting equation (9), which gives $w = w(s)$, and equation (10) combined with (4) into the government budget constraint, equation (2). Hence, the labor income tax rate as an implicit function of s is:

$$(18) \frac{(1-\alpha)}{\alpha} \bar{L} t_r w(s) (1 - s) + w(s) t_w \bar{L} = G.$$

Appendix A shows that the welfare effect of a marginal change in s is

$$(19) \frac{\partial W}{\partial s} = \frac{r^* (1 - t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} \bar{L}}{[s(1 - t_r^*) + (1 - s)(1 - t_r)]^2} \left[(t_r - t_r^*) \frac{1}{\alpha} (1 - s) t_r - t_r^* (1 - t_r) \right].$$

The welfare effect depends on the trade-off between a broader tax base and an increase in the required return to capital, governed by the tax differential. Inspection of equation (19) shows that the first expression on the righthand side is positive. The last parenthesis on the righthand side is negative when the tax differential, $t_r - t_r^*$, is marginal and $t_r^* > 0$. Hence, profit shifting regulations which contribute to reducing profit shifting generate a welfare gain in this case. The intuition is that when the tax differential is marginal, stricter regulations have only a limited effect on the required pre-tax rate of return, and therefore only a marginal effect on the wage rate. At the same time, the domestic corporate tax base expands, increasing corporate tax revenue when the domestic

corporate tax rate is positive. To satisfy the government budget constraint, the labor income tax can be reduced. Since wages fall only marginally while the labor tax is lowered, worker welfare rises. As noted above, corporate tax rates have declined in most Western countries. Consequently, this result is likely to be relevant for a broad set of economies.

When the tax differential is large, however, a reduction in the share of profits shifted abroad increases the required pre-tax return and thereby reduces the equilibrium wage rate. To illustrate this case, assume that the tax rate abroad, t_r^* , equal to zero, representing the maximum possible tax differential. Inserting this condition into (19) yields

$$(20) \quad \frac{\partial W}{\partial s} = \frac{r^* \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} L t_r^{\frac{1}{\alpha}} (1-s) t_r}{[s + (1-s)(1-t_r)]^2}.$$

Inspection of equation (20) shows that $\frac{\partial W}{\partial s} > 0$ if $t_r > 0$ and $s < 1$. Under these conditions, relaxing profit-shifting regulations generates a welfare gain. The intuition is that increased profit shifting lowers the required pre-tax rate of return on investment, thereby raising the equilibrium wage. Although the labor income tax rate must be adjusted to satisfy the government budget constraint, the associated welfare loss is comparatively modest.

5. Public spending linked to wages

The majority of public spending is directly linked to the wage rate. In particular, expenditures on public employment and transfers indexed to wages both increase proportionally with wages. As a result, policies that raise the wage rate also expand public spending, thereby affecting the overall welfare impact of policy changes. This feature is incorporated into the model framework by assuming that public spending consists of wages paid to a fixed number of public employees, $\bar{L}_g$. Public employees are included in the welfare function, such that welfare is given by

$$(21) \quad W = w(1 - t_w)\bar{L} + w(1 - t_w)\bar{L}_g.$$

The government budget constraint becomes

$$(22) \quad P_k K(1 - s)t_r + w(\bar{L} + \bar{L}_g)t_w = w\bar{L}_g.$$

Appendix B and C show that the welfare effects of changes in the corporate tax rate and in the extent of profit shifting remain as characterized in equations (15) and (19), respectively. The main results are therefore robust to allowing public expenditures to vary with the wage rate. The explanation is found by rewriting the government budget constraint so that

$$(23) \quad P_k K(1 - s)t_r + w\bar{L}t_w = w(1 - t_w)\bar{L}_g.$$

Comparing equations expressing welfare and the government budget constraint, i.e. equations (21) and (23) with equations (1) and (2), shows that welfare gains associated with public employment, the last expression on the righthand side of (21), is matched by an identical tax revenue requirement, the expression on the lefthand side of (23). Hence, welfare gains associated with public employment are cancelled out by equivalent increases in tax revenue requirements. The welfare effects of tax policy are consequently identical in the case of public employment and in the case of a fixed revenue requirement. These symmetric adjustments to the welfare function and the budget constraint explain why the results coincide.

6. Discussion

The analysis treats the share of profits shifted abroad as exogenous and therefore not directly linked to profit-shifting regulations or tax differentials between domestic and foreign jurisdictions. This assumption can be rationalized for intermediate tax differential levels, where multinational firms are likely to fully exploit available profit-shifting opportunities and the marginal cost of maintaining such arrangements is relatively low. As the tax differential narrows, however, incentives to shift profits weaken and the extent of profit shifting is likely to decline. Endogenizing profit shifting would likely preserve the main insights while reinforcing the central trade-off identified in the analysis: tighter regulation would affect both the domestic tax base and firms' avoidance behavior, while leaving the role of the tax differential in shaping welfare effects intact. The results should therefore be interpreted as capturing the core mechanisms operating through these channels.

Labor supply is assumed to be exogenous, abstracting from welfare losses associated with labor supply distortions. The welfare measure is defined in terms of the after-tax wage, which would also be the relevant object under endogenous labor supply. Allowing for endogenous labor supply would therefore mainly introduce additional distortionary margins without altering the central welfare mechanisms emphasized in the analysis.

The analysis assumes that prices are exogenously given, capturing the market power exercised by multinational firms. An alternative approach would model monopolistic competition with downward-sloping demand arising from product differentiation (e.g., due to branding or patent protection), generating pure profits. Huizinga and Nielsen (1997) show that when pure profits can be fully taxed, source-based taxes on marginal investment effectively vanish. Consistent with this, Juranek, Schindler, and Schneider (2023) show that a positive royalty withholding tax can be optimal as a unilateral policy, effectively curbing profit shifting. The extent to which the results are sensitive to the specific modeling of market power therefore remains ambiguous.

The analysis assumes that the government can effectively enforce measures limiting profit shifting. In practice, multinational firms employ a wide range of strategies—including transfer pricing, intragroup lending, and the location of intangible assets—which may require differentiated and costly regulatory responses. Although such costs are abstracted from in the model framework, they are as mentioned unlikely to modify the fundamental trade-off underpinning the results.

The model framework abstracts from sectoral heterogeneity. In practice, both foreign direct investment and profit-shifting opportunities vary across sectors. In sectors characterized by relatively immobile capital or limited multinational activity, the required rate of return may be

largely unaffected, dampening wage responses. Given that wage increases are central to the welfare gains from corporate tax reductions in the model, such effects may dampen the aggregate wage response, thereby lowering overall welfare gains.

Extending the analysis to a numerical computable general equilibrium framework with multiple sectors, endogenous labor supply, and explicit modeling of profit-shifting margins would allow for quantitative evaluation. This constitutes a natural direction for future research rather than a limitation of the present framework, however.

7. Conclusion

This paper has identified a central asymmetry in the welfare effects of corporate tax policy in a small open economy with profit shifting. Within the framework of the model, unilateral reductions in corporate tax rates unambiguously raise welfare by lowering the required pre-tax return and increasing wages, while the welfare effects of profit-shifting regulations depend critically on the domestic–foreign tax rate differential. When the tax differential is small, tighter regulation expands the domestic tax base with only limited effects on investment, thereby increasing welfare. When the tax differential is large, however, restricting profit shifting raises the required return to capital and reduces wages, implying a welfare loss. This distinction highlights that corporate tax rates and profit-shifting regulations are not equivalent policy instruments and gives rise to different implications for the need for international coordination.

These findings suggest that international coordination remains crucial for addressing tax rate competition, which continues to exert downward pressure on corporate tax rates. By contrast, the case for coordination in restricting profit shifting is less clear-cut when tax differentials are modest, as effective unilateral policies may already deliver welfare gains.

The analysis abstracts from several features of real-world tax systems that may be important for policy design. In particular, corporate income taxation is considered in isolation from the broader tax system. However, setting taxes below their intended levels is also likely to induce income shifting between labor and capital (Gordon and MacKie-Mason, 1994). A closer alignment between corporate and personal capital taxation could therefore influence the transmission of tax policy to investment and wages. More broadly, the results point to several avenues for future research, including the interaction between tax enforcement and corporate taxation, as well as the role of market imperfections in shaping optimal tax policy.

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Appendix A

Implicit differentiation of (18) with respect to s , where t_w is treated as a function of s , yields

$$(A1) \frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) \frac{\partial w}{\partial s} - \frac{(1-\alpha)}{\alpha} \bar{L} t_r w(s) + t_w \bar{L} \frac{\partial w}{\partial s} + w(s) \bar{L} \frac{\partial t_w}{\partial s} = 0.$$

Substituting (17) into (A1) gives

$$(A2) \frac{\partial t_w}{\partial s} = \frac{-\left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + t_w \bar{L}\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} + \frac{(1-\alpha)}{\alpha} t_r}{w \bar{L}}$$

Substituting (A2) into (16) yields

$$(A3) \frac{\partial w}{\partial s} = \frac{\partial w}{\partial s} (1 - t_w) \bar{L} + \left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + t_w \bar{L}\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} - \frac{(1-\alpha)}{\alpha} w \bar{L} t_r$$

and substituting (17) into (A3) gives

$$(A4) \frac{\partial w}{\partial s} = \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} (1 - t_w) \bar{L} + \left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + t_w \bar{L}\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} - \frac{(1-\alpha)}{\alpha} w \bar{L} t_r.$$

Finally, substituting equation (9) into (A4) gives

$$(A5) \frac{\partial w}{\partial s} = \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} (1 - t_w) \bar{L} + \left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + t_w \bar{L}\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} - \frac{[s(1-t_r^*) + (1-s)(1-t_r)] r^* (1-t_r^*) t_r \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \bar{L}.$$

Hence,

$$(A6) \frac{\partial w}{\partial s} = \frac{r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} \bar{L}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \left[(t_r - t_r^*) (1 - t_w) + \frac{(1-\alpha)}{\alpha} t_r (1-s) (t_r - t_r^*) + t_w (t_r - t_r^*) - s(1-t_r^*) t_r - (1-s)(1-t_r) t_r \right].$$

Hence,

$$(A7) \frac{\partial w}{\partial s} = \frac{r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} \bar{L}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \left[(t_r - t_r^*) \frac{1}{\alpha} (1-s) t_r - t_r^* (1-t_r) \right].$$

Appendix B

The welfare effect of a marginal change in the corporate tax rate is obtained by differentiating (21) with respect to t_r , where both t_w and w are given as functions of t_r :

$$(B1) \frac{\partial W}{\partial t_r} = \frac{\partial w}{\partial t_r} (1 - t_w)(\bar{L} + \bar{L}_g) - w(t_r)(\bar{L} + \bar{L}_g) \frac{\partial t_w}{\partial t_r}.$$

The government budget constraint (22) implicitly defines the labor income tax rate, t_w , as a function of the corporate tax rate, t_r :

$$(B2) \frac{(1-\alpha)}{\alpha} w(t_r) \bar{L} (1-s) t_r + w(t_r) (\bar{L} + \bar{L}_g) t_w = w(t_r) \bar{L}_g.$$

Implicit differentiation of equation (B2) with respect to t_r , where t_w is given as a function of t_r gives

$$(B3) \frac{\partial t_w}{\partial t_r} = - \left[\frac{\frac{(1-\alpha)}{\alpha} \bar{L} (1-s) t_r + t_w (\bar{L} + \bar{L}_g) - \bar{L}_g}{w(\bar{L} + \bar{L}_g)} \right] \frac{\partial w}{\partial t_r} - \left[\frac{\frac{(1-\alpha)}{\alpha} w(t_r) \bar{L} (1-s)}{w(\bar{L} + \bar{L}_g)} \right].$$

Substituting equation (12) and (B3) into (B1), and implementing (9), yields

$$(B4) \frac{\partial W}{\partial t_r} = \frac{-(1-s)r^*(1-t_r^*)\bar{L}}{[s(1-t_r^*)+(1-s)(1-t_r)]^2} \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} \left[\frac{1}{\alpha} (1-s)t_r + s t_r^*\right].$$

Appendix C

The welfare effect of a marginal change in s is obtained by differentiating the welfare function (21) with respect to s , where both t_w and w are given as functions of s :

$$(C1) \quad \frac{\partial W}{\partial s} = \frac{\partial w}{\partial s} (1 - t_w)(\bar{L} + \bar{L}_g) - w(\bar{L} + \bar{L}_g) \frac{\partial t_w}{\partial s}.$$

The labor income tax rate implicitly as a function of s is:

$$(C2) \quad \frac{(1-\alpha)}{\alpha} \bar{L} t_r w(s)(1-s) + w(s)(\bar{L} + \bar{L}_g) t_w = w(s) \bar{L}_g.$$

Implicit differentiation of (C2) with respect to s , where t_w is treated as a function of s , yields

$$(C3) \quad \frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) \frac{\partial w}{\partial s} - \frac{(1-\alpha)}{\alpha} \bar{L} t_r w(s) + (\bar{L} + \bar{L}_g) t_w \frac{\partial w}{\partial s} + w(s)(\bar{L} + \bar{L}_g) \frac{\partial t_w}{\partial s} = \bar{L}_g \frac{\partial w}{\partial s}.$$

Substituting (17) into (C3) gives

$$(C4) \quad \frac{\partial t_w}{\partial s} = \frac{-\left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + (\bar{L} + \bar{L}_g) t_w - \bar{L}_g\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2}}{w(\bar{L} + \bar{L}_g)} + \frac{\frac{(1-\alpha)}{\alpha} \bar{L} t_r w}{w(\bar{L} + \bar{L}_g)}.$$

Substituting (C4) into (C1) yields

$$(C5) \quad \frac{\partial W}{\partial s} = \frac{\partial w}{\partial s} (1 - t_w)(\bar{L} + \bar{L}_g) + \left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + (\bar{L} + \bar{L}_g) t_w - \bar{L}_g\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} - \frac{(1-\alpha)}{\alpha} \bar{L} t_r w.$$

and substituting (17) and (9) into (C5) gives

$$(C6) \quad \frac{\partial W}{\partial s} = \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} (1 - t_w)(\bar{L} + \bar{L}_g) + \left[\frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s) + (\bar{L} + \bar{L}_g) t_w - \bar{L}_g\right] \frac{(t_r - t_r^*) r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} - \frac{[s(1-t_r^*) + (1-s)(1-t_r)] r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \bar{L} t_r.$$

Hence,

$$(C7) \quad \frac{\partial W}{\partial s} = \frac{r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \left[(t_r - t_r^*) (1 - t_w)(\bar{L} + \bar{L}_g) + \frac{(1-\alpha)}{\alpha} \bar{L} t_r (1-s)(t_r - t_r^*) + (\bar{L} + \bar{L}_g) t_w (t_r - t_r^*) - \bar{L}_g (t_r - t_r^*) - s(1 - t_r^*) \bar{L} t_r - (1-s)(1 - t_r) \bar{L} t_r \right].$$

Hence,

$$(C8) \quad \frac{\partial W}{\partial s} = \frac{r^* (1-t_r^*) \left(\frac{w}{\alpha}\right)^{\frac{1}{1-\alpha}} \bar{L}}{[s(1-t_r^*) + (1-s)(1-t_r)]^2} \left[(t_r - t_r^*) \frac{1}{\alpha} (1-s) t_r - t_r^* (1 - t_r) \right].$$