
International Aspects of Corporate Income Taxes and Associated Distortions

Liucija Birskyte and Gintare Giriuniene

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/intechopen.74213>

Abstract

The purpose of this chapter is to review the latest developments in corporate income tax (CIT) focusing on its international aspects and associated distortions. In this endeavor, the chapter draws on evidence provided by the leading tax experts as well as on the profound and rigorous research produced by academia. This chapter examines and synthesizes research on tax competition, relationship between tax rates and foreign direct investment (FDI), and tax avoidance as a result of differential tax regimes. Trends in the development of CIT are discerned using statistical data provided by OECD and European Commission. Numerous studies done on global, regional, and country-specific datasets support the premise that indeed tax competition for capital exists though the magnitude of effects varies. There is also enough evidence that tax avoidance and evasion through base erosion and profit shifting persist for some time and may be on the rise.

Keywords: corporate income tax, tax competition, tax avoidance, foreign direct investment, multinationals

1. Introduction

Corporate income taxes (CIT) are paid by companies including those operating in several countries. Therefore, there is a strong international aspect in its design, administration, and compliance. In scientific and professional literature, this aspect is covered under the topics of tax competition, tax coordination, and tax harmonization. The scientific interest in international tax competition and related topics is not new. The interest is sustained by a rising capital mobility in the last 40 years and increasing concerns over capital flight and loss of public revenue due to base erosion and profit shifting. The problem stems from the dual objectives of

the governments. On the one hand, governments seek to attract investment into the country, or region, or locality, and therefore offer incentives to potential investors often in the form of preferential tax treatment. In doing so, governments engage in harmful or wasteful tax competition. On the other hand, governments need to collect enough tax revenue in order to provide a sufficient level and quality of public services and fulfill other functions demanded by the public. This calls for a rather complicated balancing between those objectives. Loss of revenue may lead to suboptimal provision of public services or require difficult policy decisions on the higher level of government or at the supranational level, including tax coordination and tax harmonization.

Theoretical studies in public economics provide the conditions for the economic effects of tax competition to be either harmful or useful [1–3]. Those conditions are varied and often hard to reconcile in theoretical models. In empirical research, they lead to inconclusive results. Negative economic effects of tax competition include “base erosion” of taxes on mobile factors of production that ultimately leads to the underprovision of public services and frustrates governments’ efforts to redistribute income. The useful effects of tax competition are largely supported by the initiators and followers of public choice theory who find in tax competition efficiency-increasing effects. It limits the tendency of local governments to overexpansion and constrains the growth of a Leviathan state [4, 5]. Empirical literature on tax competition leaves us with a similarly diverse picture [1, 3].

This chapter attempts to synthesize growing scholarship on the economic effects of tax competition and includes the review of the latest trends in CIT, foreign direct investment (FDI), and profit shifting. The topic is of high relevance since tax avoidance and evasion through base erosion and profit shifting continue unabated for some time and may be on the rise due to the ever more sophisticated tax-reducing techniques used by multinationals and increasingly mobile individuals [6–10].

The sections that follow will (1) review the theory of tax competition including “basic tax competition model” and its extensions, (2) present recent trends in corporate income tax rates and revenue in the EU and OECD countries, (3) survey empirical literature on tax competition, including evidence of the relationship between tax rates and FDI, and (4) outline what is known about the magnitude of tax avoidance through base erosion and profit shifting. Finally, the last section concludes.

2. Tax competition theory

There is an extensive literature on the theory of tax competition. The modern literature on tax competition began with Oates’s discussion on the potential efficiency problems associated with competition for capital by local governments [2, 11]. Under certain assumptions, small jurisdictions competing for mobile capital reduce tax rates to such level that leads “to less than efficient levels of output of local services” ([1] p. 654). In a small jurisdiction, competition leads to the abandonment of taxes on capital income altogether which produces “race to the bottom” ([1] p. 651). Oates’ concludes that this behavior is inefficient that rests on the idea that

this a zero-sum game. When all governments behave this way, none gain and consequently communities are all worse off than they would have been if local managers had made decisions based on marginal costs [2]. More recent interest in the topic was prompted in part by fears that tax competition among the increasingly economically integrated EU nations will over time significantly reduce the level of capital income taxation to the extent of announcing the death of CIT [12]. Thus, governments must solely rely on financing their expenditures from the taxes on immobile factors of production (labor/land) and on consumption taxes, which have their own constraints and disadvantages.

“Basic tax competition model” has been built by Zodrow and Mieszkowski [13] and Wilson who formalized the notions on tax competition developed by Oates [2]. Alternatively, the model is known as a ZMW model or a simpler version, according to Wilson [2], is known as ZM model [14]. Similar to Tiebout’s model [15], the ZM model is built on those assumptions “(1) A large number of homogenous jurisdictions; (2) Perfectly competitive markets; (3) A Nash equilibrium in which each jurisdiction takes as fixed the after-tax return to capital and the tax rates set by other jurisdictions; (4) Fixed population and land in each jurisdiction; (5) Identical tastes and incomes for all residents of all jurisdictions; (6) A fixed national capital stock that is perfectly mobile across local jurisdictions; (7) A single good that is produced by capital and the fixed factor (labor/land) in each jurisdiction; (8) Government services that are “publicly provided private goods,” benefit only residents, have no spillover effects to other jurisdictions, and can be modeled as purchases of the single private good;(9) Two local tax instruments—a “property tax” that applies to capital income and a head tax; (10) Local governments that act to maximize the welfare of their (identical) residents” ([1, 15] p. 654).

In the ZM model, interjurisdictional competition results in “race to the bottom,” as all taxes on capital income are eliminated. Governments are only able to impose taxes on immobile factors of production only. The insight of this result serves as a model for a “small open economy” [16].

An important assumption of the basic tax competition model is that local public services are essentially another consumption good that enters individual utility functions. However, as Sinn correctly observes, one of the most important roles of government is to redistribute income which has nothing to do with consumption goods [17]. Income redistribution at least partially represents social protection against income uncertainty attributable to different macroeconomic shocks and, more broadly, differences in natural endowments and access to education. Private markets fail to insure against income uncertainty and other risks; therefore, public programs designed to smooth such shocks improve both equity and efficiency of resource allocation. Tax competition results in lower tax rates on mobile factors of production and thus limits the power of governments to engage in redistributive activities. It imposes important social costs. In case of perfect mobility of both capital and highly skilled labor, tax competition implies that only benefit taxes can be levied and the policy of income redistribution is given up. Though Sinn’s observation relaxes one of the assumptions of the basic model, it fundamentally reinforces the central message of the basic model.

Since the development of the basic tax competition model, many extensions have been added by changing one or several assumptions of the basic model; for complete list and details, see Zodrow [1]. Some of those modifications support the results of the basic model and find inefficiencies due to tax competition, while others find efficiency enhancing effects of tax competition. The extensions that assume heterogeneous rather than homogeneous jurisdictions and include trade among members of the union or trade with the rest of the world find harmful effects to tax competition. The modification of the model which assumes variable labor supply (instead of fixed) also does not change the results of the basic model.

Another departure from the ZM model is the existence of “interregional externalities.” In this case, the actions that one region’s government takes to increase the welfare of its own residents lead to reductions in the welfare of residents in other regions. In the tax competition literature, this externality is often described as a “fiscal externality,” which occurs through the effects of one region’s public policies on the government budgets in another region [18]. For example, when a region lowers its tax rate on mobile capital, it gains capital at the expense of other regions, causing their tax bases to fall and, hence, their tax revenues to decline. Because governments are assumed not to possess unlimited taxing powers, the presence of such externalities reinforces the message of the ZM model (Wilson [2]).

However, other extensions of the basic model, such as the existence of international trade with the presence of agglomeration economies [19] and international public good spillovers do not support the conclusion of the ZM model. Adding the combination of labor mobility and population scale economies to the model yields interesting results. With scale economies, underprovision of local public services tends to decline and disappears entirely in the limiting case of a pure public good [1]. Therefore, this extension contradicts the proposition of the basic tax competition model.

A special niche in this discussion is reserved for public choice literature, which traditionally argues that jurisdictional governments in the union do not act to maximize the welfare of their residents but to achieve their own objectives that are typically positively related to the size of the budget. Under this view, government bureaucrats strive to maximize the budgets of their agencies and increase their own power and prestige. In the public choice literature, tax competition is not a source of inefficiency. On the contrary, tax competition serves a valuable social purpose in constraining government officials who are naturally predisposed to raise revenue to serve their own rather than public interests. To Brennan and Buchanan for instance, “... tax competition among separate units ... is an objective to be sought in its own right” ([4] p. 186). In this context, tax competition plays an important role in limiting budget-maximizing behavior of government officials. It restricts the growth of public finance and curbs the expansion of a Leviathan state.

The results of the tax competition literature are mixed to such a degree that it is difficult to draw unambiguous conclusions. It is obvious that the key point of the basic tax competition model (as well as those extensions that reinforce its conclusions) is that tax competition is harmful and leads to inefficient underprovision of public services. On the other hand, some of the extensions to the basic model suggest that tax competition may be desirable as it limits the undue expansion of public budgets.

3. Empirical evidence of tax competition

3.1. Trends in corporate income taxes

As a consequence of the difficulty to develop one and conclusive theory, the empirical literature on tax competition burgeoned in recent years. However, meta-analysis reveals that results are as diverse as those in theoretical analyses [3]. First, the empirical evidence of tax competition and “race to the bottom” depend on the choice of parameters. Second, the findings are not conclusive. For example, there is mixed evidence if rate reductions in the face of increased international capital mobility are actually occurring. At first glance, the reduction of CIT rates is undisputable. CIT statutory rates¹ have decreased substantially in the EU over the past 22 years, with the average rate falling from 35% in 1995 to 22% in 2017, which constitutes a fall of 37.4% from 1995 to 2017 in EU 28 countries [20]. As indicated in **Figure 1**, the decrease of CIT rates in new EU member states (those who joined EU in 2004 and later) is even more substantial. The average statutory rates have decreased from the average rate of 31% in 1995 to 18% in 2017. This constitutes a fall of 43.6% or an average annual rate of minus 3% during the same period. In old EU member states (EU-15), statutory rates fell at an average annual rate of -2% as shown in **Figure 2**.

As indicated in **Figure 3**, in OECD countries combined central and local government, average statutory rates have fallen by 25.6% from an average CIT rate of 32.5% in 2000 to an average

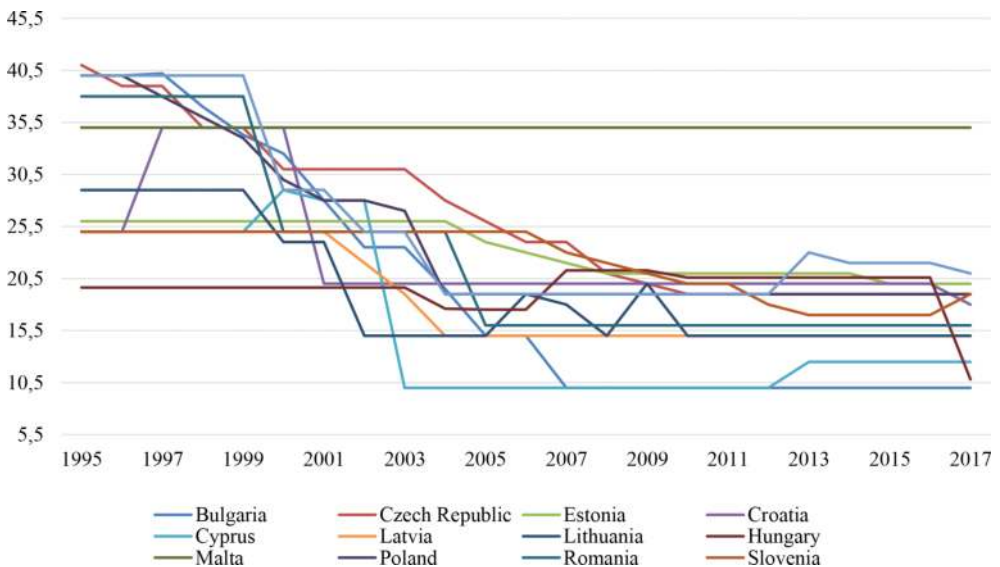


Figure 1. Statutory corporate income tax rates for new EU member states. Source: European Commission. Data on Taxation (2017).

¹Statutory, or nominal, tax rates are rates stated in a tax law (statute, code) expressed usually in percentage terms to be applied to a tax base, for example, taxable income.

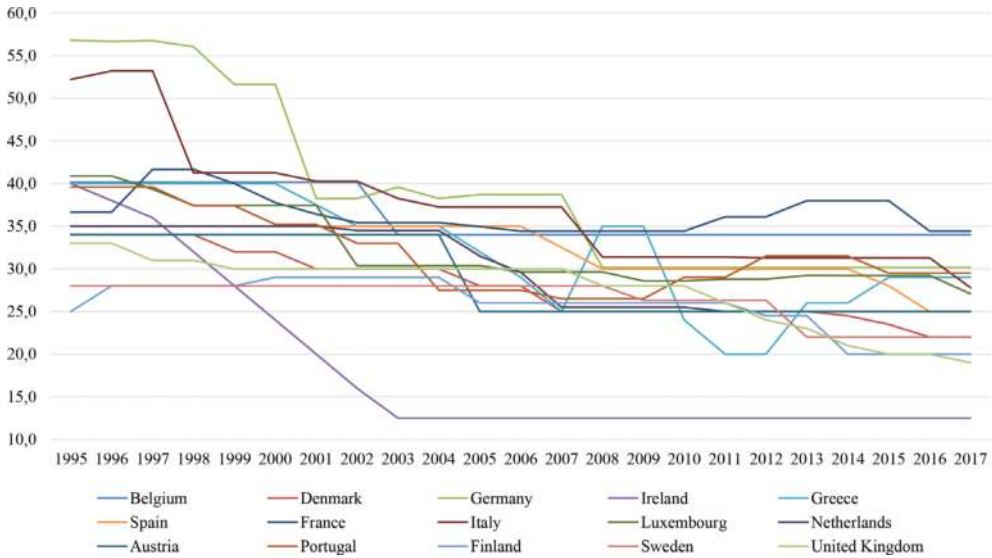


Figure 2. Statutory corporate income tax rates for old EU member states (EU-15). Source: European Commission. Data on Taxation (2017).

CIT rate of 24.2% in 2017 [21]. The statutory rates have fallen in virtually each OECD member state with an exception of Chile where CIT rate has increased by 10% points. The largest fall in the CIT statutory rate has occurred in Germany, albeit from a very high level of 52% in 2000 to 30.2% in 2017, while the change of CIT rate in the United States was incremental (-0.43% points).

However, this evidence becomes less remarkable when base-broadening measures² are taken into account leading to much less conspicuous fall in average effective tax rates. As shown in Figure 4, average effective tax rates measured as CIT revenue as a % of GDP has stayed overall even. They have decreased by 15% from 2000 to 2014 or at an average annual rate of -1.12%, with the effects of the economic boom and recession standing out.

These trends support previous findings by Grubert that the greatest declines in tax rates were in small, open and relatively poor countries—the countries that are arguably most vulnerable to the effects of tax competition, like new EU member states [22]. These results suggest that the rate reductions predicted by the theory of tax competition are actually occurring. Indeed, governments engage in two-dimensional tax competition. They concurrently compete over effective marginal tax rates for capital and over statutory rates for profits [23]. Evidence from Belgium suggests of regional tax competition taking place between different regions, with a lower effective tax rate (ETR) in the peripheral region of Wallonia than in Flanders [24].

However, it should be noted that reasons other than the tax competition for mobile capital might explain the fall in statutory CIT rates. In particular, this result can be explained by

²Like taxation of previously untaxed items such as short-term capital gains.

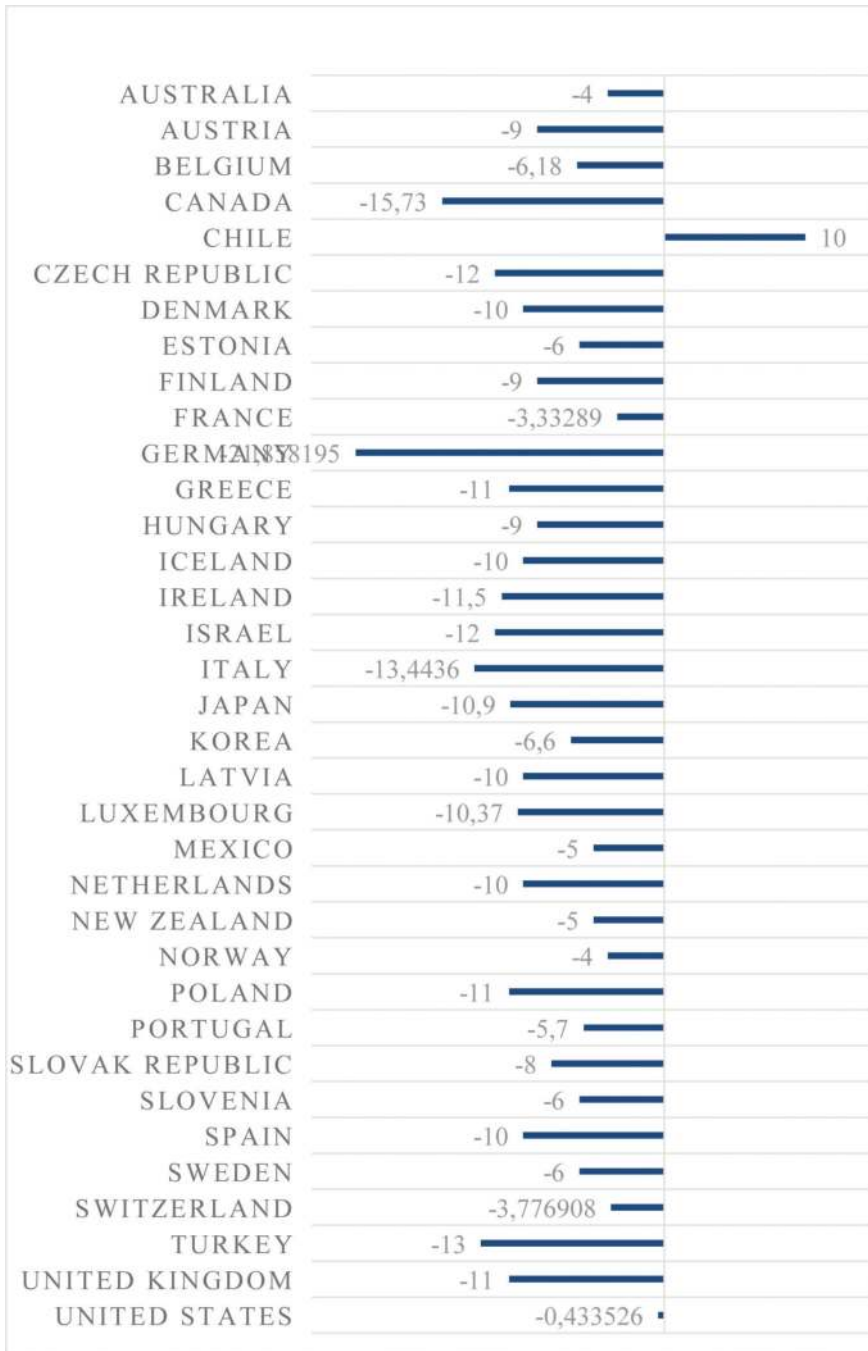


Figure 3. Statutory corporate income tax rates in OECD countries. Difference from 2000 to 2017. Source: OECD (2017).

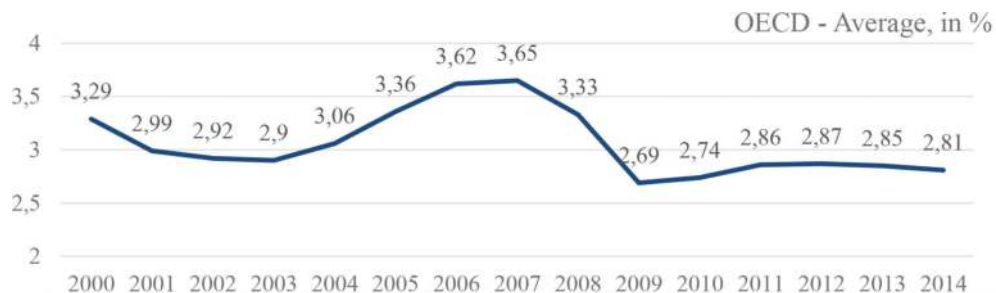


Figure 4. Corporate Income Tax Revenue as percentage of GDP, OECD countries. Source: OECD (2017).

the reforms undertaken by policy makers to adopt base-broadening, rate-reducing measures consistent with persisting reform recommendations to improve the efficiency, equity, and simplicity of the tax system [25]. Besides, reductions in statutory rates can also be explained as an attempt to minimize a country's vulnerability to the use of transfer pricing by multinational enterprises to move deductions to high-tax countries and receipts to low-tax countries [26]. This is consistent with tax avoidance problem caused by capital mobility and tax rate differentials discussed in the following sections.

3.2. Tax rates and foreign direct investment

Since the 1980s, the relation between FDI and corporate taxation policy has been widely studied, and the pioneers in research have focused primarily on the FDI flows sensitivity to capital tax rate [3]. Despite abundant literature, the consensus on the effect of the corporate taxation on FDI in today's globalized economies has not been reached. Some of the studies find no impact of tax reduction on FDI, but the other studies argue about the negative relationship between taxation policies and FDI gravity.

Hunady and Orviska examine EU countries (except Estonia due to the unavailability of certain data) in the period between 2004 and 2011 and find no statistically significant effect of statutory corporate tax rate on the flow of FDI [27]. Similarly, Kersan-Skabic using data on EU transition economies fails to find evidence that tax rates significantly affect the long-run elasticity of FDI [28]. Studies of Daniels and Egger based on data from the US and other OECD countries basically do not confirm a precise impact of tax rates on the long-run elasticity of foreign investment [29, 30].

There exist even fewer studies which find any positive effect of corporate taxes on FDI. Herger finds that tax elasticity varies depending on the FDI strategy (with vertical FDI being in general more responsive) [31]. Salihu and Faria focus on emerging economies and they show that there is a positive relationship between FDI and the avoidance of corporate tax [32, 33]. Their research is based on Malaysian companies. The findings indicate that investors seek to avoid taxes in both host and parent countries.

The heterogeneity of empirical findings led to a need for concise and comprehensive review of the existing empirical evidence. In the meta-analysis undertaken by Feld and Heckemeyer,

a pooled effect based on the median result taken from each primary study was found. It amounts to semi-elasticity for company taxes on FDI (percentage reaction of FDI to one percentage point change in the tax burden) of 1.68 in absolute terms [3].

4. Distortionary effects of differential tax regimes

4.1. Distortionary effects of corporate income tax

As stressed by Cnossen and many others, even confined to the tax system of one country, the defects of the corporate income tax are numerous as it causes distortions of asset mix, capital allocation, financing and payout decisions, and the choice of organizational form [1, 34]. The main problem with capital taxation is that effective corporate tax and personal tax rates on investment returns vary depending on the choice of financing [35]. Investment can be made either through equity or debt. As a rule, debt finance is favored against equity finance because interest payments are deductible under most tax systems. The tax-favored status of debt discriminates against corporations that face difficulties in attracting debt [35]. Therefore, newly founded corporations have to sustain higher capital costs because of taxation than older, established corporations with either easier access to debt financing or sufficient retained profits to finance new investments.

The corporation's dividend policy produces yet another example of discrimination. Profits can be either distributed to shareholders as dividends or retained. When earnings are retained, the shareholders, instead of receiving dividends, benefit from an increase in the market value of the company. As a result of this bias in favor of retentions, equity funds may be locked in within certain companies rather than allocated between companies in the most efficient manner by financial markets [36]. Broadly, debt finance is favored against equity finance, and individual investors are discriminated relative to corporate investors. Therefore, differential tax rates and other tax structure features inherent to CIT distort investment decisions that should be based solely on economic costs and gains. Those features produce worldwide implications through the operations of multinationals.

4.2. Tax avoidance

As shown in **Figure 5**, OECD member states have widely diverging statutory CIT rates that may have externality effects on other member states. Statutory rates vary from 8.5% in Switzerland to 35% in the United States.

Different tax regimes have a direct bearing on tax avoidance. The main difference between tax evasion and tax avoidance is usually illegality of the former. Avoidance usually implies using and somewhat bending the tax laws in order to pay the least possible amount of taxes. It covers a broad range of behaviors. One example is to pay a tax professional to alert one to the deductibility of income earned from already undertaken activities. Another example is to change the legal form of a given behavior, such as reorganizing a business from one form of corporation to another, recharacterizing ordinary income as capital income or retiming the transaction to alter the tax year it falls under [37].

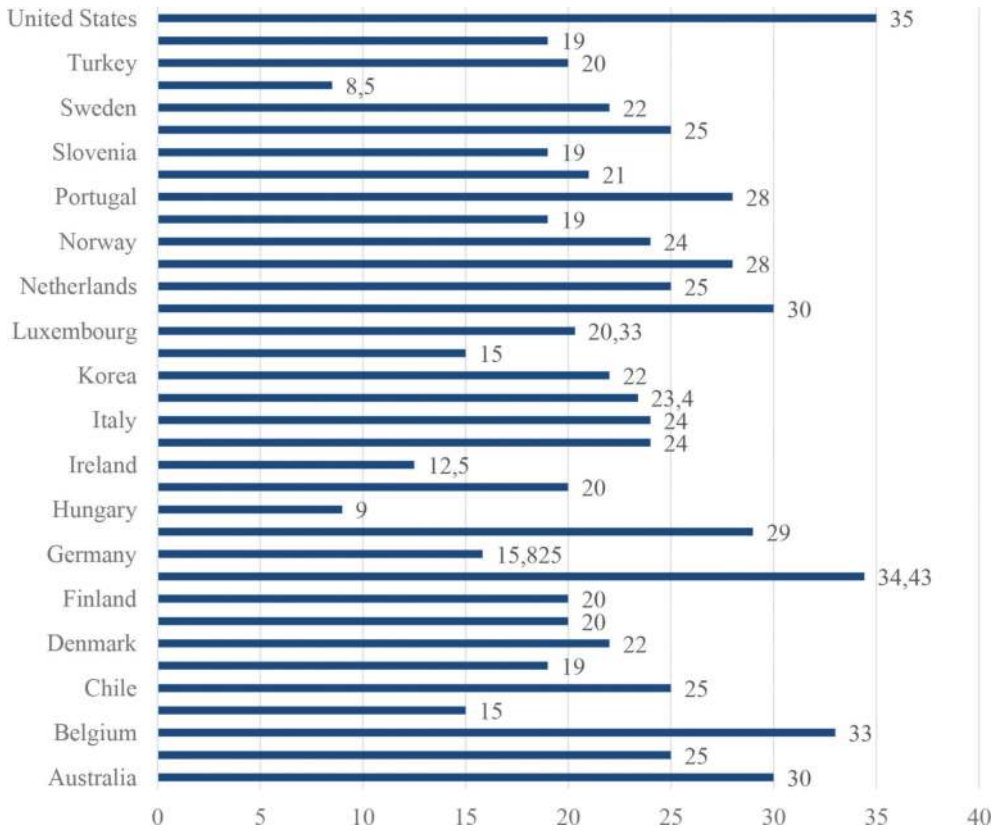


Figure 5. Statutory corporate income tax rates of the OECD countries in 2017 (in %). Source: OECD, 2017.

International investors often have at their disposal numerous alternative methods of structuring and financing their investments, arranging transactions between related parties located in different countries and returning profits to investors. Sophisticated international tax avoidance typically entails reallocating taxable income from countries with high-tax rates to countries with low-tax rates and may also include the changing the timing of income recognition for tax purposes. Since interest, as a rule, is tax deductible while dividends are taxed, it is beneficial for the companies to use debt to finance foreign affiliates in high-tax countries and to use equity to finance affiliates in low-tax countries [8]. Another vehicle to reduce taxation of passive income is the use of hybrid entities or hybrid instruments that are treated differently in different jurisdictions. A new regulation has been introduced in the late 1990s in the USA with an intention to simplify questions of whether a firm was a corporation or a partnership. The application of the rule to foreign circumstances has led to a situation where an entity can be recognized as a corporation by one jurisdiction but not by another. For example, a US parent's subsidiary in a low-tax country can lend to its subsidiary in a high-tax country, with the interest deductible because the high-tax country recognizes the firm as a separate corporation.

There are also hybrid instruments that can avoid taxation by being treated as debt in one jurisdiction and equity in another [8].

The empirical evidence is broadly consistent with these incentives. The reported profitability of multinational firms is inversely related to local tax rates, a relationship that is at least partly the consequence of tax-motivated debt financing (thin capitalization)³, the pricing of intrafirm transfers, royalty payments⁴ and other such methods. Grubert estimates separate equations for dividend, interest, and royalty payments by foreign subsidiaries to American parent companies and finds that high corporate tax rates in countries in which American subsidiaries are located are correlated with higher interest payments and lower dividend payout rates [22]. Patterns of reported profitability are consistent with other indicators of aggressive tax avoidance behavior. It is widely accepted that firms adjust prices used for within-firm transactions with the goal of reducing their total tax obligations. There is substantial evidence of tax-motivated transfer pricing in US trade prices. Multinational firms typically benefit by reducing prices charged by affiliates in high-tax prices for items and services provided to affiliates in low-tax countries [7, 38]. Prior research has found significant effects of tax rates in affiliate and parent countries on the profit shifting behavior of multinational entities; however, the magnitude of the effects varies. The results measured in semi-elasticities range from close to zero to well above one [39].

The findings of the research based on the profit shifting behavior by US multinationals are supported by European evidence. Weichenrieder using data on German inbound and outbound FDI finds an empirical correlation between the home country tax rate of a parent and the net of tax profitability of its German affiliate that is consistent with profit shifting behavior. The result suggests that a 10% point increase in the parent's home country tax rate leads to roughly half a percentage point increase in the profitability of the German subsidiary [40]. Using a unique dataset containing detailed firm-level information on the parent companies and subsidiaries of European multinationals, Huizinga and Laeven build a model and empirically examine the extent of intra-European profit shifting by European multinationals. On average, they find a semi-elasticity of reported profits with respect to the top statutory tax rate of 1.3, while shifting costs are estimated to be 0.6% of the tax base. They come to the conclusion that international profit shifting leads to a substantial redistribution of national corporate tax revenues [41]. Evidence of income shifting in response to differences in corporate tax rates and the substantial loss of revenues from a unilateral increase in the corporate tax rate is also supported by the research by using data on a large selection of OECD countries [42].

The exception to the findings that support the central message of the basic tax competition model is the paper by Han and Leach who develop a model in which competing governments offer financial incentives to induce individual firms to locate within their jurisdictions [43]. Equilibrium is described under three specifications of the supplementary taxes. There

³Thin or hidden capitalization of a subsidiary arises when a foreign investor substitutes foreign debt capital for equity capital, particularly in cases where debt financing exhibits some of the characteristics of equity and the debt is owed to a related lender. (Shome, 1995)

⁴Withholding rates on cross-border interest and royalty payments are (which vary by class of payer and payee and by the financial instrument—in itself a source tax arbitrage) very low. (Cnossen, 2003)

is no misallocation of capital under two of these specifications, and there might or might not be capital misallocation under the third. This result contrasts strongly with the basic tax competition model which finds that competition among governments almost always leads to inefficient allocation of resources.

International tax avoidance is evidently a successful activity. Very little tax is paid on the foreign source income of US firms [8]. This has grave implications for domestic tax policy. “The international mobility of economic activity now dramatically reduces the ability to tax domestic income-producing activity too heavily. Indeed, the importance of this consideration raises the very real question of whether any longer exists such a thing as purely domestic tax policy” ([38] p. 319). It is really another way of saying that greater tax coordination between countries may be an answer to this international problem.

4.3. The revenue loss estimates of base erosion and profit shifting (BEPS)

In the aftermath of the global financial crisis, and the fiscal problems that followed in many countries, the public and policy makers paid greater attention to the tax avoidance of multinational companies. Similarly, researchers devoted greater efforts to estimating the scale and nature of the associated tax losses.

Corporate tax is an important source of government revenue in all regions of the world. As shown in **Figure 6**, though there is an annual fluctuation, on average in the OECD governments raise around 10% of their total tax revenue from CIT, which is approximately 3% of GDP [44]. CIT accounts for a larger share of total tax revenues on average in lower-income countries than in high-income countries [6].

Making estimates of the global losses due to base erosion and profit shifting requires complex and rigorous research. Currently, the most comprehensive studies available are from the International Monetary Fund (IMF) researchers Crivelli et al. and Cobham and Janský whose study has been recently published by the United Nations University World Institute for Development Economics Research (UNU-WIDER) in Helsinki [6, 9, 45].

Using panel data for 173 countries over 33 years, Crivelli et al. examine the magnitude and features of international fiscal externalities. In particular, they focus on the spillovers from tax policy decisions in individual jurisdictions onto others. They develop and use an innovative method allowing a distinction between spillover effects through real investment decisions

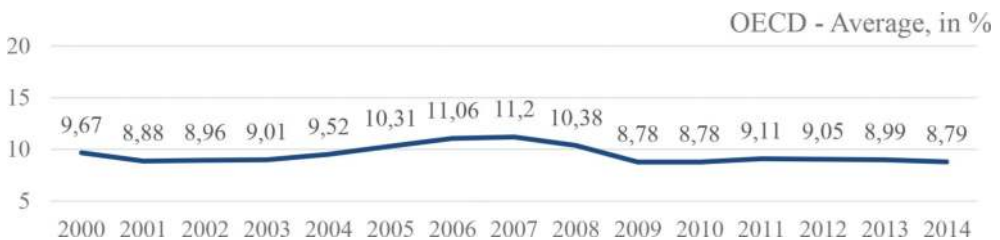


Figure 6. Taxes on corporate income as percentage of total taxation, OECD average. Source: OECD, 2017.

and through avoidance techniques and quantify the revenue losses through the latter. In total, they estimate global revenue losses at around US\$650 billion annually, of which around one-third relate to developing countries. The concentration as a share of gross domestic product (GDP) is somewhat higher in developing countries compared to OECD economies [45].

Cobham and Gibson combine this finding with data on the relatively greater reliance on corporate tax revenue in developing countries to show that the estimated losses are around 2–3% of total tax revenue in OECD countries, but 6–13% in developing countries [46].

Applying a methodology developed by researchers at the International Monetary Fund to an improved dataset Cobham and Jansky estimate revenue losses of around US\$500 billion per year globally [6]. Though the largest losses are suffered by rich economies such as the United States, relative losses are more intensive in lower-income countries. While any estimates of this intentionally hidden phenomenon are necessarily uncertain, the size of magnitude suggests that the economic development of countries may in some cases be substantially damaged by the activities of multinational companies.

In country-specific research, Clausing using Bureau of Economic Analysis survey data on US multinational corporations during 1983–2012 finds that profit shifting is likely costing the US government between \$77 billion and \$111 billion in corporate tax revenue by 2012, and these revenue losses have increased substantially in recent years [7]. Those findings are corroborated by other researchers who estimate that the US tax losses from profit shifting of multinational firms may approach or even exceed \$100 billion per year [8].

However, accumulated losses are staggering. Recent estimates show that Fortune 500 corporations are avoiding up to \$767 billion in US federal income taxes by holding more than \$2.6 trillion of “permanently reinvested” profits offshore. In their latest annual financial reports, 29 of these corporations reveal that they have paid an income tax rate of 10% or less in countries where these profits are officially held, indicating that most of these profits are likely in offshore tax havens [47].

This might be viewed as evidence that lowering corporate tax rates is an effective tool against avoidance. Narrower studies, however, such as the studies by Cobham and Jansky (2017) and Clausing [7] provide evidence that profit shifting has grown strongly even as effective tax rates have fallen. Cobham and Jansky (2017) document effective tax rates for US-headquartered multinationals of 0–5% in the major misalignment jurisdictions to which most profit is shifted, compared to 15–20% in the USA and other economies on average [6].

5. Conclusions

The survey of the literature in this chapter suggests that tax competition and related problems remain high on the agenda of policy makers as well as researchers. Since governments have the dual mission to attract investment into their jurisdiction and collect enough public revenue to provide public services, the tensions arise. In order to encourage FDI and other forms of investment, the governments offer tax incentives to potential investors. However, that often

means engaging in harmful competition with other jurisdictions. Such behavior is inefficient because it is a zero-sum game. When all governments behave this way, none gain and consequently communities are all worse off than they would have been if public managers had made decisions based on marginal costs. The tax competition may reduce tax revenues and lead to inefficient underprovision of public services.

The recent empiric evidence supports the central message of basic tax competition theory that competition for capital is actually occurring. It is manifested through the overall reduction in statutory and effective corporate income tax rates as well as sensitivity of FDI to tax burden. However, in addition to distortions in capital allocation arising from genuine productive activities, the differential tax regimes create other distortions, like tax arbitrage and tax avoidance by multinational companies. Governments throughout the world incur significant revenue losses through base erosion and profit shifting. Recent estimates show that accumulated losses for some countries are staggering and reach \$767 billion in US federal income taxes [47].

The magnitude of revenue losses due to tax avoidance by multinational companies and other distortions arising from differential tax regimes call for the re-examination of CIT policies and tax coordination, and/or harmonization at the international level.

Acknowledgements

The authors are grateful to Kristina Kalasinskaite of Mykolas Romeris University for her assistance in preparing this chapter.

Author details

Liucija Birskyte^{1*} and Gintare Giriuniene²

*Address all correspondence to: lbirskyte@mruni.eu

¹ Mykolas Romeris University, Vilnius, Lithuania

² Vilnius University, Vilnius, Lithuania

References

- [1] Zodrow GR. Tax competition and tax coordination in the European Union. *International Tax and Public Finance*. 2003;**10**(6):651-671
- [2] Wilson JD. Theories of tax competition. *National Tax Journal*. 1999;**52**(2):269-304
- [3] Feld LP, Heckemeyer JH. FDI and Taxation: A Meta-Study. In: Discussion Paper No. 08-128, C.f.E.E. Research, Editor; 2008

- [4] Brennan G, Buchanan JM. *The Power to Tax: Analytic Foundations of a Fiscal Constitution*. Cambridge: Cambridge UP; 1980
- [5] Niskanen WAJ. *Bureaucracy and Representative Government*. New Brunswick (USA): Aldine Transaction; 1977
- [6] Cobham A, Janský P. Global Distribution of Revenue Loss from Tax Avoidance: Re-estimation and Country Results, in WIDER Working Paper 2017/55. 2017, UNU-WIDER Helsinki
- [7] Clausing KA. The Effect of profit shifting on the corporate tax base in the United States and beyond. *National Tax Journal*. 2016;**69**(4)
- [8] Gravelle J. *Tax Havens: International Tax Avoidance and Evasion*. Federal Publications; 2015
- [9] Tax Justice Network. *New Estimates Reveal the Extent of Tax Avoidance by Multinationals*. 2017 August 17, 2017; Available from: <https://www.taxjustice.net/2017/03/22/new-estimates-tax-avoidance-multinationals/>
- [10] Altshuler R, Grubert H. Repatriation taxes, repatriation strategies and multinational financial policy. *Journal of Public Economics*. 2003;**87**(1):73-107
- [11] Oates WE. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich; 1972
- [12] De Mooij RA. Will Corporate Income Taxation Survive? *De Economist*. 2005;**153**(3):277-301
- [13] Zodrow GR, Mieszkowski P. Pigou, Tiebout, property taxation, and the underprovision of local public goods. *Journal of Urban Economics*. 1986;**19**(3):356-370
- [14] Keen M, Konrad KA. *The Theory of International Tax Competition and Coordination*. Working Paper 2012 – 06; 2014. DOI: <http://dx.doi.org/10.2139/ssrn.2111895>
- [15] Tiebout CM. A pure theory of local expenditures. *The Journal of Political Economy*. 1956;**64**(5):416-424
- [16] Razin A, Sadka E. International tax competition and gains from tax harmonization. *Economics Letters*. 1991;**37**(1):69-76
- [17] Sinn H-W. Tax harmonization and tax competition in Europe. *European Economic Review*. 1990;**34**:489-504
- [18] Wildasin DE. Interjurisdictional capital mobility: Fiscal externality and a corrective subsidy. *Journal of Urban Economics*. 1989;**25**:193-212
- [19] Baldwin R, Krugman P. *Agglomeration, Integration and Tax Harmonization*. Centre for Economic Policy Research; 2000
- [20] European Commission, *Data on taxation*. Taxation and Customs Union 2017
- [21] OECD, *Statutory Income Tax Rate*. 2017

- [22] Grubert H. Tax planning by companies and tax competition by governments: Is there evidence of changes in behavior? In: Hines JJR, editor. *International Taxation and Multinational Activity*. Chicago: University of Chicago Press; 2001. pp. 113-139
- [23] Devereux MP, Lockwood B, Redoano M. Do countries compete over corporate tax rates? *Journal of Public Economics*. 2008;**92**(5):1210-1235
- [24] Vandebussche H, Crabbé K, Janssen B. Is there regional tax competition? Firm level evidence for Belgium. *De Economist*. 2005;**153**(3):257-276
- [25] McLure CE, Zodrow GR. Treasury I and the tax reform act of 1986: The economics and politics of tax reform. *Journal of Economic Perspectives*. 1987;**1**(1):37-58
- [26] Slemrod J. The taxation of foreign direct investment: Operational policy perspectives. In: Poterba JM, editor. *Borderline Case: International Tax Policy, Corporate Research and Development, and Investment*. Washington, DC: National Academy Press; 1997. pp. 11-38
- [27] Hunady J, Orviska M. Determinants of foreign direct investment in EU countries – Do corporate taxes really matter? *Procedia Economics and Finance*. 2014;**12**:243-250
- [28] Kersan-Skabic I. The importance of corporate taxation for FDI attractiveness of southeast European countries. *Panoeconomicus*. 2015;**62**(1):105-122
- [29] Daniels JP, O'Brien P, von der Ruhr MB. Bilateral tax treaties and US foreign direct investment financing modes. *International Tax and Public Finance*. 2014;**22**(6):999-1027
- [30] Egger P, Raff H. Tax rate and tax base competition for foreign direct investment. *International Tax and Public Finance*. 2014;**22**(5):777-810
- [31] Herger N, Kotsogiannis C, McCorriston S. Multiple taxes and alternative forms of FDI: evidence from cross-border acquisitions. *International Tax and Public Finance*. 2015;**23**(1):82-113
- [32] Salihu IA, Annuar HA, Sheikh Obid SN. Foreign investors' interests and corporate tax avoidance: Evidence from an emerging economy. *Journal of Contemporary Accounting & Economics*. 2015;**11**(2):138-147
- [33] Faria JR. Location clusters, FDI and local entrepreneurs: Consistent public policy. *Journal of the Knowledge Economy*. 2015;**7**(4):858-868
- [34] Cnossen S. Company taxes in the European Union: Criteria and options for reform. *Fiscal Studies*. 1996;**17**:67-97
- [35] Cnossen S. How much tax coordination in the European Union? *International Tax and Public Finance*. 2003;**10**(6):625-649
- [36] Parthasarathi S. *Tax Policy Handbook*. Washington D.C: International Monetary Fund: International Monetary Fund; 1999

- [37] Slemrod J, Yitzhaki S. Tax Avoidance, Evasion, and Administration. NBER Working Paper No. 74732000. DOI: 10.3386/w7473
- [38] Hines JRJ. Lessons from behavioral responses to international taxation. *National Tax Journal*. 1999;**52**(2):305-322
- [39] Dowd T, Landefeld P, Moore A. Profit shifting of U.S. multinationals. *Journal of Public Economics*. 2017;**148**:1-13
- [40] Weichenrieder AJ. Profit shifting in the EU: evidence from Germany. *International Tax and Public Finance*. 2009;**16**(3):281-297
- [41] Huizinga H, Laeven L. International profit shifting within multinationals: A multi-country perspective. *Journal of Public Economics*. 2008;**92**(5):1164-1182
- [42] Bartelsman EJ, Beetsma RMWJ. Why pay more? Corporate tax avoidance through transfer pricing in OECD countries. *Journal of Public Economics*. 2003;**87**(9):2225-2252
- [43] Han S, Leach J. A bargaining model of tax competition. *Journal of Public Economics*. 2008;**92**(5):1122-1141
- [44] OECD, Tax on Corporate Profits (indicator). 2017
- [45] Crivelli E, De Mooij R, Keen M. Base erosion, profit shifting and developing countries. *FinanzArchiv: Public Finance Analysis*. 2016;**72**(3)
- [46] Cnossen S. Corporation taxes in the European Union: Slowly moving toward comprehensive business income taxation? *International Tax and Public Finance*. 2017
- [47] Institute on Taxation and Tax Policy, Fortune 500 Companies Hold a Record \$2.6 Trillion Offshore. 2017, Institute on Taxation and Tax Policy Washington, D.C

