Corporate Income Tax Avoidance in the European Arena – Evidence and Remedies

TIBOR PÁL, PH.D

ASSOCIATE PROFESSOR

e-mail: stpal@uni-miskolc.hu

ZSÓFIA TÓTH

PH.D STUDENT

e-mail: d.tothzsofia@gmail.com

SUMMARY

According to the OECD, 4% to 10% of the global corporate income tax revenue, i.e. USD 100 to 240 billion annually, is lost due to corporate income tax avoidance (OECD, 2015). Although the existence of the issue is well-accepted by the tax policy makers of the developed world, it is extremely difficult to agree on an international tax policy standard which could reduce the vulnerability of the sovereign tax regimes. In this article, we summarize the historical background of corporate income tax avoidance, and provide evidence of its existence in the EU member states. In addition, we also examine a new international income tax model proposed by the European Commission and analyse the expected effects of the proposal onthe risk associated with tax avoidance in Europe.
Keywords: tax avoidance; tax reform; formulary apportionment
Journal of Economic Literature (JEL) codes: H26
DOI: http://dx.doi.org/10.18096/TMP.2015.02.06

INTRODUCTION

The development of the international business environment and the establishment of the modern form of multinational enterprise significantly reshaped the tax policy structures of countries in the 20th century, resulting in new issues which are stillnot solved as of today.

According to the research in the history of economics, the influential European powers were exporting capital to their colonies overseas as early as the 16th and 17th centuries. The investors located in the home country were capitalizing corporations and purchasing tangible and intangible assets in the colonies. Based on the international investor schemes of the 18th and 19th centuries, the European entrepreneurs were heading to Latin America, Asia or Africa to set up corporations by themselves. In these cases, the foreign capital was flowing to the host countries in such a way that no corporate and strategic dependencies to the home country existed; essentially, no structure of parent companies and subsidiaries was set up with certain exceptions (Vernon, 1972; Vernon, 2001). However, the technological developments of the 20th century significantly reshaped the weak relationship between the countries exporting and importing the capital. As the obstacles of the immense geographic distances diminished, the investors were able to direct and control their investments also from the home country. The time and the cost needed

forpersonal communication with the foreign enterprises decreased significantly; therefore, intra-company strategic cooperation and control could emerge (Vernon, 1968), resulting in the development of intra-company transactions. Due to the above, currently 70 percent of world trade is derivedfrom intra-company transactions of multinational corporations(OECD, 2013).

CRITICAL REVIEW OF THE CURRENT INTERNATIONAL TAX REGIME

Not with standing the above, the current international tax policy principles are not aligned to the changing business circumstances and as a result, are not able to provide a stable economic environment to corporations and nation states. The current regulatory framework of international taxation allocates the income of the corporation to those countries where the corporation operates a fixed place of business (this is the so-called separate entity view) (Musgrave, 1972). However, the income allocated to suchplaces may include artificial revenues and expenses due to transfer prices of the intra-company transactions thatintentionally or unintentionally differ from the fair market values.

In 1933 the League of Nations proposed the introduction of the arm's length principle to handle the problem of transfer prices (Carroll, 1933). The definition of the arm's length price was not modified substantially in later decades. The work of the League of Nations was later overtaken by the OEEC and the OECD, which have also agreed on the application of the international tax model based on the arm's length principle. According to the current interpretation of the OECD, the arm's length price is the price which would be charged between independent enterprises in comparable transactions and circumstances (OECD, 2012, Article 9.1). Regardless of the income determined by national accounting principles, under the arm's length principle the intra-company transactions shall be viewed as transactions made between independent entities and if there is any price difference (and as such, profit difference) between the two, the income determined based on the arm's length price shall provide the income tax base.

Although the arm's length principle aims for a competitive neutrality among corporate groups and single enterprises (OECD, 2010, Article 1.7), it is not suitable to control the tax avoidance behaviour of multinational corporations. Earlier empirical research published in this topic proved the existence of tax avoidance applying different methodologies. One group of studies analysed the correlation between the rate of tax burden and the volume of income allocated, comparing the corporate income tax rate to the accounting profit of the subsidiaries allocated to a given country. For example, Hines & Rice (1994) proved that any 1 percent increase of the corporate income tax rate results in a decrease of 2.3 percent of the corporation's profit before tax allocated to a given country. Grubert & Mutti (1991), Huizinga & Laeven (2008) had similar findings. Furthermore, based on European data, Bartelsman & Beetsma (2003) proved that with the increase of corporate income tax rates, the income tax revenue of the countries didnot increase simultaneously, because the volume of the income allocated to those countries decreased. Grubert (2003) applied another type of indirect method to analyse American multinational corporations; he found that in the case of corporate groups that are present in high and low tax countries at the same time, intra-company transactions are more frequent. In addition, regarding the United States, Clausing (2006) proved that any 1 percent decrease of the corporate income tax rate of a foreign country resulted in a 1.9 percent increase in the volume of intra-company transactions heading to that foreign country. Clausing (2006) and Avi-Yonah (2009) proved the existence of tax avoidance when analysing multinational corporations headquartered in the United States and found that the volume of the foreign sourced profit and the number of employees working in the same foreign country were significantly different.

METHODOLOGY AND DATASET

The empirical data related to the income taxation of multinational corporations are usually included in the tax returns and qualify as undisclosed information; in most developed countries tax legislation prohibits their publication. Therefore, similar to previous empirical studies conducted in this topic, we could rely only on the published accounting information for the analysis. (The Hungarian accounting regulation provides for the publication of the income tax base in the explanatory notes; however, when analysing international issues, the information regarding a Hungarian member of a multinational corporation cannot be interpreted in itself.)

Regarding the research methodology, we relied on the practice followed by previous empirical studies prepared in the United States and in Europe. We reviewed the work of Sheffrin & Fulcher (1984), Shackelford & Slemrod (1998), Clausing & Lahav (2011) as far as the American economy is concerned. Within a European context, we analysed the methodology applied by Fuest et al. (2006), Devereux & Loretz (2008), Cline et al. (2011) and Oestreicher & Koch (2011).

Shackelford & Slemrod (1998) and later Devereux & Loretz (2008) estimated the income tax base by grossing up the income tax liability published in the financial statements. Under this step, they were dividing the tax liability by the nominal income tax rate (published in the tax legislation). In contrast to this methodology, Sheffrin & Fulcher (1984), Fuest et al. (2006) and Oestreicher & Koch (2011) defined the tax base as the book value of the profit or in certain cases, as the adjusted book value of the profit.

In our point of view, the methodology applied by Shackelford & Slemrod (1998), and later Devereux & Loretz (2008) would be appropriate to estimate the income tax base needed for the analysis. However, we disagree with the application of the nominal income tax rate and opt for the application of the effective income tax rates published by the Oxford University Centre for Business Taxation. Therefore, we determine the income tax base as follows:

$$\pi_i^{ALS} = \begin{cases} \dfrac{TAX_i^{ALS}}{T_i} & \text{if } TAX_i \geq 0 \\ \dfrac{TAX_i^{ALS}}{T_i} & \text{if } TAX_i < 0 \\ PBT_i & \text{if } TAX_i = n.\,a. \end{cases} \quad (1)$$

Equation 1. Estimate of the income tax base

where TAX represents the income tax liability published in the accounting statement, T represents the effective income tax rate of the member state, ALS represents the current regulatory framework based on the notion of Arm's Length Standard, and PBT represents the profit before tax.

We conducted our calculations based on the data available in the financial statements and additional financial reports of European multinational enterprises sourced from the Orbis database between April and June, 2013 (covering the 2011 financial year). We focussed on corporations operating in the car manufacturing, the retail and the tour operator industries. Altogether 3,551 companies headquartered in the EU member states belonging to 53 different corporate groups are involved in the analysis.

EVIDENCEOF TAX AVOIDANCE IN EUROPE

In order to prove the existence of the corporate income tax avoidance, we analysed the relationship between the income tax base of a given subsidiary (or group of subsidiaries) located in a member state and the production assets of the same subsidiary (or subsidiaries) registered in that same member state. Primarily, as proof of tax avoidance, we assumed that there is no stochastic relationship between these two, since multinational enterprises shift their profits to subsidiaries located in low tax countries, i.e. the location of the production and the location of the taxation of the profits originating from such activity diverge (OECD, 2013). Such profit shifting aims to erode the income tax base of the subsidiaries located in high tax countries, and the multinational enterprises often manipulate the prices of intra-company

transactions to achieve that purpose. For other techniques aiming to avoid corporate income tax, see further OECD, 2013, Section 4: "Key tax principles and opportunities for base erosion and profit shifting".

Within this context, we analysed the geographic location of certain crucial production assets of the multinational enterprises, namely the fixed assets and the workforce (including the payroll costs and the numberof employees). Information regarding the corporations' fixed assets and workforce are generally available in the published financial statements; therefore, to determine the volume of such production assets we followed the definition of the national accounting standards of the EU member states. We defined the volume of the subsidiaries' fixed assets based on the data provided in the unconsolidated balance sheet of financial year 2011. Regarding the workforce we took the average of the payroll cost and the number of employeesalso published in the unconsolidated financial statements of 2011.

In order to test our hypothesis above, we applied a simple linear regression model where the income tax base distribution is regarded as the dependent variable and the distribution of the fixed assets is regarded as the explanatory variable. Based on Figure 1, it can be concluded that under the current income tax regime, the geographical distribution of the fixed assets does not determinethe tax base distribution (R^2= 0.167; P=0.002). This shows that the location of the fixed assets of the multinational enterprise cannot explain the location of the profit taxation.
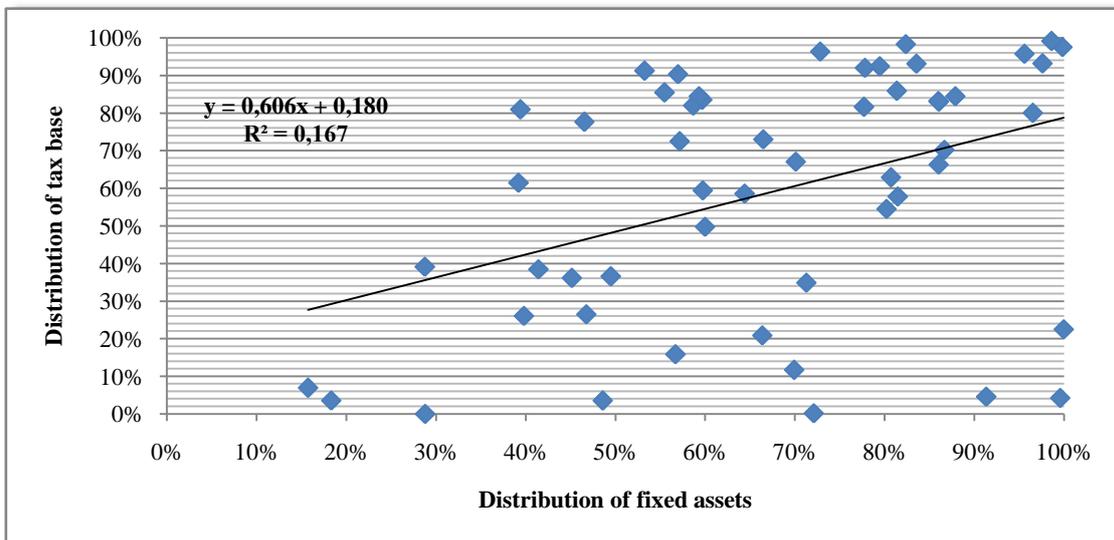

Figure 1. Relationship between the distribution of the tax base and the fixed assets
Source: authors'own elaboration

Wecarried outthe same test regarding the distribution of the workforce as well (Figure 2) and found that there is no stochastic relationship between the

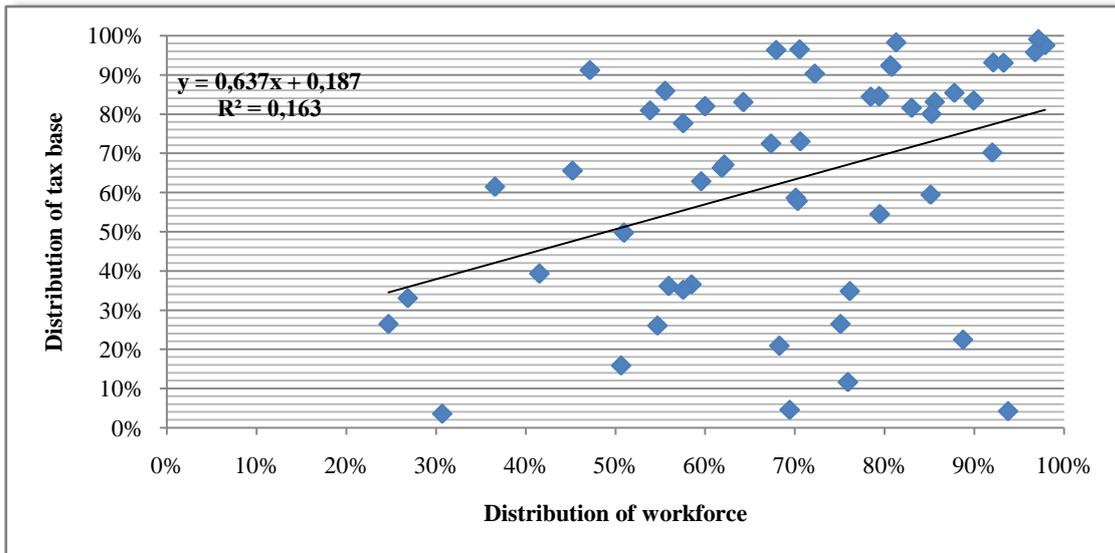distribution of the tax base and the location of the workforce (R^2= 0.163; P=0.003).

Figure 2. Relationship between the distribution of the tax base and the workforce
Source: author's own elaboration

POSSIBLE REMEDIES OF THE PROBLEM

The alternative of the current international tax regime views the income of the multinational enterprise on a consolidated basis and disregards the analysis of the corporate structure. Such a model allocates the proper volume of the taxable income to a countrybased on an allocation formula (Musgrave, 1972; Musgrave, 1995) (this is the so-called formulary apportionment).

Currently, both the OECD and the United Nations reject the international application of formulary apportionment; however, European tax harmonization efforts are aiming at the introduction of this alternative model within the European Union.The European Commission published arelated proposal in 2011: "Proposal for a Council Directive on a Common Consolidated Corporate Tax Base, COM (2011) 121/4", hereinafter: CCCTB proposal. Besides this there are numerous tax policy initiatives aiming for the samein other nations as well (Clausing & Avi-Yonah, 2008; Martens-Weiner, 2009).

According to the CCCTB Proposal, the consolidated income tax base of a multinational enterprise shall be allocated to a given EU member state based on the following index (Article 86.1):

$$\omega^m = \frac{1}{3} \times \left(\frac{1}{2} \times \frac{\text{payroll cost}^m}{\sum_{i=1}^n \text{payroll cost}} + \frac{1}{2} \times \frac{\text{employees}^m}{\sum_{i=1}^n \text{employees}} \right) + \frac{1}{3} \times \frac{\text{fixed assets}^m}{\sum_{i=1}^n \text{fixed assets}} + \frac{1}{3} \times \frac{\text{sales revenue}^m}{\sum_{i=1}^n \text{sales revenue}} \quad (2)$$

Equation 2. Allocation formula of the CCCTB proposal

The production assets included in the CCCTB Proposal are the fixed assets and the workforce (average of the payroll cost and the number of employees). In order to quantify the fixed assets factor, the European Commission reviewed the application of the historical cost, the fair market value, the net book value and the net tax value (the historical cost decreased by the tax depreciation cost) (European Commission, Directorate General Taxation and Customs Union, 2006) and the CCCTP Proposal recommends the application of the net tax value. The application of the net value versus the historical cost of the fixed assets is crucial, as the different timing of the investments could distort the allocation mechanism (the income tax base would be allocated to those member states where the multinational enterprise operates its newer investments) (Musgrave, 1984). Further questions are related to the effect of inflation and foreign exchange rate fluctuations on the fixed assets factor. As far as the workforce is concerned, the allocation formula of the CCCTB Proposal includes the average of the payroll cost incurred during the financial year and the number of employeesat financial year end. Several analyses have concluded that the application of the payroll cost itself would distort the allocation mechanism due to the immense differences in the wage levels between the member states (for example, see McLure, 2002).

Primarily, we were assuming that the model of formulary apportionment mentioned above is able to hinder the artificial profit shifting techniques, and therefore, is able to close a significant part of the loopholes for the corporate income tax avoidance. Similar to the analysis of the current income tax regime, we examined the relationship between the distribution of the tax base hypothetically allocated to a given EU member state in case the formulary apportionment model were introduced within a European context and the distribution (i.e. the location) of the fixed assets and the workforce.

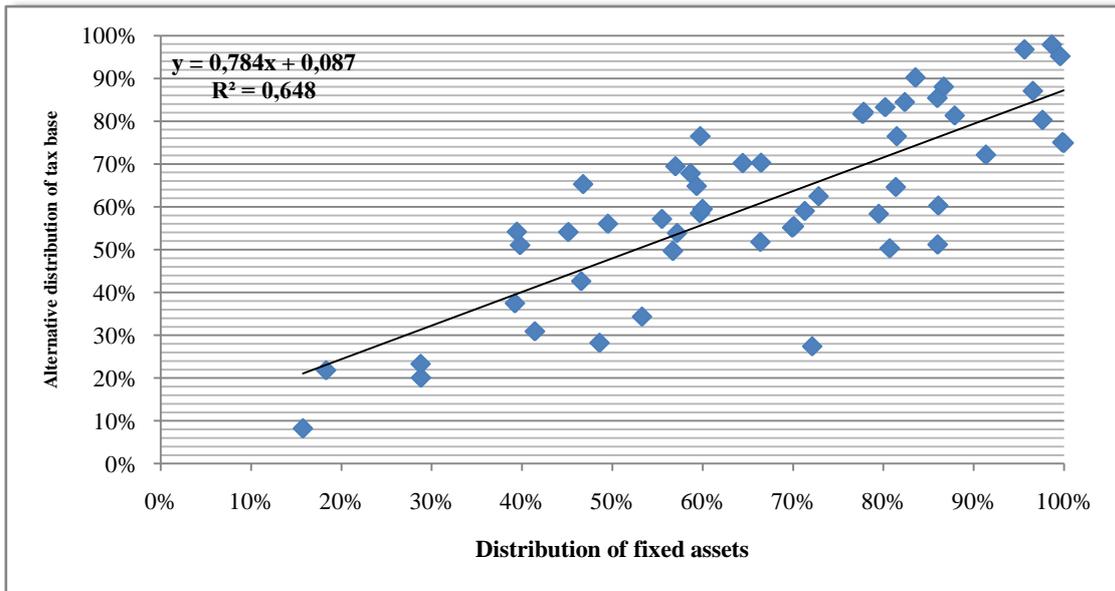First we made the test regarding the distribution of the fixed assets (Figure 3).

Figure 3. Relationship between the alternative distribution of tax base and the distribution of fixed assets
Source: authors'own elaboration

Based on the above, we concluded that in the case of the application of the formulary apportionment model the distribution of the income tax base is determined significantly more stronglyby the geographical location of the fixed assets than in the case of the current income tax model. Based on the significant and stochastic relationship (R^2= 0.648; P=0.000), it can be stated that the application of the formulary apportionment model decreases the possibility of tax avoidance, since in this case the tax jurisdictions of the countries where the corporation's fixed assets are operatingattract the income tax base of the corporations. As the fixed assets are generally not immobile assets, the corporation's tax planning possibilities aiming attax avoidance are expected to decrease ifthe formulary apportionment is applied.

In addition, we also tested the relationship between the income tax base allocation and the geographical distribution of the workforce in the case that the formulary apportionment model were introduced in a European context (Figure 4).
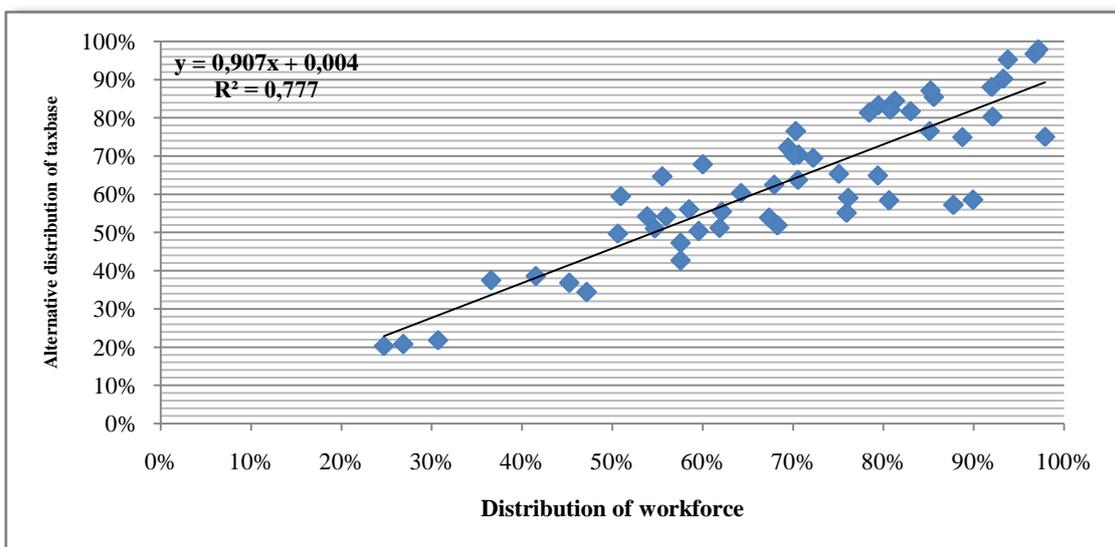

Figure 4. Relationship between the alternative distribution of the tax base and the distribution of workforce
Source: authors' own elaboration

In this case, there is also a significant and stochastic relationship between the distribution of the income tax base and the workforce (R^2= 0.777; P=0.000). Similar to the analysis of the distribution of the fixed assets, this result leads to the conclusion that the application of the formulary apportionment model decreases the risk of tax avoidance. Similarly to the fixed assets, the workforce generally qualifies as an immobile asset.

Comparing the current international tax allocation model (represented by the tests shown in Figures 1 and 2) to the formulary apportionment model (represented by the tests in Figures 3 and 4), we could prove the existence of tax avoidance. Under the current international tax allocation model, the reported location of the income tax base and the production assets representing the real business operations diverge, confirming that the income tax base of the corporations isartificially shifted to member states where insignificant volumes of fixed assets and workforce are located. Based on the methodology of the formulary apportionment, the multinational enterprises would rely on the volume of the consolidated income tax base and due to the tax consolidation concept they would have to disregard the revenues and expenses of the intra-company transactions. Applying the formulary apportionment model of the CCCTB Proposal, multinational enterprises' profit would be taxed in those EU member states where their real and immobile business operations take place (measured by the location of fixed assets, workforce and sales). This mechanism would hinder the option of shifting profits artificially to low-tax member states by applying unfair transfer prices on intra-company transactions. The tests presented in Figures 3 and 4 prove that in the case of the application of the formulary apportionment the profit of the multinational enterprises would be taxed in those member states where the real business operations (measured by the location of fixed assets and workforce) are located.

CONCLUSIONS AND FURTHER CONCERNS

In short, it can be stated that the introduction of formulary apportionment under the umbrella of a European tax reform would have positive effect on the tax environment of the multinational corporations operating in the European economy. It is proved that the corporations would lose a significant part of their profit shifting and tax base erosion (i.e. tax avoidance) techniques, as when allocating their income tax base among different subsidiaries they would have to rely on factors which might not be mobilized easilyfor tax planning reasons only.

On the other hand, one could argue whether the production factors included in the European proposal are really those which can substantially determine the location where the values are created by a given multinational enterprise. The relevance of the workforce factor in the income allocation methodology is definite; however, the expansion of digital economic models and the increasing importance of intangibles in the intra-group value chains suggest that the location of the fixed assets alonecannot represent the place of value production anymore. However, the involvement of the intangible assets in the formulary apportionment model may open the possibilities for different tax avoidance techniques again; Grubert (1998) and Dischinger & Riedel (2011) both proved the significance of intangible assets in the profit-shifting behaviour of the multinational enterprises.

A further concern says that a major European (or international) income tax reform is a utopian scheme which will not be accepted by the countries consensually. In our view, the expanding harmonization of the sovereign tax environments will be forced by the increasing budgetary constraints of the governments and the conflicting public pressure about the tax morals of the multinational enterprises. The question is how sensitive the political and economic leadership of the European Union member states istothese claims.

REFERENCES

AVI-YONAH, R. S. (2009): Between formulary apportionment and OECD guidelines: A proposal for Reconciliation. The John M. Olin Center for Law & Economics Working Paper Series, Working Paper 102.

BARTELSMAN, E. & BEETSMA, R. (2003): Why pay more? Corporate tax avoidance through transfer pricing in OECD countries. Journal of Public Economics, 87(9-10): 2225-2252.http://dx.doi.org/10.1016/s0047-2727(02)00018-x

CARROLL, M. B. (1933): Survey Fiscal Committee League of Nations, Vol. 1. League of Nations Document C73M38.1932; Vol. 2, C245.M217.1933; Vol. 3. C425(a)M217(a).1933

CLAUSING, K. A. (2006): International Tax Avoidance and U.S. International Trade. National Tax Journal, 59(2): 269-287. DOI: http://dx.doi.org/10.17310/ntj.2006.2.05

CLAUSING, K. A. & AVI-YONAH, R. S. (2008): Reforming Corporate Taxation in the Global Economy: A proposal to adopt formulary apportionment. Path to Prosperity: Hamilton Project Ideas on Income Security, Education and Taxes, Brookings Institution Press, Washington, D.C. DOI: http://dx.doi.org/10.2139/ssrn.995202

CLAUSING, K. A. & LAHAV, Y. (2011): Corporate tax payments under formulary apportionment: Evidence from the financial reports of 50 major U.S. multinational firms. Journal of International Accounting, Auditing and Taxation,20(2): 97-105.DOI: http://dx.doi.org/10.1016/j.intaccaudtax.2011.06.004

DEVEREUX, M. P. & LORETZ, S. (2007): The effects of EU formulary apportionment on corporate tax revenues. Oxford University Centre for Business Taxation, Working Paper 07/06

DISCHINGER, M. & RIEDEL, N. (2011): Corporate taxes and the location of intangible assets within multinational firms. Journal of Public Economics,95 (7-8): 691-707. DOI: http://dx.doi.org/10.1016/j.jpubeco.2010.12.002

CLINE, R., NEUBIG, T., PHILLIPS, A., SANGER, C. & WALSH, A. (2011): Study on the Economic and Budgetary Impact of the Introduction of a Common Consolidated Corporate Tax Base in the European Union. Ernst&Young.http://taxpolicy.gov.ie/wp-content/uploads/2011/06/EY-Report-CCCTB-for-Commissioner-Semeta-4-Jan-2011.pdf

EUROPEAN COMMISSION, DIRECTORATE GENERAL TAXATION AND CUSTOMS UNION, WORKING DOCUMENT OF CCCTB WORKING GROUP (2006): The mechanism for sharing the CCCTB, CCCTB/WP/047/doc/en

EUROPEAN COMMISSION (2011): Proposal for a Council Directive on a Common Consolidated Corporate Tax Base, COM (2011) 121/4

FUEST, C., HEMMELGARN, T. & RAMB, F. (2007): How would the introduction of an EU-wide formula apportionment affect the distribution and sized of the corporate tax base? An analysis based on German multinationals. International Tax and Public Finance, 14(5): 605-626. DOI: http://dx.doi.org/10.1007/s10797-006-9008-6

GRUBERT, H. & MUTTI, J. (1991): Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making. The Review of Economics and Statistics, 73(2):285-293. DOI: http://dx.doi.org/10.2307/2109519

GRUBERT, H. (1998): Taxes and the division of foreign operating income among royalties, interest, dividends and retained earnings. Journal of Public Economics, 68(2):269-290. DOI: http://dx.doi.org/10.1016/s0047-2727(97)00077-7

GRUBERT, H. (2003): Intangible Income, Intercompany Transactions, Income Shifting and the Choice of Location. National Tax Journal, 56(1): 221-242. DOI: http://dx.doi.org/10.17310/ntj.2003.1s.05

HINES, J. & RICE, E. (1994): Fiscal Paradise: Foreign Tax Heavens and American Business. The Quarterly Journal of Economics, 109(1): 149-182. DOI: http://dx.doi.org/10.2307/2118431

HUIZINGA, H. & LAEVEN, L. (2008). International profit shifting within multinationals: A multi-country perspective. Journal of Public Economics, 92(5-6): 1164-1182. DOI: http://dx.doi.org/10.1016/j.jpubeco.2007.11.002

MARTENS-WEINER, J. (2009). It's time to adopt formulary apportionment, Tax Analyst. October 1.http://www.taxanalysts.com/www/freefiles.nsf/Files/WEINER-30.pdf/$file/WEINER-30.pdf

MCLURE, C. (2002): Replacing Separate Entity Accounting and the Arm's Length Principle with Formulary Apportionment, Bulletin for International Taxation, Vol. 2002. December

MUSGRAVE, P. B. (1972): International Tax Base Division and the Multinational Corporation. Public Finance, Vol. 27.

MUSGRAVE, P. B. (1984): Principles for Dividing the State Corporate Tax Base. In C. McLure (Ed.), The State Corporate Income Tax, Hoover Institution Press

MUSGRAVE, P. B. (1995): Interjurisdictional equity in company taxation: principles and applications to the European Union. In S. Cnossesn (Ed.), Taxing Capital Income in the European Union. Oxford University Press

OECD (2010): Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations. OECD Publishing. Paris. DOI: http://dx.doi.org/10.1787/tpg-2010-en

OECD (2012): Model Tax Convention on Income and on Capital 2010 (updated 2010). OECD Publishing. Paris. DOI: http://dx.doi.org/10.1787/978926417517-en

OECD (2013): Action Plan on Base Erosion and Profit Shifting. OECD Publishing. Paris. DOI: http://dx.doi.org/10.1787/9789264202719-en

OECD (2015): Measuring and Monitoring BEPS, Action 11 - 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project. OECD Publishing. Paris. DOI: http://dx.doi.org/10.1787/9789264241343-en

OESTREICHER, A. & KOCH, R. (2011): The revenue consequences of using a Common Consolidated Corporate Tax Base to determine taxable income in the EU Member States. Public Finance Analysis, 67(1): 64-102. DOI: http://dx.doi.org/10.1628/001522111x574191

Oxford University Centre for Business Taxation, CBT tax database. http://www.sbs.ox.ac.uk/faculty-research/tax/publications/data

SHACKELFORD, D. & SLEMROD, J. (1998): The revenue consequences of using formula apportionment to calculate U.S. and foreign-sourced income: A firm-level analysis. International Tax and Public Finance, 5(1): 41-59.

SHEFFRIN, S. M. & FULCHER, J. (1984): Alternative division of the tax base: how much is at stake? In: C. McLure (Ed.), The State Corporate Income Tax, Hoover Institution Press, Stanford.

VERNON, R. (1968): Economic Sovereignty at Bay, Foreign Affairs, 47(1): 110-122. DOI: http://dx.doi.org/10.2307/20039358

VERNON, R. (1972): The Economic Environment of International Business. Prentice-Hall, Inc.

VERNON, R. (2001): Big business and national governments: Reshaping the compact in a globalizing economy. Journal of International Business Studies, 32: 509-518. DOI: http://dx.doi.org/10.1057/palgrave.jibs.8490981