The Impacts of the CCCTB Introduction on the Distribution of the Group Tax Bases across the EU: The Study for the Czech Republic

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Abstract
The introduction of the CCCTB system in the European Union will have the impacts on the redistribution of the group tax bases between the Member States and therefore also on the national budgets. The aim of the paper is quantify the differences in the division of the MNEs group tax bases between the individual Member States in current situation – i.e. when applying separate entity approach and situation when CCCTB will be introduced – i.e. applying the allocation formula for sharing the tax base. The results show that Czech Republic could gain in situation when CCCTB would be introduced in all EU members states - the share on the group tax base would increase by 1.22%. A very slight increase was also indicated in the case of Slovak Republic, Slovenia and Spain. On the contrary, the share on the group tax base was decreased in the case of Germany (by 1.36%), Estonia, Hungary and Poland. The results also indicate that there might be connection between the size of the country and the impact on the share of the tax base.

Keywords: CCCTB, group, tax base, sharing mechanism, Czech Republic
JEL codes: H25, K22

1. Introduction

Common Consolidated Corporate Tax Base represents one of the most ambitious projects in the history of the harmonization efforts within the European Union. The efforts in the area of direct taxation have never gone so far. The European Commission proposed the system allowing for "one-stop-shop" for filling the tax return and consolidating profits and losses within the EU while retaining the right of EU Member States to set their own corporate tax rate. That design which brings the directive proposal from 16th March, 2011, is resulting into the reduction of compliance costs of taxation, elimination of internal transfer pricing and to establishment of the possibility of internal cross-border off-setting of losses and profits. European Commission also believes, that implementation of CCCTB system should lead to the fair tax competition, because the harmonization of the rules for tax base construction means that the nominal tax rates will fully reflect the real tax burden falling on the companies – i.e. will be equal to the effective tax rate. The implementation of the CCCTB system can also increase the competitiveness of the EU companies on the global market and as mentions Szarowska (2010) it can have an impact on the EU economy growth.

The introduction of CCCTB system will contribute to the elimination of the obstacles for the international mergers and acquisitions, resulting from the lack of coordination of capital profit taxation. On the other hand, the system will also be connected with some disadvantages. The existence of two systems (CCCTB and national system) leaves the space for speculations, tax arbitrations, tax evasion and fraud. In order to limit the possibility of speculations and tax arbitrations, the proposal of CCCTB system covers strict rules for getting in and getting out of the system.

Cross-border consolidation is connected with the problem of tax sharing mechanism. The directive proposal suggests the allocation formula. Its impact on EU Member States budgets is the subject of great discussion. The reason is the fact that at present, enterprises belonging to the MNEs

groups are mostly taxed as separate entities in the state of their residence without the possibility of the consolidation for tax purposes. However, under CCCTB system MNEs group will be able to create one group for taxation purposes and to consolidate its profits and losses. The consolidated tax base of the MNEs group will be shared among the Member States according the allocation formula, taking into account the location of assets, labor force and sales of the enterprise. Even though the Member States will have a right to set the corporate income tax rate, they are going to impose the tax rate on the tax bases, which will be different from the current situation when separate entity (hereinafter as SA) is applied. Based on that, the member States will also raise different tax revenues.

The aim of the paper is quantify the differences in the division of the MNEs group tax bases between the individual Member States in current situation – i.e. when applying separate entity approach and situation when CCCTB will be introduced – i.e. applying the allocation formula for sharing the tax base. The empirical analysis is based on the data available from the Amadeus database. The paper presents the results of the research within the project GA CR No. 13-21683S "The quantification of the impact of the introduction of Common Consolidated Corporate Tax Base on the budget revenues in the Czech Republic".

2. Theoretical Background

At present, there can be identified two approaches in treatment of MNEs tax bases – separate accounting approach (hereinafter as SA) and unitary approach (hereinafter as UA). Many countries are using separate accounting for dividing the total tax base of an MNE among the jurisdictions. As mentions Oestereicher (2000) SA method splits an MNE into hypothetically unrelated enterprises, expected to bargain with each other like independents. And Kumpf (1976) adds that those enterprises are expected to bargain with each other like independents. Oestereicher (2000) further specifies that each subsidiary or branch of MNE is treated as separate entity that deals at arm´s length with its parent and other associated entities. Those entities are completing financial accounts and exterminating the profit according the rules comprised in the taxation systems in each location. The parent company has to calculate its financial account as each of its enterprise would be independent entity – i.e. all the transactions between the members of the group have to be at arm´s length. As mentions Bakker (2009) under arm´s length principle, affiliated businesses should set transfer prices at levels that would have prevailed that the transaction occurred between unrelated parties. Solilova and Nerudova (2013) add that arms´ length principle was established to protect the manipulation of transfer price. As mentions OECD (2001), the arm´s length principle eliminates tax consequences that could arise solely from the organizational form of the enterprise. However, as mentions Picciotto (1992) financial records of the enterprises can be adjusted by local tax authorities to reflect profit or loss which would have been reached in situation when all internal transfers would be realized under open-market conditions. And as mentions Vann (1991) even though the MNEs may take advantage arising from the tax differentials, they are most frequently accused by fiscal administrators of manipulating their transfer prices.

SA approach is based on two principles – the concept of separate entity theory and arm´s length principle. As mentions Jacobs (2002) while the separate personality of full-fledged subsidiary is logically stemming from the incorporation in respective country, the attribution of the taxable income to a branch segregated from the entity to which it legally belongs is more complicated. In order to achieve the above mentioned, functional and factual analysis has to be performed. As mention Djanani and Brahler (2006), second principle – arm´s length principle – is currently the international standard of taxing MNEs. Under that principle, tax authority considers inter-company transaction as appropriate if the conditions of the contract are comparable with the conditions which would be concluded between two independent entities.

On the contrary, unitary approach is based on three principles – unitary entity theory, worldwide reporting and formulary apportionment. As mentions Weiner (1999), the unitary approach looks on the economic substance of the entity and tries to integrate multi-entity operation into single unit for income tax purposes. Weiner and Mintz (2002) further add that formulary apportionment (in the frame of unitary approach) represents a technique under which the cross- country consolidated tax base of MNEs is split across jurisdictions according to the defined formula comprising factors reflecting the way the

companies generate profit. Formulary apportionment is at present applied for example in the U.S.A. or Canada. On the contrary to the SA approach apportionment the tax base is shared according to the allocation formula, taking into account the different factors as for example assets, labor force or sales of the enterprise. As mention McDaniel (1994) mentions that contrary to the SA approach, formulary apportionment is based on different premises, has different economic effects and presents different technical issues, although the problems arm´s length method are not among them. Under unitary apportionment substance-over-form principle is applied. European Commission in the frame of CCCTB system decided for formulary apportionment, which is used with slight differences in the factors of the formula applied for example in the U.S.A. or Canada.

Under formulary apportionment within the CCCTB rules, the member of the group can calculate its share on the profit based on the activities, which are conducted in its location. When applying the formula, there is no need for MNE to calculate the profit earned by each member of the group. As mentions Sorensen (2004) and Deveraux (2004) formulary apportionment can be regarded as a system of source taxation.

Allocation formulas can be divided according the factors which are used for allocation on macro - based formula and micro-based formula. While applying micro-based formula, two approaches can be used – value added approach and formulary apportionment approach. Selected formula can influence the portion on the tax base in dependence on the factors which are used. The basic criteria which should be met by the method of apportionment are fairness, enforceability, simplicity and cost-efficiency. All these possible tools for tax sharing mechanisms were discussed in details by (Nerudova, 2011).

First scientific work, which has been focused on sharing mechanism, concretely on formulary apportionment, was done by Musgrave (1972), who pointed out that formulary apportionment could eliminate the problem with transfer pricing within multinational corporations. Miller (1984) mentions that the formula should reflect the elements measuring the processes involved in the earning of net income and that formula should be easy to administer. Later Gordon and Wilson (1986) examined how corporate taxation of multinational firms using formula apportionment affects the incentives faced by individual firms and individual states. Musgrave (1984) defined two basic views on the formula (with respect to the fact where the profit originates) – supply-based and supply-demand based view. McLure (1980) has proved that when a formula consists of the factors as property of the company, payroll and sales, corporate income tax transforms into a tax on property, payroll and sales. This has also been proved by Goolsbee, and Maydew (2000). Also Wellish (2000) shows, that when a labour is used as the factor, then the costs of labour are exceeding the local wage rate, which reduces the demand for labour in each state.

The possible methods of sharing the tax base, mainly the formulary apportionment in the conditions of the EU has been discussed by Hellerstein and McLure (2004), who emphasize that EU should learn from the US and Canadian experience with formulary apportionment. Also Weiner (2005) and Mintz (2004) stipulate several problems of US and Canadian experience that could be useful for EU corporate taxation. The problem of the sharing mechanism within the EU and possible proposals has been discussed by Sorensen (2004), Deveraux (2004) or Agúndez-García (2006). Another authors as Lodin and Gammie (2001) were focusing on value added based apportionment. Also Hellerstein and McLure (2004) were analysing in their study value added approach.

3. Data and methodology

The empirical analysis is based on the company-level data from the Amadeus database which is provided by Bureau van Dijk. These data were taken from update 227 (August 2013) of the database including standardized financial information of more than 18 million public and private companies in 43 European countries.

With respect to the fact that the paper presents the results of the first stage of the research which aim is to research the budgetary impacts of the introduction of CCCTB for the Czech Republic, it was needed to gain the group of EU companies, which would under CCCTB system qualify for consolidation regime and group treatment. Therefore only European companies (EU28) fulfilling the

two-tier test confirming the eligibility for consolidation (group membership) were further analyzed. This test consists of two layers - control, which is assumed if the controlling company holds at least 50.01% in the controlled company and ownership, which is assumed if the ownership rights amount to more than 75 % of the company's capital.

In the next step the gained sample of companies was researched in order to identified parent company and its subsidiaries in the EU Member States. Based on that analysis we gained the distribution of the subsidiaries among the EU Member states.

Secondly, the detailed analysis of the situation in the Czech Republic was done. The financial statements of the parents situated in the Czech Republic as well as subsidiaries situated in the EU Member States were researched in order to gain their profit or loss before taxation.

In order to identify the shares of individual EU Member States on group tax bases, the detail comparative analysis of group taxation schemes and consolidation regimes was done. Based on that the EU Member States were categorized in to the four groups according the rules they are applying. Those rules were then used to calculate the total tax base of subsidiaries of the Czech parent companies in respective EU Member States.

In the next step, the sharing of the group tax base according to the allocation formula in individual EU Member States was researched. The proposed formulary apportionment under CCCTB comprises three factor formula equally weighted according the factors of sales, labour and assets:

$$ShareA = \left(\frac{1}{3} \frac{S^A}{S^{group}} + \frac{1}{3} \left(\frac{1}{2} \frac{P^A}{P^{Group}} + \frac{1}{2} \frac{E^A}{E^{Group}} \right) + \frac{1}{3} \frac{A^A}{A^{Group}} \right) * CCCTB \qquad (1)$$

where S represents sales, which are based on the sales of goods and services. P represents payroll, which includes the costs of salaries, wages, bonuses and all other employee compensation, including related pension and social security costs borne by the employer. E represents the number of employees, which are considered part of the group that pays the remuneration, unless they are under the control of a different group member, in which case they are considered part of that group. Employees are included if they are employed for at least three uninterrupted months. And finally, A represents assets, which include all fixed tangible assets, including buildings, airplanes and machinery, owned, rented, or leased by a group member.

The data were gained from the balance sheets of the companies from the Amadeus Database. However, the required information from balance sheet of individual companies was often missing in Amadeus database. In order to allow more companies to be covered into the analysis, missing data were imputed based on the observed data for companies in the same industry for Eastern and Western Europe (i.e. EU-13 and EU-15).

Missing operating revenue, number of employees, and costs of employees were imputed using ratios of the factor to assets for companies in which both variables are observed. Companies reporting fixed assets as not available were excluded from the imputation. Missing operating revenue amounts were imputed using reported tangible fixed asset data and the ratio of observed operating revenue to the tangible fixed assets for other companies. Missing employee data were imputed based on the reported tangible fixed assets of the company and the ratio of reported employees to tangible fixed assets. Missing cost of employment data were imputed based on the reported or imputed employee headcount and the ratio of cost of employees and employee headcount for companies reporting both items.

There are used standard scientific research methods in the paper. The paper is dived into theoretical and empirical part. In the first theoretical part the method of description and analysis was applied in order to research the current state of research with respect to the methods of group tax base apportioning among the relevant jurisdiction. The empirical part of the paper presents the empirical analysis of the EU companies comprised in Amadeus database, where the method of analysis and synthesis was applied. And further, in order to categorize EU Member States according the applied group taxation and consolidation rules, the method of comparative analysis was applied. Finally in calculation of the shares of the tax base of individual member states as well as in the conclusions the method of induction, deduction and synthesis was applied.

4. Results

As was already said above, at present, enterprises belonging to the MNEs group are in most cases (except those, who are tax residents in Netherlands) taxed as separate entities in the state of their residence without the possibility of the consolidation for tax purposes – i. e. separate entity approach is applied. Due to this fact the introduction of CCCTB system will change the shares of EU Member States on group tax bases especially in countries not allowing the consolidation or group taxation schemes.

In order to fulfill the aim of the research - to draw the map of the division of the MNEs group taxes base between the individual Member States in current situation (with special focus on the Czech Republic) – there were selected companies from Amadeus database, which are resident in one of the EU Member states. After that selection we received the sample of more than 15,000,000 companies. These companies were tested by the two-part test, firstly, if they fulfill the control part (here we gained the sample of 182,636 companies) and then the ownership part of the test (here we gained the sample of 163,401 companies). As revealed detailed analysis, these companies have 377,781 subsidiaries within the EU-28. Secondly, based on the BvD ID number (identification number of the company in the Amadeus database which is based on national identification number) of the subsidiaries. These ID numbers were than imported back into Amadeus database. The reload of these ID numbers identified approximately 10% of subsidiaries which are not available on Amadeus; their ID number is recorded only by their mother companies. Following Table 1 presents the residency of parent companies and subsidiaries which met the criteria of two-tier test in individual Member States.

Table 1: Parent and subsidiaries fulfilling two-tier test

	Two-tier test fulfillment			
Country ISO code	**Parents EU**		**Subsidiaries EU**	
	Absolutely	**Relatively**	**Absolutely**	**Relatively**
AT	2 293	1.4%	5 113	1.4%
BE	2 213	1.4%	6 069	1.6%
BG	2 252	1.4%	0	0.0%
CY	863	0.5%	1 982	0.5%
CZ	**2 764**	**1.7%**	**6 210***	**1.6%**
DE	18 885	11.6%	48 726	12.9%
DK	13 687	8.4%	20 372	5.4%
EE	1 929	1.2%	3 259	0.9%
ES	7 436	4.6%	19 978	5.3%
FI	1 452	0.9%	4 047	1.1%
FR	12 883	7.9%	35 932	9.5%
GB	62 954	38.5%	147 965	39.2%
GR	496	0.3%	1 512	0.4%
HR	34	0.0%	0	0.0%
HU	38	0.0%	848	0.2%
IE	3 814	2.3%	7 438	2.0%
IT	15 518	9.5%	29 509	7.8%
LT	157	0.1%	742	0.2%
LU	682	0.4%	2 019	0.5%
LV	135	0.1%	543	0.1%
MT	58	0.0%	241	0.1%

NL	4 609	2.8%	14 139	3.7%
PL	2 447	1.5%	7 975	2.1%
PT	1 656	1.0%	3 805	1.0%
RO	1 084	0.7%	0	0.0%
SE	2 237	1.4%	7 979	2.1%
SI	186	0.1%	579	0.2%
SK	156	0.1%	799	0.2%
n.a.	483	0.3%	0	0%
TOTAL	**163 401**	**100.0%**	**377 781**	**100.0%**

n.a. – location of the company is not available in Amadeus database
*the number covers all subsidiaries in the Czech Republic fulfilling the two-tier test.
Source: Own research from Amadeus database

Further, the attention was aimed on the situation in the Czech Republic. As can be seen from the previous table 1, there were identified 2,764 parent companies fulfilling the two-tire test in the Czech Republic. From 6,210 subsidiaries resident in the Czech Republic (fulfilling the two-tire test) were selected only subsidiaries, which are owned by the parent company, resident in the Czech Republic. After that selection, there were identified 4,558 subsidiaries of the Czech parent companies resident in the EU-28. The subsidiaries were imported back to Amadeus for the assignation to the parent company and 3,970 EU subsidiaries were available, assignable to 2,488 CZ companies. In order to calculate the share of the Member State on the group tax base, the filter of availability of the information on profit or loss before taxation was applied. After that we have received the sample of 2,440 subsidiaries of the Czech parent companies providing the information about their profit or loss before taxation. The result is shown in following Table 2.

Table 2: The residency of the subsidiaries of the Czech parent companies in individual EU Member States

Subsidiaries of Czech Parents with the information about P/L before taxation		
AT	0	0.0%
BE	0	0.0%
BG	0	0.0%
CY	0	0.0%
CZ	2 358	96.6%
DE	7	0.3%
DK	0	0.0%
EE	1	0.0%
ES	1	0.0%
FI	0	0.0%
FR	1	0.0%
GB	0	0.0%
GR	0	0.0%
HR	0	0.0%
HU	1	0.0%
IE	0	0.0%
IT	3	0.1%
LT	0	0.0%
LU	0	0.0%
LV	0	0.0%
MT	0	0.0%
NL	2	0.1%
PL	19	0.8%
PT	0	0.0%
RO	0	0.0%
SE	0	0.0%
SI	1	0.0%
SK	46	1.9%
TOTAL	**2 440**	**100.0%**

Source: own research and Amadeus database

Consequently, in order to research the distribution of MNEs tax base between the EU Member States, the group taxation schemes and consolidation schemes in individual member states needed to be researched. Based on the research, the EU Member States can be divided into the four groups according to the applied consolidation or group taxation ruled. The categorization is presented in the following table 3.

Table 3: Categorization of EU Member state according the consolidation or group taxation scheme rules

Full consolidation	Netherlands
Pooling of the result on the parent company	Denmark Germany Spain France Italy Luxembourg Austria Poland Portugal
Intra-group loss transfer	Ireland Cyprus Malta Lithuania Latvia Sweden Finland United Kingdom
Group taxation scheme not available	Belgium Bulgaria Croatia Czech republic Greece Hungary Slovak Republic Estonia Romania Slovenia

Source: IBFD research platform and Database Taxes in Europe

As can be clearly seen from the above stated Table 3, the only country applying fiscal unity on entities meeting certain criteria is Netherlands. Under Dutch consolidation system the accounting profits of subsidiaries are treated in the way as they would be executed by parent company – full consolidation of incomes takes place. The group can only apply for the fiscal unity treatment if a resident company holds directly or indirectly at least 95% of the share capital of one or more other resident companies, and since 1st January 2013, the parent company must in addition also hold directly or indirectly at least 95% of the statutory voting rights in the other company.

Second group consisting of 9 EU member states in fact enable to pool the results of the subsidiaries on the parent company. In that system the separate accounting approach is applied, but afterwards subsidiaries are allowed to offset their profits or losses at the level of the parent companies. Each of the EU member states in that group requires companies to meet certain criteria to be granted "group treatment". Germany allows his treatment only to the companies incorporated under EU/EEA laws and controlled company must be financially integrated into the controlling parent. Denmark limits this treatment to the companies which have majority of the voting rights. Luxembourg, Poland and France apply the limit for group treatment on the level of 95% of voting rights. During the research was discovered, that in Spain the pooling of the result on the parent company is mandatory for banks and their affiliates. Italy allows on top of the domestic consolidation also worldwide consolidation. The group can opt if all the controlled entities in the tax consolidation are covered into

(i.e. all-in all-out principle is applied). The effect of the worldwide consolidation is that the income of the controlled companies is imputed to the controlling company (in portion according to the entitlement on the profit). Austria represents the country with one of the lowest threshold for the group treatment. Group parent companies and their subsidiaries may opt for the consolidation if the parent company exercises financial control over the subsidiary, which is presumed if the parent owns more than 50% of the capital and voting power in the subsidiary. And finally, Portugal allows forming a group for special treatment consisting of a parent company and subsidiaries in which the parent owns 90% of voting rights (directly or indirectly).

Third group of the states represents countries which are applying separate accounting approach, but profits or losses can be transferred between the members of the group. During the research it was identified again, that even in that group countries usually set the minimum threshold for voting rights. The United Kingdom differentiate two types of groups for taxation purposes: A group is made up of a parent company and its 51% subsidiaries. In that case the only applicable relief is special arrangement for payment of the tax. Second type of the group - a consortium – consists of 20 or fewer UK resident companies that each own 5% or more, and together own 75% of a company. Consortia can qualify for the transfer of losses only. Similarly Ireland differentiates the group treatment according the level of the ownership (51%, 75% or 90%). A consortium exists if five or fewer companies own at least 75% of the ordinary share capital of either trading company or holding company. Losses can be transferred to any member of 75% group. Cyprus group relief is based on British model. An intra-group loss transfer is possible, provided that here is a 75% parent-subsidiary relationship, including subsidiaries under 75% control of a parent company. Malta represents the country with the lowest threshold for group treatment. Companies are considered to be members of the group if they resident in Malta and if they are 51% subsidiaries of parent company resident in Malta. In Lithuania since 1st January 2010 is possible to transfer losses within a group of companies under the condition that parent company holds at least 2/3 of shares in a subsidiary participating in the transfer and under the condition that losses are transferred between the companies belonging continuously to the group for the minimum period of 2 years. Latvia also allows transferring of the losses among the members of the same group. The group is defined as principal enterprise and all its subsidiaries. Principal enterprise is considered as legal person or individual that is resident in Latvia or in a state with which Latvia concluded double taxation treaty. The threshold for the relation between the principal enterprise and subsidiary is 90%. In Sweden, the shifting of income through group contribution is allowed. If the company qualifies for the system it is entitled to deduct the amount of the paid contribution from its taxable income and the recipient company is obliged to include such a contribution in its taxable income. This system in fact means that losses of one company may be set off against the profits of the company in the same group. Finland applies similar system of group contribution as is applied in Sweden.

Four group of states covers 10 EU Member States, where is not possible to compensate losses due to the reason that in those countries no group taxation schemes are available. It can be considered, that for this group of countries CCCTB will represent the most attractive tool how to reach the possibility of group taxation and offsetting of losses within the group.

Further, based on the above mentioned categorization the tax base of each of the group according to the country and consolidation status was calculated. As the individual tax base of the each subsidiary the indicator, profit or loss before taxation was considered. As was already shown above, in the case that the P/L before tax was not reported, the companies were excluded from the analysis.

Finally, the sum of tax basis for individual countries is calculated, both absolutely and relatively to the total tax base of all the subsidiaries of Czech parent companies, which are resident in EU28. The following table 4 summarizes the Czech parent companies according the NACE codes and presents the final results – the map of the division of the subsidiaries taxes base between the individual member States in current situation (i.e. in situation when CCCTB is not applied).

Table 4: Current division of the subsidiaries tax base among the individual Member States

Section of NACE	Total tax base for individual sections		Division of the subsidiaries tax base among the individual Member States in th. EUR							
	Abs. in th. EUR	Rel. in %	CZ	DE	EE	ES	HU	PL	SI	SK
A - Agriculture, forestry and fishing	**1 662.9777**	**0.1243**	1 662.9777							
B - Mining and quarrying	**7 836.1289**	**0.5858**	7 836.1289							
C - Manufacturing	**131 189.5307**	**9.8068**	110 250.2110	11480.6647	15.7670		11.9487	711.7053	219.5460	8 499.6880
D – Electricity, gas, steam and air conditioning supply	**245 378.3080**	**18.3427**	245 367.7520							10.5560
E – Water supply; sewerage; waste management and remediation activities	**13 005.6787**	**0.9722**	12 954.5680					51.1107		
F - Construction	**8 565.0828**	**0.6403**	8 565.0828							0
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	**39 3012.3508**	**29.3788**	341 385.5024	4 114.2779		102.9150		648.6085		46 761.0470
H - Transporting and storage	**2 1083.7037**	**1.5761**	21 083.7037					0		
I - Accommodation and food service activities	**1 813.3964**	**0.1356**	1 813.3964							
J - Information and communication	**44 575.0058**	**3.3321**	44 539.5548							35.4510
K - Financial and insurance activities	**230 608.5855**	**17.2387**	205 202.7263	25 405.8592						
L - Real estate activities	**53 965.0365**	**4.0340**	53 896.9306	7.4149						60.6910
M - Professional, scientific and technical activities	**93 967.8032**	**7.0244**	93 671.0903					2.7138		293.9990
N - Administrative and support service activities	**4 004.5873**	**0.2994**	3 995.5073							9.0800
O - Public administration and defence; compulsory social security	**73 767.3234**	**5.5143**	73 767.3234							
P – Education	**556.7317**	**0.0416**	556.7317							
Q - Human health and social work activities	**2 376.4003**	**0.1776**	2 376.4003							
R - Arts, entertainment and recreation	**10 347.2560**	**0.7735**	10 347.2560							
S - Other services activities	**24.5345**	**0.0018**	24.5345							
Total absolutely	**1 337 740.4219**	**100**	**1 239 297.3781**	**41 008.2167**	**15.7670**	**102.9150**	**11.9487**	**1 414.1383**	**219.5460**	**55 670.5120**
Total relatively in %	**100**	-	**92.6411**	**3.0655**	**0.0012**	**0.0077**	**0.0009**	**0.1057**	**0.0164**	**4.1615**

Source: own research and Amadeus database

Further, sharing of the group tax base according to the allocation formula in individual EU Member States was researched. Instead of the national consolidation and group tax regimes as was performed above, the formulary apportionment was applied. Within the CCCTB system allocation formula has three equally weighted factors - sales, labour and assets. The data were gained from the balance sheets of the companies from the Amadeus Database. However, the required information on the above three factors was often missing.

In order to preserve the same sample as in case of the tax base distribution analysis based on the national rules, missing data were imputed based on the observed data for companies in the same industry for Eastern and Western Europe (i.e. EU-13 and EU-15). Missing operating revenue, number of employees, and costs of employees were imputed using ratios of the factor to assets for companies in which both variables are observed. Companies reporting fixed assets as not available were excluded from the imputation. This represented 38 % of all companies.

Operating revenue was reported for 76 % of CZ group companies. Missing operating revenue amounts were imputed using reported tangible fixed asset data and the ratio of observed operating revenue to the tangible fixed assets for other companies. Missing data was imputed by industry for Eastern and Western Europe.

Number of employees was missing in 60 % of CZ group companies. Missing employee data were imputed based on the reported tangible fixed assets of the company and the ratio of reported employees to tangible fixed assets by industry for Eastern and Western Europe.

Payroll was missing in 65 % of CZ group companies. Missing cost of employment data were imputed based on the reported or imputed employee headcount and the ratio of cost of employees and employee headcount for companies reporting both items.

Following table summarizes the results of sharing the tax base of the subsidiaries according to the allocation formula within the CCCTB system.

Table 5: Division of the subsidiaries tax base among the individual Member States according to the allocation formula

Section of NACE	Total CCCTB for individual sections		Division of the subsidiaries CCCTB among the individual Member States in th. EUR							
	Abs. in th. EUR	Rel. in %	CZ	DE	EE	ES	HU	PL	SI	SK
A - Agriculture, forestry and fishing	**1 521.8945**	**0.1218**	1 521.8945							
B - Mining and quarrying	**7 816.4780**	**0.6254**	7 816.4780							
C - Manufacturing	**111 772.7362**	**8.9436**	95 259.7569	11 623.5042	2.8665		1.6436	268.2092	219.5460	4 397.2099
D – Electricity, gas, steam and air conditioning supply	**240 269.6849**	**19.2254**	240 269.6849							0.0000
E – Water supply; sewerage; waste management and remediation activities	**12 512.4012**	**1.0012**	12 453.7517					58.6495		
F - Construction	**8 318.6027**	**0.6656**	8 318.6027							0.0000
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	**375 377.6943**	**30.0362**	318 774.6760	6 297.8924		276.6229		322.6450		49 705.8581
H - Transporting and storage	**20 988.3376**	**1.6794**	20 988.3376					0.0000		
I - Accommodation and food service activities	**1 265.0709**	**0.1012**	1 265.0709							
J - Information and communication	**44 450.6665**	**3.5568**	44 414.0180							36.6485
K - Financial and insurance activities	**197 869.6626**	**15.8327**	194 506.5929	3 363.0697						
L - Real estate activities	**50 614.2831**	**4.0500**	50 544.7030	8.8890						60.6910
M - Professional, scientific and technical activities	**90 911.3788**	**7.2744**	90 856.8042					3.4819		51.0927
N - Administrative and support service activities	**3 958.1539**	**0.3167**	3 949.0739							9.0800
O - Public administration and defence; compulsory social security	**68 929.7565**	**5.5155**	68 929.7565							
P – Education	**548.4630**	**0.0439**	548.4630							
Q - Human health and social work activities	**2 370.5865**	**0.1897**	2 370.5865							
R - Arts, entertainment and recreation	**10 233.2266**	**0.8188**	10 233.2266							
S - Other services activities	**20.5423**	**0.0016**	20.5423							
TOTAL absolutely	**1 249 749.6201**	**100**	**1 173 042.0200**	**21 293.3553**	**2.8665**	**276.6229**	**1.6436**	**652.9856**	**219.5460**	**54 260.5802**
TOTAL relatively in %	**100**	**-**	**93.8622**	**1.7038**	**0.0002**	**0.0221**	**0.0001**	**0.0522**	**0.0176**	**4.3417**

Source: own research and Amadeus database

3. Conclusion

The aim of the paper was to research the differences in the division of the MNEs group tax bases between the individual Member States in current situation – i.e. when applying separate entity approach and situation when CCCTB will be introduced – i.e. applying the allocation formula for sharing the tax base. The comparative analysis of the national consolidation and group taxation rules revealed that at present, member states can be categorized into the four groups. Full consolidation is available only in Netherlands. All the other Member States are applying separate accounting approach. Pooling of the profit or loss on the parent company is allowed in nine Member States and intra-group loss transfer can be done in eight Member States. The research even revealed that there are Member States in which is not available any group taxation scheme.

Based on those findings, it can be considered that the introduction of CCCTB system with the possibility of full cross-border consolidation regimes will change the amount of the tax bases taxed in each jurisdiction due to the possibility of tax consolidation. The predicted changes in comparison with current situation are presented in following table.

Table 6: Changes in the division of tax bases across the EU Member States

Current situation	**CZ**	**DE**	**EE**	**ES**	**HU**	**PL**	**SI**	**SK**	**Total**
Total absolutely in th. EUR	1 239 297.3781	41 008.2167	15.7670	102.9150	11.9487	1 414.1383	219.5460	55 670.5120	**1 337 740.4219**
Total relatively in %	92.6411	3.0655	0.0012	0.0077	0.0009	0.1057	0.0164	4.1615	100
CCCTB application									
TOTAL absolutely in th. EUR	1 173 042.0200	21 293.3553	2.8665	276.6229	1.6436	652.9856	219.5460	54 260.5802	**1 249 749.6201**
TOTAL relatively in %	93.8622	1.7038	0.0002	0.0221	0.0001	0.0522	0.0176	4.3417	100

Source: own research

Current division of tax bases of subsidiaries of Czech parent companies in the EU28. As can be seen from the table 6, most of the tax bases (92.64%) are situated in the Czech Republic, which

belongs to the country where any group taxation scheme is available. Second largest share of tax bases of groups with Czech parent companies is situated in Slovak Republic (4.16%) as well the country without any possibility of group treatment for tax purposes. On the contrary, third largest share of tax base of groups with Czech parent companies is situated in Germany (3.06%), which allows pooling. Further, another country which allows pooling is Poland (0.11%) . Very small part of the tax base is situated in Spain, Estonia, Hungary and Slovenia.

Whereas in case that the group tax bases would be shared according to the allocation formula with three equally weighted factors (sales, payroll and assets), the tax bases situated in the Czech republic would increase on 93.86% (by 1.22%). In addition, the tax bases situated in Slovenia, Spain and Slovak Republic would record a very slight increase. On the contrary Germany would face decrease in the tax bases on 1.70% (by 1.36%) as well Poland, Estonia and Hungary This situation is caused by the fact that under CCCTB the tax base is shared according to the factors as sales, payroll or assets. This means that even though the subsidiary in the group has negative tax base or zero tax base, it can bring the share on the tax base into the Member State according to the allocation formula.

The results presented above indicate that there might be relation between decrease/increase in the share on the group tax base and the size of the state. Therefore the aim of further research will be to research this relationship and to predict the budgetary impacts on the Czech Republic.

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