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ANALYSIS OF SELECTED INDICATORS OF TAX COMPETITION AND TAX HARMONIZATION IN THE EU*

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Abstract. The paper aims to provide an analytical view of the harmonization of income taxes in the European Union. The aim of the theoretical part is to provide an overview of the literature that deals with the issue of tax harmonization and tax competition. This section contains the views of experts on tax competition and tax harmonization. The paper explores the current state, as well as the development in the field of income tax harmonization, and competition in the Member States. The aim of the analytical part is to compare income taxes in the countries of the European Union and to bring proposals for the solution of tax harmonization. The analysis focuses solely on the most important direct taxes, personal income tax, and corporate income tax. The results of cluster analysis using four tax determinants suggest the future of the direct tax harmonization process. The graphical analyzes indicate, that the process of tax harmonization could begin with the harmonization within countries that are geographically and politically close together. Harmonization would bring together countries with a similar tax burden and could continue in other interested European Union countries.

Keywords: taxation; income taxes; tax harmonization; tax competition

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1. Introduction

The European Union is using several incentive tools to sustain its economic growth. Harmonization of tax systems is (should be) one of them. The harmonization is a compromise of economic, legal, political and administrative rules to support the Unions common market. However, there are the Member States having

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objections to the income tax harmonization. Many politicians and experts support the idea of tax competition, which forces governments to be more efficient. The European Union seeks to push the boundaries of harmonization, thereby overcoming the barriers to the common market. It can be said that harmonization contributes to the economic growth of the European Union, but there are objections from the Member States, which objective is to protect sovereignty.

2. Theoretical background

In the area of tax harmonization, greater progress has been made especially in the field of indirect taxes. The reason is the elimination of the last barriers to the free movement of goods. Less progress has been reached in harmonizing direct taxes. The explanation for this is that the Member States consider interventions in the tax base and tax rates as an interference with internal affairs. (Horváthová, Mokrišová 2017)

According to Široký (2006), there are some limits in the European Union for individual types of taxes:

- indirect taxes are the focus of interest and harmonization;
- personal income tax remains within the competence of national governments;
- social and pension mechanisms serve to eliminate discrimination against nationals;
- corporate income taxes are intended to support the free movement of capital.

Tax harmonization is a multidimensional process of convergence and assimilation of the different tax systems of several countries by creating collective regulations and applying collective taxation principles based on economic, political and other resolutions to achieve the set objectives. (Lenártová 2012)

According to Nerudová (2014), the process of tax harmonization can be divided into three phases. The first is the type of tax that needs to be harmonized, the second is the harmonization of the tax base and, the last but not the least is the harmonization of the tax rate.

Table 1. Classification of tax harmonization

according to the used methods	
<i>Positive harmonization</i>	<ul style="list-style-type: none"> • implementation of directives, regulations and other legislative instruments, • the result is the same rules in all member states.
<i>Negative harmonization</i>	<ul style="list-style-type: none"> • the work of the European Court of Justice - tax case law, • does not create the same rules for all member states.
according to the current development	
<i>Direct harmonization</i>	<ul style="list-style-type: none"> • the classic process of harmonization through tax directives.
<i>Indirect harmonization</i>	<ul style="list-style-type: none"> • achieving harmonization through other areas of law.
by territorial point of view	
<i>Vertical harmonization</i>	<ul style="list-style-type: none"> • harmonization of tax systems according to different levels of government.
<i>Horizontal harmonization</i>	<ul style="list-style-type: none"> • harmonization of national tax systems.
according to the tax system	
<i>Total harmonization</i>	<ul style="list-style-type: none"> • all provisions of the tax system.
<i>Partial harmonization</i>	<ul style="list-style-type: none"> • selected provisions of the tax system.

Source: authors according Nerudová (2011)

In case there are identical tax rates, then we are talking about a, so called, total explicit tax harmonization, whereas, if there are similar tax rates, we are talking about partial explicit tax harmonization. The total harmonization, besides tax rates harmonization, means structural harmonization or harmonization of the tax structure. The harmonization of direct taxes mainly relies on the following main objectives: avoiding tax evasion and elimination of double taxation (Kozuharov, Ristovska, Ilieva 2015).

Široký (2013) considers tax coordination to be the first step towards the harmonization of tax systems. Some authors distinguish tax harmonization according to the methods used. Among the methods used in tax harmonization, transposition or implementation could be involved (Matoušek 2005).

The harmonization in the field of direct taxation is stagnant, as there are different accounting systems in the Member States, as well as the reluctance countries to further harmonization is relatively strong. The Ruding Committee founded in 1992 had to find out whether the different corporate taxation causes differences in the EU common market. Research has shown there are barriers to the free movement of capital and investment caused by the different structure of corporate taxation in individual member states.

Based on the research, four variants of corporate income tax harmonization were proposed (Mečár, Jurčíková 2006), which should result to changes in domestic taxation, a common consolidated tax base, a European corporate tax, and a mandatory harmonized tax base. The primary objective of the European Commission in the area of direct taxation was to harmonize tax rates. At present, the target has changed, and the European Commission is trying to harmonize the tax base. According to Nerudová (2011), the advantages of introducing a common consolidated tax base include introducing fair tax competition, eliminating barriers to mergers and acquisitions, reducing company costs, reducing government administrative costs and guaranteeing tax neutrality.

As the previous endeavors by the European Commission to submit the Common Corporate Tax Base (CCTB) have failed, and new aspects have arisen that increases the demand for a common viewpoint to corporate taxation in the European Union Member States, the Commission announced in October 2016 to re-launch the proposal-directive for a common consolidated corporate tax base (CCCTB) (Gondor 2017).

Peter van der Hoek (2003) presents a comprehensive review and analysis of tax harmonization and tax competition in the European Union. Small European Union country members tend to set lower effective tax rates than larger member countries.

An avid advocate for tax competition is Sinclair Davidson, whose attitude towards tax harmonization is very critical. Efforts to introduce tax harmonization are called a tendency to set up a tax cartel. (Davidson 2007)

The disadvantages of tax harmonization are, higher tax rates, slower economic growth, a decline in Member States' fiscal autonomy, intervention in Member States' national sovereignty and a threat to national budget revenues. Schultzová (2010).

A great deal of literature exists about tax harmonization and tax competition. One stream of authors advocates tax harmonization and the other advocates tax competition. Several authors have analysed the role of other variables in tax competition and tax harmonization (Hindriks et al., 2008; Zissimos and Wooders, 2008; Pieretti and Zanaj, 2011; Sanz-Córdoba and Theilen, 2018). International tax competition among countries is examined by several authors in their works (Cassette and Paty, 2008; Devereux et al., 2008; Heinemann et al., 2010; Cassette et al., 2013; Redoano, 2014; Altshuler and Goodspeed, 2015).

Vito Tanzi is one of the supporters of the idea of tax harmonization. In his work he describes several arguments for the introduction of tax harmonization. It mainly discusses the impact of lower tax rates of neighboring countries on the national economy. (Tanzi 1995)

Different tax policies create difficulties in requiring taxpayers' tax obedience. The increased mobility of production factors makes it easier for taxpayers to circumvent tax obligations. (Daly 1994). Corporate tax levels have fallen substantially in Europe during the last decades. A broad literature has identified tax competition as one reason for this decline in corporate tax levels (Streif 2015).

Nerudová (2011) includes among the disadvantages of tax competition unsatisfactory composition of government spending, ineffective delivery of public services, a distortion of investment flows, effects on world prices and inefficient allocation of resources.

In 2003 the European Council adopted a voluntary code of conduct against harmful tax competition, and more ambitious proposals for corporate tax harmonisation have been proposed, including the introduction of a single EU corporate tax (Conconi, Perroni, & Riezman, 2008). In the tax literature is proposed tax harmonisation to correct the alleged inefficiencies caused by tax competition (Boadway & Tremblay, 2011; Wilson, 1999; Wilson & Wildasin, 2004).

Restrictions on freedom of movement on the internal market are generated by differences between national tax systems so that some degree of tax harmonization in the Member States of the European Union is necessary (Matei, Pirvu 2011).

A lot of countries not agree with full tax coordination (Marchand, Pestieau, & Sato, 2003). An alternative is partial tax coordination, which seems to be a more realistic policy option (Beaudry, Cahuk, & Kempf, 2000; Betterndorf et al. 2010; Bröchner et al. 2007; Bucovetsky 2009; Burbidge et al. 1997; Konrad & Schjelderup 1999).

The topic of taxes and cross-border trade is also discussed in Hečková, Štefko et al. (2019). Cardarelli, Taugourdeau, and Vidal (2002), Catenaro and Vidal (2006), and Itaya, Okamura, and Yamaguchi (2008) have investigated the likelihood of tax harmonization among noncooperative governments.

3. Material and methods

The research sample represents 28 Member States of the European Union. The input data are secondary, obtained from Eurostat and OECD databases. We have watched:

- the share of personal income taxes in the country's gross domestic product;
- the share of corporate income taxes in the country's gross domestic product;
- the personal income tax rate;
- the corporate income tax rate.

Cluster analysis is a group of procedures designed to decompose a set of objects into several relatively homogeneous subsets (clusters) so that objects belonging to the same cluster are as similar as possible, while objects originating from different clusters should be as different as possible. All clustering procedures are based on some measure of distance or similarity between units (Trebuňa, Béréš 2010). Kalina, Vašaničová and Litavcová (2019) also deal with statistical analyzes in their works.

The basic methods of clustering we used were:

Hierarchical methods are based on sequentially joining of clusters, their number decreases continuously until finally all clusters are combined into one. The result is graphically displayed as tree diagram respectively cluster dendrogram.

Ward's method involves an agglomerative clustering algorithm. It looks for groups of leaves that it forms into branches, the branches into limbs and eventually into the trunk. Ward's method starts out with n clusters of size 1 and continues until all the observations are included into one cluster.

Ward's method use the Euclidean distance defined by the formula:

$$d_{ij} = \sqrt{\sum_{k=1}^n (x_{ik} - x_{jk})^2}$$

Where x_{ik} is the value of „k“ variable for i-th object and x_{jk} is the value of „k“ variable for j-th object. For calculated distance is than determined the rule of linking statistical units into clusters.

There were „p“ objects in the analysed group, namely 28 countries in which were pursued „k“ quantitative characters (4 variables), the distance d_{ij} between i-th element and j-th element was Euclidean distance.

Result of cluster analysis can be viewed using the dendrogram, which was created by using statistical program R 3.4.1. The Ward method was chosen within the hierarchical procedure.

The next individual graphs show the percentages of personal income taxes and corporate income taxes in the country's gross domestic product and the country's total taxes.

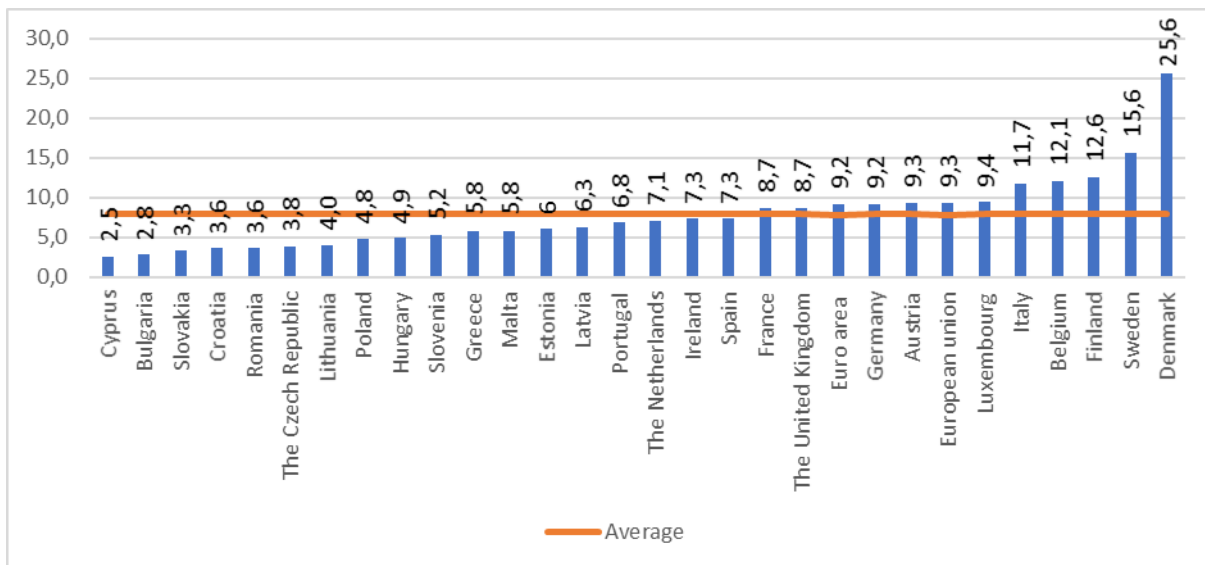


Fig. 1 The share of personal income taxes in the country's gross domestic product for 2016

Source: authors based on European Commission (2018)

Figure 1 shows the share of personal income taxes in the country's gross domestic product for 2016. These shares are ranked from the lowest to the highest. It is clear from the graph that Cyprus (2.5%), Bulgaria (2.8%), Slovakia (3.3%) and Croatia (3.6%) are among the countries with the lowest share of PIT on GDP. The countries with the highest rates of PIT on GDP include Italy (11.7%), Belgium (12.1%), Finland (12.6%), Sweden (15.6%) and Denmark (25.6%). The average share of PIT in the country's GDP for 2016 is 7.8%.

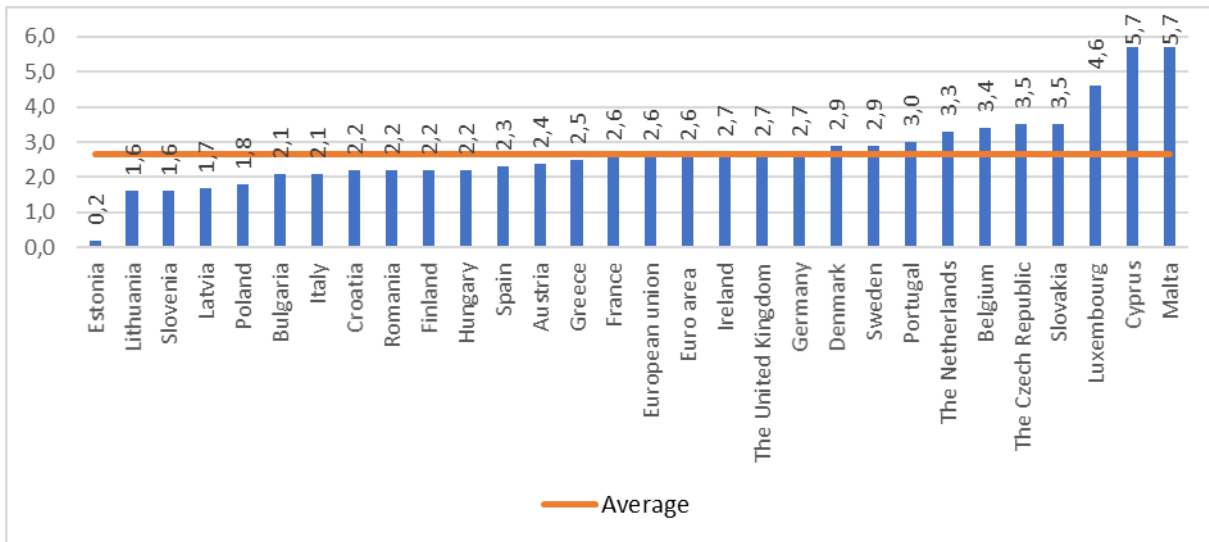


Fig. 2 The share of corporate income taxes in the country's gross domestic product for 2016

Source: authors based on European Commission (2018)

Figure 2 shows the share of corporate income taxes in the country's gross domestic product for 2016. Individual shares are ranked from the lowest to the highest. Estonia (0.2%), Lithuania (1.6%), Slovenia (1.6%) and Latvia (1.7%) are the countries that show the lowest share of CIT in GDP in 2016. On the other hand, Slovakia (3.5%), Luxembourg (4.6%), Cyprus (5.7%) and Malta (5.7%) are the countries that show the highest share of CIT in GDP in 2016. The average share of CIT in the country's GDP for 2016 is 2.6%.

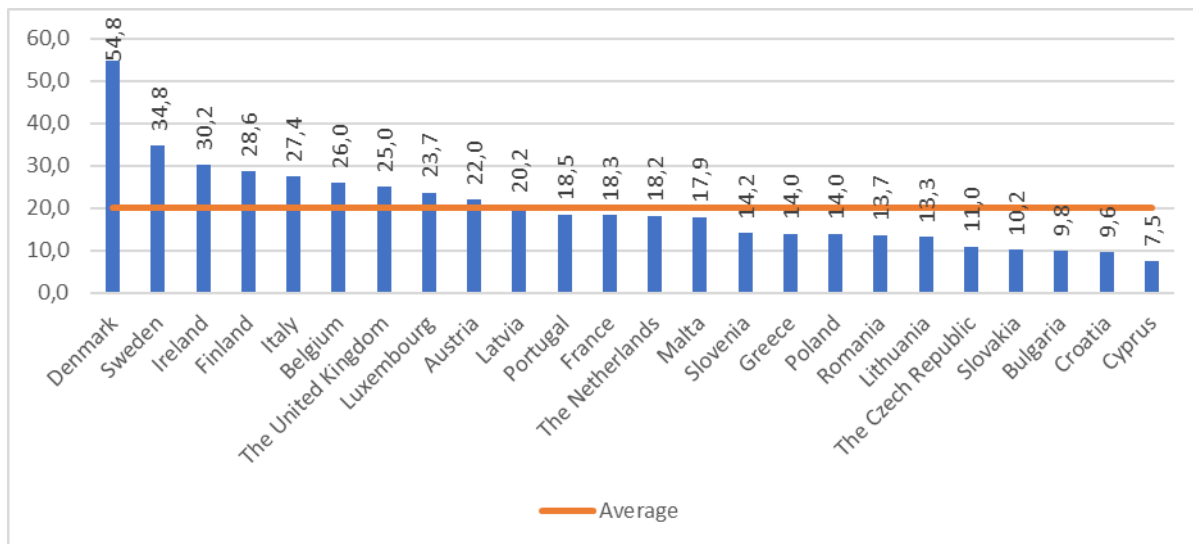


Fig. 3 The share of personal income taxes in the country's total taxes for 2016

Source: authors based on Eurostat (2018)

Figure 3 shows the share of personal income taxes in the country's total taxes for 2016. Shares are ranked from the highest to the lowest. As can be seen in the graph, among the countries with the highest share of PIT in the country's total taxes belong Denmark (54.8%), Sweden (34.8%), Ireland (30.2%) and Finland (28, 6%). The countries with the lowest share of PIT in the country's total taxes include Slovakia (10.2%), Bulgaria (9.8%), Croatia (9.6%), and Cyprus (7.5%). Data about other countries of the European Union are not available on Eurostat. The average share of personal income taxes in the country's total taxes for 2016 is 20.1%.

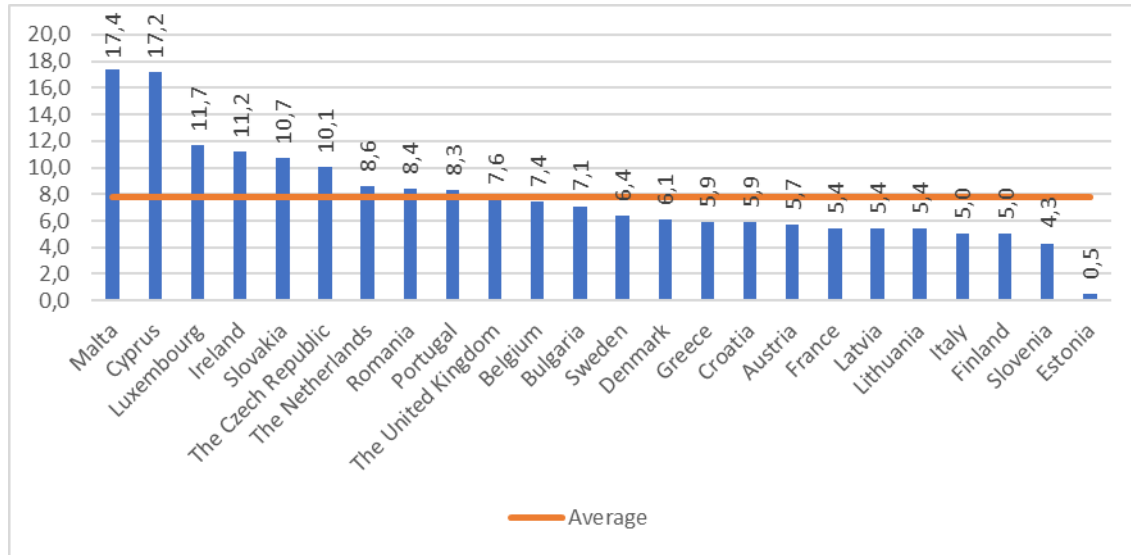


Fig. 4 The share of corporate income taxes in the country's total taxes for 2016

Source: authors based on Eurostat (2018)

Figure 4 shows the share of corporate income taxes in the country's total taxes for 2016. Individual shares are ranked from the highest to the lowest. Malta (17.4%), Cyprus (17.2%), Luxembourg (11.7%) and Ireland (11.2%) are among the countries with the highest share of CIT in the country's total taxes. Lithuania (5.4%), Italy (5.0%), Finland (5.0%), Slovenia (4.3%) and Estonia (0.5%) are the countries with the lowest share of CIT in the country's total taxes. Slovakia is one of the countries with a higher share of CIT in country's total taxes (10.7%). Data about other countries of the European Union were not available on Eurostat. The average share of corporate income taxes in the country's total taxes is 7.8%.

As of 2016, the average personal income tax rate in the EU was 39%, while the average corporate income tax rate was 22,5%. Tax structures tend to be quite different among Member States. The highest rate of Personal Income Tax was reported in Sweden, followed by Portugal and Denmark. At the end of the ranking was Bulgaria with 10% rate. The same applies to the Corporate Tax Rate in Bulgaria. The highest CIT rate was recorded in Malta, France and Belgium in 2016. (Figure 5)

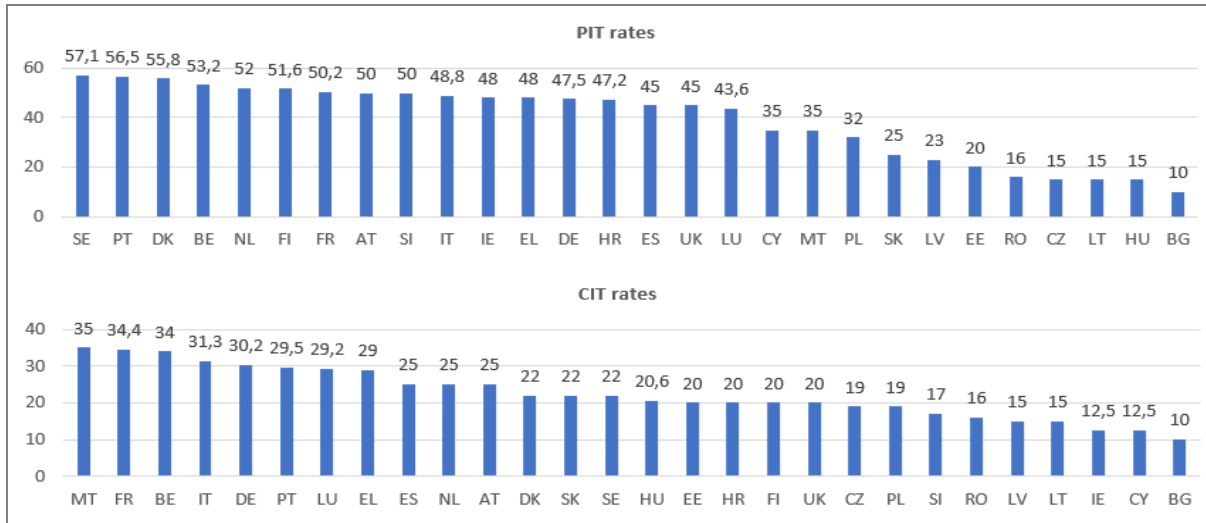


Fig. 5 Top statutory PIT and CIT rates in 2016 (%)

Source: authors, based on Eurostat data

4. Results

The average value of Personal Income Tax was 7,4% GDP in the EU-28 in 2006. In 2016, this average indicator rose by 0,3% to 7,7% GDP. In 2016 (compared with the reference year 2006), the revenues from personal income tax rose in 19 Member Countries. The biggest increase was recorded in Denmark (2,0%), Luxembourg (1,9%) and Portugal (1,7%). On the other hand, Lithuania (-2,8%), Hungary (-1,6%) and Sweden (-1,4%) recorded the most marked decline in comparison to the reference year. The highest collection of Personal Income Tax in 2016 within the EU-28 was in Denmark (26% of GDP), followed by Sweden and Finland. The lowest incomes from PIT was in Cyprus (2,5% of GDP), followed by Bulgaria, Slovakia, Croatia and the Czech Republic. By and large, most of the Member States are above the zero axis. Over the decade, there has been an increase in the choice of Personal Income Tax in the Union. (Figure 6)

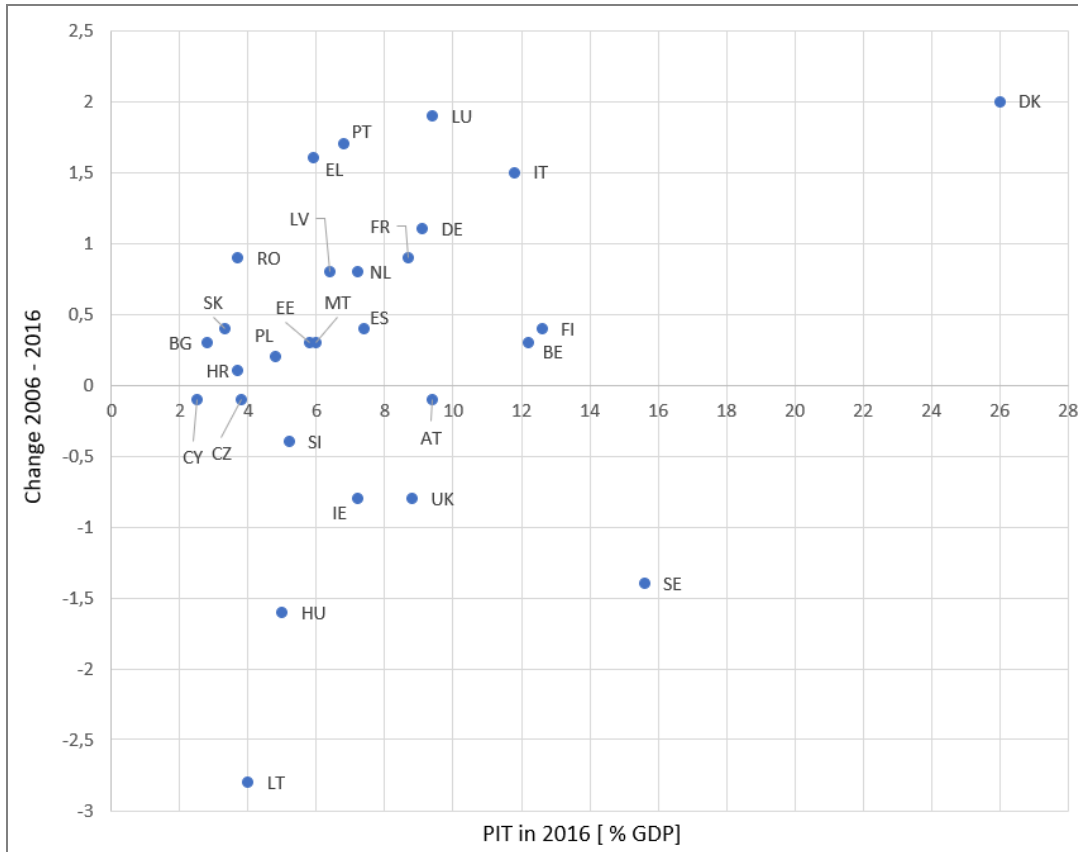


Fig. 6 Personal Income Tax in 2006 and 2016 (% of GDP)

Source: authors, based on Eurostat data

In 2006 the average revenue from Corporate Income Tax was 3,0% GDP in the EU-28. In 2016, this average indicator fell to 2,7%. In 2016 (compared to reference year 2006), CIT collection in six Member States increased, most in Malta (2,6%) and Cyprus (0,9%). On the other hand, Spain recorded the sharpest decline in comparison to the reference year (-1,8%). Highest incomes from Corporate Income Tax in 2016 were in Malta, Cyprus (both 5,8% GDP), and Luxembourg (4,6% GDP). The lowest amount was levied by Estonia (0,2% GDP). Most of Member States are below the zero axis. Over the decade, there has therefore been a drop in Corporate Income Tax in the Union. (Figure 7)

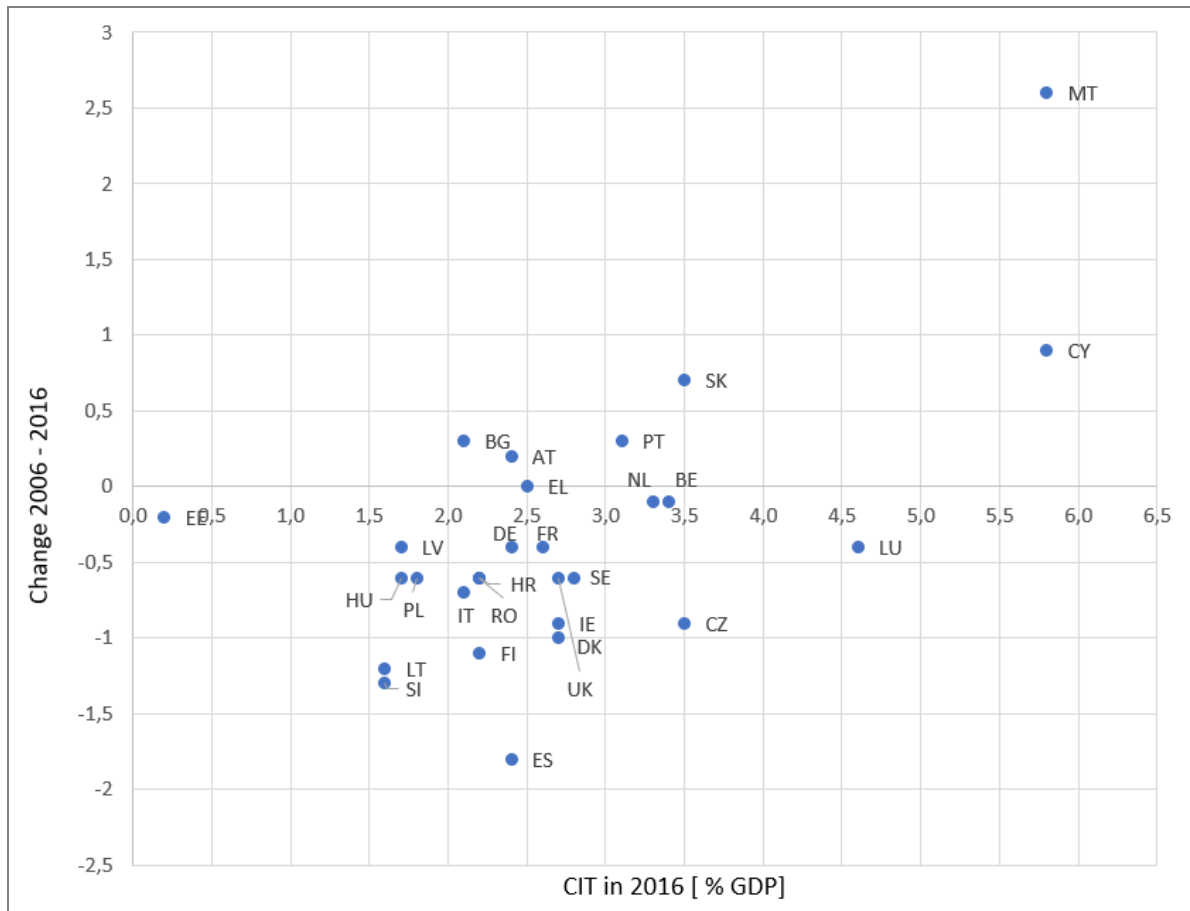


Fig. 7 Corporate Income Tax in 2006 and 2016 (% of GDP)

Source: authors, based on Eurostat data

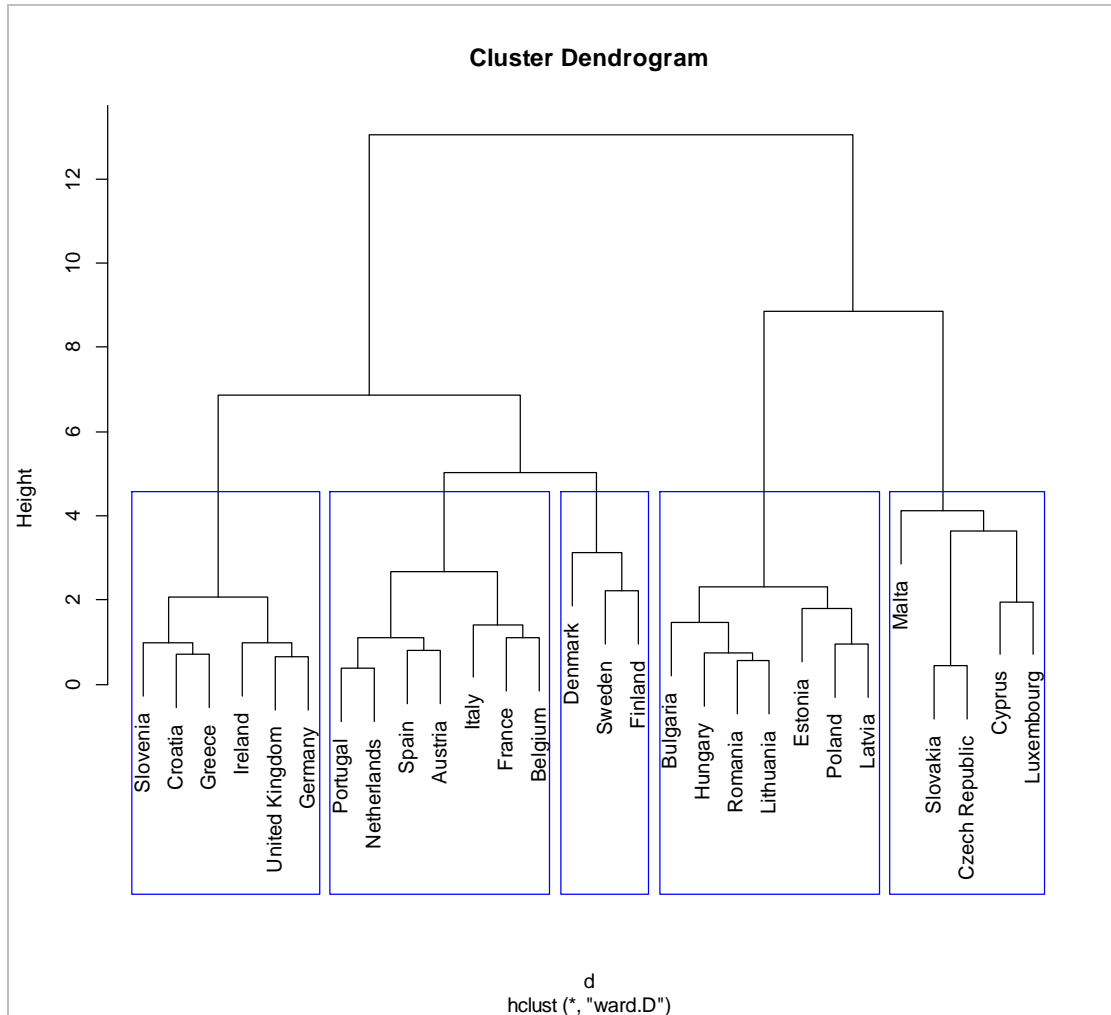


Fig. 8 Cluster dendrogram

Source: authors in R 3.4.1.

Figure 8 shows the distribution of the 28 member states of the European Union into five clusters according to the four variables selected. The first cluster consists of Slovenia, Croatia, Greece, Ireland, the United Kingdom, and Germany. These countries were grouped mainly based on similarity in the amount of the personal income tax rate (40 - 50%). The second cluster consists of Portugal, the Netherlands, Spain, Austria, Italy, France, and Belgium. For these countries, the main factor of similarity is the corporate income tax rate (25-33%). The third cluster is made up of Denmark, Sweden, and Finland. These countries are geographically close to each other and, besides, have a similar share of the corporate income tax on GDP (2.2-2.9%) and the corporate income tax rate (20-25%). The fourth cluster is made up of Bulgaria, Hungary, Romania, Lithuania, Estonia, Poland, and Latvia. Their greatest similarity is reflected in the corporate income tax rate (10 - 20%). The fifth cluster includes Malta, Slovakia, the Czech Republic, Cyprus, and Luxembourg.

Conclusions

Harmonization of income taxes is a complicated process in many ways. Some of the Member States of the European Union are no more willing to continue harmonization. They wish to retain their autonomy in deciding about taxes. So, this fact is crucial, whereas the tax harmonization requires the unanimous approval of all EU members.

High corporate income tax rate and personal income tax rate are mostly levied in Western Europe (e.g. the Netherlands, Belgium, France, the United Kingdom, Germany) or countries in northern Europe (eg Sweden, Denmark, Finland). This may hinder large companies from doing business and paying taxes in these countries, and they may begin to shift their assets to countries where the tax burden is lower. For that reason, tax competition is unfavorable for these states and they support tax harmonization. On the other hand, countries with a low tax burden support tax competition, because it is an advantage in the competition for foreign investors. These countries include mainly the “younger” EU members like Bulgaria, Cyprus, Lithuania Romania. Slovakia. To prevent tax evasion in large multinationals corporates, the European Commission has decided to develop the concept of a Common Consolidated Tax Base (CCCTB). The European Union seeks to promote this concept in the harmonization of corporate income taxes in order to support the free movement of capital.

The principle CCCTB is to combine the economic results of companies from all Member States, calculated according to a single European model and the subsequent distribution of profits by country, and its taxing based on the local rates. “Common Tax Base” makes business in the single European market easier, companies operating in several member states have less administrative burdens, which entail cost savings.

The European Parliament advocated common corporate taxation. According to most MEPs, harmonization is crucial for greater tax transparency and easier cross-border business. In addition to that obvious benefit of harmonizing common tax bases for multinational enterprises would help to establish an order for deductible items and allow explicit comparison of the tax burden on businesses. However, its opponents argue that it will restrict healthy competition and decrease the economic growth of Europe. Opponents of the concept believe that the CCCTB would increase the tax burden on businesses. Moreover, the benefits apply mainly to large companies. It would preferably cause inconvenience to SMEs.

The largest supporters of the CCCTB concept among the Member States are France and Germany. By contrast, the greatest opponents of the concept are the United Kingdom, Ireland, Estonia and Slovakia. Ireland argues mainly that lower corporate income taxes have caused rapid economic growth in the country. Slovakia also wants to retain its competitive advantage in the form of low corporate income tax rates. This competitive advantage provides Slovakia an inflow of foreign investment and economic growth, which helps reduce disparities between Slovakia and developed countries of the European Union.

The harmonization of income taxes in the European Union progresses slowly, and always brings the same arguments. The different political economic and social developments in the regions of Europe have been reflected in the acceptance of different tax burdens by individuals and businesses. The inhabitants of the post-communist countries were not accustomed to the high tax burden, which is typical especially in the countries of Western and Northern Europe. It is very questionable that attitudes towards harmonization will change soon.

The results of graphical analyses indicate the potential step forward to harmonization. The process could begin with the harmonization within countries that are geographically and politically close together. The geographical closeness of the countries in this case also largely represents economic and historical identity or similarity in recognized social values. Harmonization would bring together countries that have a similar tax burden first and allow them to cooperate more effectively. Countries that are inexorably seeking to harmonize taxes, such as

Germany and France have already thought about this idea. In this way, harmonization could be continued in other interested countries of the European Union.

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