Main Changes in European Tax Policies between 2007 and 2011

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SUMMARY

The paper is devoted to studying the tax policy changes of the European Union countries in the period of economic crisis. The main aim of the paper is to categorise the main types of tax policy responses to the economic challenges and the major influencing factors determining these responses. The main findings are the followings: the crisis intensified the tax competition among the countries. The countries with relatively low indebtedness and deficits tried to decrease the tax rates (especially the income tax rates) to reinstate their international competitiveness. Countries with high indebtedness and/or deficits could not follow this route without cutbacks in spending and finding new source of revenues. And finally there were countries that did not enter the field of tax competition.
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INTRODUCTION

Near the end of the first decade of the 21th century clear tax policy tendencies can be detected in the European Union countries. The free movement of production factors (capital, enterprises and labour force) led to specific tax competition, which was more intensive in the recently joined, less developed countries. The core reason for tax competition is to decrease the tax burden of production factors (i.e. the marginal rates of corporate and personal income taxes) in order to encourage the direct capital investments and economic growth. (Noregaard-Kahn, 2013) The decreasing revenues were financed from loans or from increasing other types of taxes – especially indirect taxes.

The economic crisis in 2008 meant a break in this process. The heavily indebted counties could not continue decreasing the direct tax rate; the increasing budget deficit caused by the consolidation of the bank system and by the crisis generally forced the policymakers to find new source of finance. But a tax increase can threat the chance of economic recovery and may lead to an vicious circle. The tax increase further deteriorates the competitiveness, investments fall, and the recession decreases the budget revenues, which provokes further tax increases. If the government cuts the expenses, the same would happen. The fall in demand caused by the public spending cut can freeze the economy, while poorer public services may lead to social tensions and/or weaker competitiveness.

In this paper I study the tax policies applied by the European Union countries in order to categorise the main types of response to the challenges of economic crisis and to detect the main influencing factors determining the response. The study examines the relationship among GDP growth, tax burden, and foreign direct investment, creating clusters by gross public debt/GDP, export/GDP, public deficit/GDP and balance of current accounts/GDP. The data for the examinations are obtained from the Eurostat databases.

TAX POLICY TENDENCIES BEFORE THE CRISIS

Taxation has almost the same age as the mankind. As Benjamin Franklin said, "In this world nothing can be said to be certain, except death and taxes." (cited in Adókalauz, 2009). Taxation is an integrated part of fiscal policy and the taxation is different in the particular countries. The main reasons for this phenomenon are the following (Taxation trends, 2013):

1. The ratio of public spending to the GDP differs significantly in each country. Where the public spending is more significant, the rate of taxation should be bigger.
2. For historical reasons we can observe meaningful differences in the rate of direct and indirect taxes. Direct taxes are levied on incomes and wealth, while indirect taxes are those in regard to the consumption of products and services.

3. The direct taxes may employ progressive or flat tax rates. The flat tax regimes use the same rate independently of the tax base size. The progressive tax rates are higher if the tax base is greater.
4. The tax system can use special taxes levied on particular sectors or products. Furthermore, the tax systems can differ from each other in point of employed tax allowances and tax exemptions. The complexity of tax rules, the frequency of tax declarations and payments, and the various approaches of double taxation also differ country to country.

This paper examines how the taxation has changed in answer to the crisis in the European Union countries, and what the effect of tax policy was on economic growth and public budget deficit, according to the available Eurostat data. In the analysis I examine only the first two aspects, as the database enables only this.

Although the tax systems differ, several common global tax policy tendencies were observed before the economic crisis broken out in 2007 (Norregard & Khan, 2007). The main features were the following:

1. Widespread use of Value Added Tax (VAT) – VAT was introduced by France in 1957, then it became the first harmonised and official tax of the European Union. Since then the VAT has been introduced in several countries outside the EU. Currently only 11 countries among the world's 160 countries have no VAT. The most meaningful exemption is the USA (Ebrill et al. 2001).
2. Globalisation and within this the freedom of capital movement strengthened the tax competition among countries. It meant that the capital began to move to the countries with lower corporate tax rates from the countries with higher ones. An efficient defence against tax havens has not been built up, so the capital-hungry countries were forced to decrease the corporate tax rate and the rates of other taxes on company profits. At the same time several countries began to use flat personal tax regimes. The flat taxes are extremely popular in the Eastern European region, where all of the countries except Poland introduced it by 2011. (Keen et al. 2006). However in 2011 one of the early introducers – Slovakia – turned back to a progressive personal tax.
3. Similar process can be traced in case of other types of labour taxes. The creation of new jobs became more and more important, and the multinational companies play a crucial role here. The cost of labour has got major significance in the settlement decision, which can be influenced by the fiscal policy if it lowers the tax burden of employment or increases tax allowances.
4. The tax competition decreased the share of direct taxes in the state budgets. Since the redistribution role of the state did not decrease, the share of indirect taxes to GDP increased before the crisis.
5. Globalisation strengthened the demand for tax harmonisation – especially in case of indirect taxes. Harmonisation – except for tax rates – has occurred in the case of VAT and excise taxes, but the harmonisation of direct taxes came up against difficulties. Tax harmonisation is not only the feature of the European Union. The same process can be observed in the case of the Central American Customs Union, too. (Ter-Minassian, 1997)
6. Double tax avoidance agreements are widespread; in the frame of this the taxation of capital income (interest and dividend) decreased or was eliminated.
7. From the 1980s the demand to support sustainable growth has appeared in taxation. During the 1990s several environmental taxes have been introduced. In line with this the consumption of fossil energy (natural gas, crude oil) was also more heavily taxed. The increasing concern about global warming and the insufficient fossil energy reserves forced policymakers to moderate energy consumption with tax policy measurements.
8. The weight of property tax increased especially in the taxation of local governments (Ter-Minassian, 1997).
9. Finally the economic cycles plays an important role in the tax policy. In the economic recovery period tax incomes increased, which stimulated the economic policy to decrease the tax rates. This tax rate moderation strengthened the economic boom and had a pro-cyclical effect. The short-term political popularity undermined long-term responsible thinking, so the tax moderation threatened the stability of pension and health systems where the birth rate was low (Tax reforms…, 2012).

In my research I examined Features 2, 3 and 4 in the European Union countries.

THE HYPOTHESES OF RESEARCH AND THE INPUT FACTORS

This paper examines which countries try to get a competitive advantage by tax moderation, and what the major influencing factors are to enter a tax competition. Secondly, I examine whether entering the tax competition leads to greater economic growth or not.

The data used come from the website of Eurostat and the analysed period was the 11-year period between 2002 and 2011. The chosen period is split by the crisis, since I tested with time series analysis if the deductions are prevalent in the different phases of economic cycles. The research covers the 27 member states of the European

Union. Croatia was excluded from the analysis, because during the examined period it was not yet a member of the EU.

The hypotheses of research were the following:

1. The smaller the GDP per capita, the greater the country's stimulation to enter the tax competition. If the economic development is low, generally the amount of tax revenues is also low compared to the GDP, so the foreign investment to the country can be increased by the lower taxation.
2. The relatively high economic growth rate enables the decrease of tax rates, since the tax base increase can compensate the effect of lowering rates. So the higher the GDP growth rate, the more the stimulation to enter the tax competition increases.
3. A high export ratio and a high foreign investment ratio also strengthen the stimulus for tax competition. Since economic growth is heavily determined by international competitiveness, economic openness makes the tax competition stronger.
4. There may be two factors which constrain the ability to enter a tax competition. Firstly the size of the public deficit, secondly the size of gross public debt. A European country will not take the risk to be in an excessive deficit procedure in long run, since this leads to the suspense of transfers and paying fines. That is why a higher level of public debt or deficit decreases the opportunity to take part in a tax competition.

RESEARCH METHODOLOGY

The test of the above hypotheses has been done by the following way:

The data required to test my hypotheses were downloaded from the website of Eurostat. The database gov_a_tax_ag provided detailed information about the tax revenue types compared to GDP. The main tax rates can also be downloaded, similarly the functional distribution of governmental spending compared to GDP.

After downloading the taxation figures, the public deficit/GDP, gross public debt/GDP, GDP per capita, GDP growth rate, FDI stock, export, and the GDP nominated in euro were also downloaded. To compare the country data, foreign investment and the export data were divided by the GDP.

The description of my input variables, the testable hypotheses and the abbreviation of input variables are shown in Table 1.

Table 1
Characteristics of input variables

Abbreviation	Description	Name of Eurostat database	Testable hypotheses
country	full name of the particular country		
abb	short name of the particular country		
def	deficit/GDP	gov_dd_edpt1	The larger the GDP, the smaller the tax rate decrease.
deb	gros debt/GDP	gov_dd_edpt1	The larger the gross debt, the smaller the tax rate decrease.
gdp	GDP per capita in euro	prc_ppp_ind	The larger the GDP per capita, the higher the tax burden and the smaller the tax rate decrease.
gro	GDP growth rate	nama_gdp_k	The higher the economic growth rate, the bigger the tax rate decrease.
fdi	Foreign direct investment to GDP	bop_fdi_main	The higher the ratio of FDI stock to GDP, the larger the tax rate decrease.
exp	annual export to GDP ratio	bop_exp_main	The higher the ratio of exports to GDP, the larger the tax rate decrease.

Source: Eurostat database, own

The arithmetical average of input variables was calculated between 2002 and 2011 for all of the 27 member states.

CREATING CLUSTERS BY THE INPUT VARIABLES

The countries were classified into four clusters by the input variables. I employed clusters, since I supposed that the countries in the same cluster have got the same motivation for tax competition. In economic policy several factors should be considered, and therefore the hypotheses cannot be examined as a function of only one variable. The result of cluster analysis gave distinct and interpretable country groups.

The cluster analysis was done by SPSS. After several trials the hierarchical cluster analysis gave the best interpretable solution, where I created the clusters by the Ward method using Euclidean distance. The Ward method strives to minimise the in-group variance and to maximise the variance among groups. Since my variables were quantitative variables, the Euclidean distance had relevance. Table 2 shows the main characteristics of the clusters.

Table 2
Clusters of the input variables

Countries of the cluster	Name of cluster	Number of countries	Geographical and cultural features
Germany, United Kingdom, Finland, Belgium, Denmark, Sweden, Austria, Ireland, the Netherlands, Spain, Italy, France	Developed	12	The most developed old member states belong to here. Geographically it covers the western half of the Union.
Czech Republic, Portugal, Malta, Greece, Slovenia, Cyprus	Average	6	Except for two former socialist countries these are Southern European countries. Their development is around the average of the EU with moderate economic growth potential.
Poland, Bulgaria, Rumania, Estonia, Lithuania, Latvia, Slovakia, Hungary	Less developed	8	Most of the the former socialist countries belong to this group. This cluster covers the Eastern half of the Union.
Luxembourg	Very developed	1	In point of input variables Luxembourg was too far from the other clusters to place in any group. There were indeed cluster types which split the EU into Luxemburg and the rest of the Union.

Source: Eurostat, own computation

I calculated the arithmetical average of input variables in case of each cluster. The results are shown in Table 3.

Table 3
Average of input variables in each cluster

Factors	def	deb	gdp	gro	fdi	exp
Developed	-0.27	57.98	26,391.67	2.47	46.36	59.76
Average	-3.84	57.47	18,451.85	3.26	40.34	62.39
Less developed	-2.49	29.98	11,005.56	5.69	40.17	61.89
Very developed	2.43	7.23	55,900.00	4.13	134.01	436.38
Average	-1.60	47.70	21,161.3	3.70	46.40	74.90

Source: Eurostat, own calculation

From the data it looks as if the convergence of the European Union country groups has increased in this period. The less developed country group showed the highest economic growth, while the developed country group has the lowest figure. The average deficit and the average growth rate of the developed group was the lowest between 2002 and 2011. However, their GDP per capita and foreign direct investment stock was the highest. The developed countries have large internal markets, which is why the share of exports is a moderate percentage of their GDP compared to the other country groups.

The averagely developed group has the highest state debt and deficit, but their openness was the highest. While the less developed group showed the same openness pattern as the average group, their average GDP growth rate was higher and their deficit lower than the average group.

Luxembourg has got a special situation. This is the smallest member country, but economically this is the most developed. Luxembourg is a very open economy with a disciplined fiscal policy and relatively high growth rate.

A one-factor variance analysis was carried out to test the significance of these variables as cluster-building factors. I excluded Luxembourg from the analysis and treated it as an outlier. The results are given in Table 4.

Table 4
Relevance of clusters

Factors	def	deb	gdp	gro	fdi	exp
Variance among clusters	2.2	171.2	93,540,886.6	1.9	8.3	0.0
Total variance	6.8	673.9	183,491,353.4	3.1	813.7	0.1
Ratio	31.8%	25.4%	51.0%	61.2%	1.0%	1.1%

Source: Eurostat, own calculations

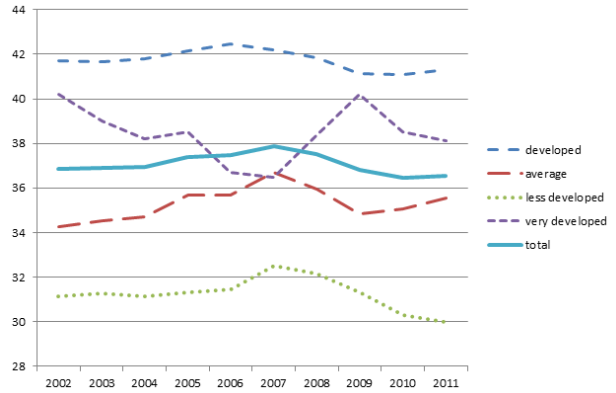
The explanation power of the clusters is strongest for development indicators (GDP level, and growth). The explanation power is moderate in the case of indebtedness indicators (deficit and gross debt) and insignificant for openness (foreign direct investment and export to GDP ratio). So the clusters are suitable for testing Hypotheses 1, 2 and 4 – which consider the linkage between economic growth, economic development, indebtedness and tax competition, but the relationship between economic openness and tax competition cannot be tested by using these clusters.

THE STATEMENT OF ANALYSIS

In the analysis the relationship between the tax income/GDP ratio and the clusters was examined in order to focus on the tax rates for the following reasons:

1. In point of tax competition the pure tax rates have no significance. If a country uses a high tax rate, but employs several allowances and tax relief, the real tax burden in terms of enterprises and households can be favourable. This statement is especially true in the case of personal and corporate taxes, where the tax base and the methods of tax deduction may differ widely.
2. If the black economy plays a significant role, the high taxes are only paid by a few honest taxpayers, and the tax rate cannot be a perfect figure to measure the real tax burden for the whole economy.

Let us look first at the overall tax burden. The collected tax revenues in European Union declined moderately during the period. This declining trend was not interrupted by the crisis. Figure 1 shows that the less developed EU countries have got smaller tax burdens than the more developed ones.



Source: Eurostat, own calculations

Figure 1. The average tax income/GDP rate of country clusters between 2002 and 2011

The lower income level and the smaller gross debt of the less developed countries encouraged them to decrease their average tax burden in this period. It is interesting that the major tax decrease happened after the eruption of the crisis. Because their indebtedness was much lower than the average, they could stimulate their economy by offering lower tax rates to investors. In the average group the tax burden increased. This also fits the hypothesis of my research, since the indebtedness and the deficits were highest here. Here the reinstatement of financial equilibrium was the top priority target, and they were unable to enter the tax competition.

If we focus on the importance of the various tax types we can derive a deeper conclusion regarding the tax competition. The international competition is worsened first of all by taxes on capital and income, while the role of consumption taxes is not so vital. The consumption taxes have no importance for the exporting sectors – only the domestic prices will be higher and therefore the domestic demand may be lower, which affects the profit of enterprises producing for the domestic market. But taxes on profit and employment decrease directly the profit of all enterprises. In the case of consumption taxes there are no big differences among the clusters, as you can see in Figure 2.

Note how the consumption tax burden varied over time and how close their GDP shares were to each other. The rules of consumption taxes are harmonised in the EU except for the rates. Although there are some minor differences by the country groups, the differences are much lower than for the average tax burden (see Figure 1).

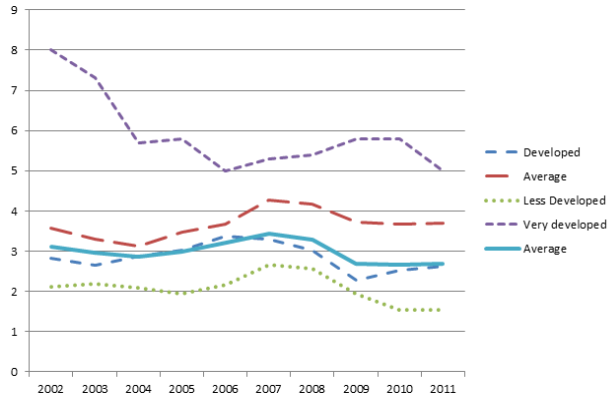
Source: Eurostat

Figure 2. Consumption taxes/GDP ratio in the clusters between 2002 and 2011

The indirect tax burden increased in all three country groups after the eruption of crisis (not in Luxembourg, however). It seems, that majority of the countries tried to compensate for the lacking tax revenues by increasing the taxation of consumption. By the way, this policy helps to balance the current account (by taxing imports) and indirectly to encourage savings and debt repayment.

If we look at the variance of indirect tax burden, only approximately 10% of the variance can be explained by the clusters (excluding Luxembourg); 90% of variance come from the clusters inside. So we can state that the level of indirect taxes does not depend on the indebtedness or economic growth indicators in the EU.

In point of tax competition, direct taxes have more relevance, since the final target of tax reduction is to improve the competitiveness of manufacturing. Within the category of direct taxes, corporate tax is of more importance than taxes on employment. Now significant differences can be observed among the country clusters. Let us look at first the changes in corporate tax income (Figure 3).



Source: Eurostat

Figure 3. Corporate tax income/GDP in the company clusters between 2002 and 2011

After the crisis the corporate tax income decreased in each country cluster. However, this decrease is better explained by the smaller tax base (fall in company profit) than the decrease in tax rates. But as a sign of tax competition the decrease was bigger in the less developed segment than for the other country groups, with the exception of Luxembourg. Here the corporate tax rates were also reduced.

If we study the variances, the explanatory power of clusters increased from 40% (2002) to 71% (2011). This means that the country clusters harmonise their corporate tax strategies, while the difference among the clusters increased. However, there was a moderate decrease in total variance (from 1.45 to 1.38).

Even larger differences can be observed for the taxes on employment. Taxes on employment include social contribution fees, personal income tax, and other taxes paid by employer or employee. Figure 4 shows the change in taxes on employment.

Data source: Eurostat

Figure 4. Taxes on employment/GDP ratio in the country clusters between 2002 and 2011

It is obvious that the developed countries have the largest burden on employment. These countries have got generous health and pension system whose financing requires sources. To finance the social contribution, the share of these taxes remained the same in the average and the developed cluster. But the less developed country cluster the tax burden decreased, regardless of whether we look at the pre- or post-crisis period.

One-factor variance analysis underlines the significant differences among the group. Here the variance among clusters rose from 81% to 89% (excluding Luxembourg) for total variance. In the less developed segment the lowering of taxes on employment seemed to be a common strategy to manage the post-crisis economy.

These clusters were not appropriate to test the linkage between tax competition and economic openness, because there was no significant difference in openness among the clusters. That is why I try to directly examine the relationship to draw the relationship in scatterplot. I plotted several charts for direct taxes, the change in direct taxes and the two indicators of economic openness (export to GDP, FDI to GDP). But the plots appeared ramdomly and did not indicate a relationship. The other examinations carried out in this way brought the same result. So I cannot justify Hypothesis 3. The failure max be caused by the fact that governments stimulate the settlement of multinational companies rather by giving targeted subsidiaries and tax allowances and by granting overall low tax environment. In addition, a favourable tax environment is only one factor which the companies consider when choosing a location: there are other more vital factors (security of investment, accountability of economic environment, skill and competence of labour force) which affect the decision.

CONCLUSIONS

From the analysis I have found that the tendency towards tax competition is the strongest in the less developed country cluster. These countries decreased the taxes on employment and corporate income rather than indirect taxes. This tendency was valid not only before, but also after the crisis. But after the crisis the stimulus for tax competition increased in the less developed country cluster.

The economic growth of the less developed cluster was significantly better than that of the other country clusters, but the level of public debt to GDP was lower. These two factors make it possible to enter the tax competition.

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