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CAPITAL TAXATION IN EUROPEAN TRANSITION ECONOMIES: COMPARATIVE ANALYSIS

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Abstract

Capital taxes have an important place in the tax policy due to its role on economic growth and other effects. Capital taxes derived from different economic sources or parties such as: income of households, income of corporations, income of self-employed, stock of capital. In EU, related with the goals of the tax policy which can be explained as: equity-efficiency, capital taxation can be varied in different countries. For EU transition economies, economic growth may become preferential goal of the tax policy related with the relatively low level of GDP in contrast with EU15. So, EU transition economies may apply tax policy in favor of capital. In this study, we investigated our assumption: *capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital".* Tax statistics of Eurostat on capital taxation for several indicators were used for the period of 2008-2018. Our statistical analysis and findings partially show that capital is taxed relatively low in EU transition economies and tax burden on capital has decreased more than EU15 in the period of 2008-2018.

Keywords: Capital taxation, transition economies, tax policy, growth.
JEL Codes: H20, H21, H30, O40.

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1. Introduction

In the OECD classification, the term "taxes" is defined as *"confined to compulsory unrequited payments to general government. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments"* (OECD, 2018: 5)[1]. *"Tax revenue is considered to be unrequited because the government provides nothing directly to the individual unit in exchange for the payment. Governments may use the tax revenue to provide goods or services to other units, either individually or collectively, or to the community as a whole*" (IMF, 2014: 84). There is no direct relationship between the level of services gained by the individual taxpayers and the level of taxes paid by the taxpayers.

Taxes, in terms of economic resources are classified as; income, wealth and expenditure taxes. There are also more detailed classifications such as; taxes on income, profits and capital gains, taxes on payroll and workforce, taxes on property, taxes on goods and services, etc. which can be considered within the framework of the OECD approach (OECD, 2018: 3-4).

Governments try to achieve three main functions of taxation; to achieve the aims of raising enough revenue in an effective way, reducing unfair distributions of wealth, and regulating economic activities by diversicating the taxes over different economic sources and operations (Avi-Yonah, 2006: 4). Tax policies are shaped within the framework of economic, financial, social and political purposes. Several fiscal policy objectives such as fairness, equity, justice economic growth, price stability, and wealth distribution constitute the basis of tax policy and taxation of different economic resources.

In growth-oriented taxation, policies regarding the tax burden on capital are one of the most important point. It is possible to see policy implications in many countries such as tax reductions on capital income as a means of fostering economic growth (Palomba, 2004, p. 3). Channels between savings, capital accumulation, investments play a vital role for economic growth. From this point on, while reducing the tax burden on capital may affect economic growth positively, distortionary taxation may have negative consequences for economic growth.

Capital taxation may have different results in terms of economic effects and growth, on which resource or economic unit it creates a burden. The effects of taxing institutions, households or capital stock arise through different channels and mechanisms. In the following sections of the study, the effects of capital taxes will be discussed with a focus on growth, as well as the effects of capital taxation on different units and resources.

[1] For more details; OECD, 2018: 3-4.

2. Purpose of the Study

In this study, 11 countries, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, were selected as transition economies[2] (Hereafter EU11) in the European Union[3]. These countries are represented by the abbreviation EU11 in tables, graphics and the text. The study focuses on examining capital taxation in EU11 countries in comparison with EU15 countries. The study is based on the assumption that the tax policy in the EU11 will prioritize the economic growth target, depending on the relatively low GDP level.

EU11 are countries with lower levels of GDP in the European Union than in EU15 countries. Considering the fairness and efficiency purposes of the tax policy, it is thought that countries with relatively high GDP levels may give priority to justice in taxation. For the relatively less developed EU11, the economic growth target is a priority policy that tax policy should take into consideration. Within the framework of economic growth target, it is assumed that capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital. The study aims to investigate the accuracy of this assumption by analyzing the taxation of capital in EU11 and EU15 countries within the framework of statistical data.

3. Method and Data

Tax statistics in European Union for the period 2008-2018 derived from European Commission Data on Taxation Database were used in the study. For the selected period, taxation on capital as % of GDP and % of total taxation were examined. In addition, in the period of 2008-2018, tax burdens on capital in terms of different economic units or sources were analyzed.

The data on capital taxation are evaluated in 4 different categories as used in the European Union classification. These are capital taxes on: income of households, income of corporations, income of self-employed, stock of capital. Capital taxation for these 4 different categories has been handled comparatively in terms of both the ratio to GDP and their share in total taxation.

The statistical data of EU11 and EU15 countries in terms of both trend and current data are presented and analyzed with tables and graphs. Tax burdens on capital for EU11 and EU15 countries were analyzed statistically with comparative studies and the accuracy of

[2] The term transition economy represents "*Eastern European countries that became independent in 1989, the new nation states formed by the breakup of former Yugoslavia, the countries west of the Ural that formerly were part of the Soviet Union, and Russia"* (Becker & Fredriksson, 2012, p. 308). All countries selected as transition economy in our study are member of European Union.

[3] IMF Classification of transition economies (IMF, 2000)

Transition economies in Europe and the former Soviet Union (CEE): Albania, Bulgaria, Croatia, Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Slovak Republic, Slovenia
Baltics: Estonia, Latvia, Lithuania
Commonwealth of Independent States
(CIS): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
Transition economies in Asia: Cambodia, China, Laos, Vietnam

the assumption of the study that *"capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital"* was investigated.

4. Literature

The economics and public finance has a very comprehensive literature and theory on both capital taxation and its economic effects. Capital taxation can have consequences for investments, company decisions, asset policy, savings and economic growth through a variety of channels.

Bösenberg & Zoller (2018), showed that with the data on 79 countries in the period of 1996–2011, capital-tax reductions create positive effects on output and the capital (Bösenberg & Zoller, 2018, p. 325). Short-run and long-run effects also underlined in the literature by Chen et al. (2017). Researchers found different effects in the short run and in the long run with their research that effects of capital taxation on innovation and economic growth in an R&D-based growth model was examined. They found negative effect of capital taxation on the equilibrium growth rates in the short run while the effect of capital taxation is positive on steady-state economic growth in the long run (Chen et al., 2017, p. 207.)

In another research focusing more broadly on different taxes beyond capital taxation, the different channels through which taxes affect economic growth are examined by Ferretti & Roubini (1998). They analysed the growth effects of income and consumption taxes with their model which, growth process is driven by the accumulation of human and physical capital. Authors show that, generally, the taxation of factor incomes derived from human and physical capital are reducing economic growth with their study examine the effects of income and consumption taxation Ferretti & Roubini (1998, p. 721).

Smith (1996), focus on uncertainity in his analysis on effects of taxes on growth. Findings are interestingly controversial related with the uncertainty and intertemporal substitution of consumers. Smith (1996), stated that: *"If the elasticity of intertemporal substitution is large, however, then the fall in the variance causes growth to decline by less than predicted by non-stochastic models; it is actually possible for a tax increase to enhance growth"* Smith (1996, p. 1647).

Feldstein (2006), focused not only on capital taxation but also on the effect of marginal tax rate on growth. Author focused on effects of high marginal tax rates on income of labor and on income of investment. He stated response of future consumption is the main issue about tax on investment income. Comparatively he tax on labor income has a smaller deadweight loss than a tax on investment income under the condition of same present revenue[4].

[4] Feldstein (2006), analyses concentrated on variables: taxes on labor income, tax on investment income, future consumption, net rate of return, labor supply. Feldstein (2006), mentioned: *"A tax on investment income brings a deadweight loss even if household saving does not respond to taxes and the net rate of return. The response of future consumption is the core point here in the analysis. The tax on investment income is also effectively a tax on labor supply because current work effort produces income that will be spent on future consumption and the tax on investment income reduces the future consumption that results from more work today"* (Feldstein, 2006, p. 2).

It is also possible to see researches in the literature that directly focus on transition economies and investigated capital taxation or its dimensions. Rose & Wiswesser (1998) analysis on transition economies suggests for the countries in that category that for completing the transition process to market-oriented structure, countries need to compensate the capital needs in terms of both human capital and real capital. For that reason, tax system should guarantee the capital is protected from high tax burden to attract capital from the developed countries (Rose & Wiswesser, 1998, 257.)

In another research that investigates the impact of policies on FDI, stated; unit labor costs, the corporate tax burden, infrastructure, foreign exchange and trade regime as key factors which determines FDI. They found adverse relationship between high corporate tax burden with FDI even if the effect differs based on country's income level (Demekas et al., 2007, p. 381). Also, tax policy mentioned in another research as decreasing marginal rates for stimulating growth. Sachs & Warner (1996), in their research on CEEs(Central European economies), they suggested the fiscal policies include low rates of marginal taxation to achieve the rapid growth rates[5].

The extensive literature provides strong evidence that capital taxation has comprehensive impact on economic growth, in the same direction with our projection. The facts and relations presented by the literature will be a guide in our analysis for EU11.

5. Theoretical Framework of Capital Taxation

Tax policy is one of the key elements of growth-oriented fiscal policy especially at the point of reducing distortionary effects of taxation on assets and sectors (Shirazi & Shah, 1994). While the topic is economic growth, capital taxation is one of the core decision area. Proper design of capital taxation is one of the vital questions of public finance theory and arguments especially center around trade off between equity and efficiency (Saez and Stantcheva, 2017, p. 1). Fort that reason, capital taxation has an important role in the governments' tax policies at some key points all over the economy. Capital income taxes or other types of taxes imposed on capital take many forms such as interest, dividends, capital gains, business profits, the value of the housing services enjoyed by owner-occupiers, corporate income, property, other forms of wealth, etc (Sørensen, 2007, p. 173). Capital taxation is essentially a savings taxation. Capital taxation, besides its financial function, is generally considered within the scope of income and wealth distribution. The state tries to fulfill the function of income distribution justice by taxing the savers, that is, individuals who can earn income over their consumption level.

[5] Their study suggests wide range of fiscal policies in addition to tax policy which should concentrated to decrease to marginal tax rates. For more details: (Sachs, & Warner, 1996, p. 28).

Savings play a key role, especially in terms of economic growth[6], as the source from which investments[7] are fed. (Feldstein & Horioka, 1980, p. 328; Carroll and Well, 1993, p. 61; Papanek, 1973, p. 120.)[8]. As the savings level in the country increases, borrowing costs decrease. Thus, the borrowing interest decreases and investment costs decrease. In countries where economic growth is a priority, efficiency becomes prior as the primary goal of tax policy. By minimizing the distorting effects on economic actors and variables, a growth-oriented tax policy can be implemented.

Relationship between level of interest rate, taxation and consumer's decisional behavior between savings-consumption, also at intertemporal level have been stated by researchers and has been a central concern of economists at least since the development of classical macroeconomics (Boskin, 1978, p. 3). Higher tax burden on savings will naturally increases the cost of savings. Negative effects on savings may also have negative consequences for economic growth in the medium and long term. In countries where the economic growth target is a priority, the taxation of savings is important for tax policy. Countries encourage saving by taxing savings less. In this way, they can aim to increase investments and achieve economic growth by decreasing the interest cost. In this framework, policies supporting savings and also capital accumulation play an important role in the terms of economic growth through the channel related with investment.

5.1. Capital Taxation on Income of Households

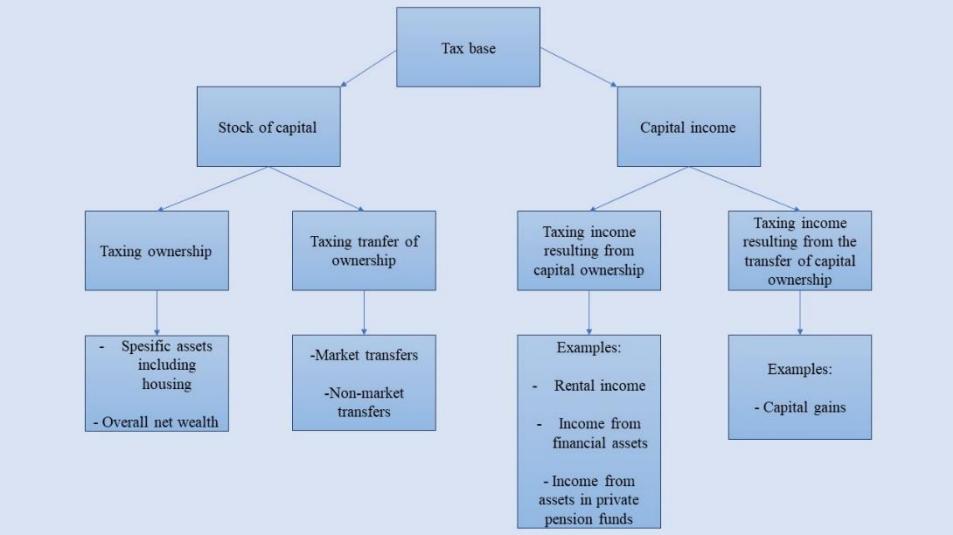
Taxation of household capital income plays a key role in terms of economic efficiency in many dimensions (Mirrlees, 1971). Capital taxation affects the saving and investment decisions of households. This can deviate the saving rates from the optimum level required for growth and create distortionary effects (Zipfel & Heinrichs, 2012, p. 2). Capital accumulation and therefore after-tax return are closely related with the economic growth with the effects on households investment decisions by the channel of changing cost of investments on capital (Princen et al. 2020, p. 8).

[6] Fry (1980), investigated the relationship and some channels between interest rate, savings, investment, growth and capital stock. Fry underlined that *"the growth rate is itself affected positively by the real deposit rate of interest through two channels – first, the volume of saving and investment and, second, capacity utilization of the entire capital stock, i.e. the measured incremental capital/output ratio"* (Fry, 1980, p. 317).

[7] Feldstein & Bacchetta (1991) founds that with their analysis; increase in domestic saving has a substantial effect on the level of domestic investment. (Feldstein & Bacchetta, 1991, p. 218)

[8] Feldstein& Horioka (1980), shows that "*increases in domestic saving will be reflected primarily in additional domestic investment*". Authors found thess results under the assumption: *"if portfolio preferences and institutional rigidities impede the flow of long-term capital among countries"* (Feldstein & Horioka, 1980, p. 328).

Graph 1. Taxing Household Capital Stocks and Capital Income



Source: Prepared by the author with the graph at Princen et al. 2020, p. 7.

Graph 1 presents the theoretical sources of taxes levied on household capital income and capital stock in the European Union. According to this; capital of households is taxed by two channels which are on two basic economic resources; stock of capital and capital income. In this framework, taxation of capital emerges in a two-sided framework such as capital ownership (stock of capital) and obtaining capital income derived from previous/accumulated capital investments.

Under the assumption of efficient and perfect competition market conditions, capital taxation can have distortionary effects on the decision of which assets to invest, while affecting the investment volume of the household (Princen et al. 2020, p. 7). With the distortionary effects mentioned above, it can be possible that any increase in the tax burden on household capital stocks and capital income may results with the decrease on economic growth.

5.2. Capital Taxation on Income of Corporations

In European Union classification, capital taxation on income of corporations represent *"Taxes on capital and business income that economic agents earn or receive from domestic resources or from abroad includes taxes on income or profits of corporations"* (European Commission, 2020, p. 266). Capital taxation as a factor of capital tax burden on businesses affects firm choices. It can affect the choice of location and investment decisions. Firms may move to countries with lower tax burden and resulted with the capital outflows from the countries. Given the negative growth effect of taxes on capital, growth-oriented countries should keep the burden of taxes on capital lower than the other taxable sources (Zipfel & Heinrichs, 2012, 2).

For the firms, corporate income tax is a one of the most important decisive factor in the choice of investment location and also size of an investment project[9]. As a result, based on the location choice, foreign direct investments are also affected by the capital tax burden of the country (Nicodème, 2008: 15).

On the other hand, lowering the corporate tax rate as a capital taxation can improve the quality of investment by reducing possible and potential tax-induced distortions in the choice of assets. Additionally, predictable and simple legislations on capital taxation could enhance growth performance of the country (Johansson, et al. 2008, p. 9).

Reducing tax burden on capital can enhance investment and has positive effects on economic growth in various ways. These can be summarized as[10]:

- Lowering tax rate/burden on capital may increase the overall investments

- Lowering tax rate/burden on capital may enhance the profitability of the firms

- Lowering tax rate/burden on capital may reduce the distortionary effects on capital investments

- Lowering tax rate/burden on capital may support the motivation of foreign direct investments.

5.3. Capital Taxation on Stock of Capital

According to classification of European Union, *"Taxes on capital stock; include the wealth tax, capital taxes including the inheritance tax, the real-estate tax and taxes on the use of fixed assets. Professional and business licences and some taxes on products and possible other taxes and levies that could be regarded as a prerequisite for entering into production if not allocated elsewhere, would ft in this category even if the tax base is not the stock of wealth"* (European Commission, 2020, p. 266)[11]. Capital stock taxation is not a tax imposed on the profit of the firm like corporate tax. These taxes are imposed on a business's net worth or accumulated wealth. In this respect, it is a tax paid on the capital stock, whether the firm makes a profit or not. The tax tends to penalize investment regardless of profitability of the firm in a current year (Cammenga, 2020).

Focusing on taxing household capital stocks may has different aspects in contrast to firm's capital stock. Taxing inheritances and gifts helps reduce wealth inequality between different income groups and increase the equality of opportunities in entire society. In addition, capital stock taxation at household level are considered to be among the least

[9] Carry out a synthesis of previous results of the research in the literature on taxation and foreign direct investment. They transform the results from a variety of studies into uniformly defined semi-elasticities. According to their study, on average, the literature reports semi-elasticities with a median value of − 2.9. This result means that % 1 increase in effective corporate effective tax would decrease foreign direct investment by % 2.9". (Mooij & Ederveen, 2006, p. 18).

[10] Kate & Milionis (2019), pp. 788-789; Gale & Samwick (2014), p.3; Devereux (2007), p. 3; Fatica (2013), p. 21.

[11] EU classification of Taxes on stocks/wealth: D.214- Taxes on products, except VAT and import taxes: D.214b Stamp taxes, D.214c Taxes on financial and capital transactions, D.214k Export duties and monetary compensatory amounts on exports, From D.29- Other taxes on production:, D.29a Taxes on land, buildings or other structures, D.29b Taxes on the use of fixed assets, D.29e Business and professional licences, D.29h Other taxes on production n.e.c., From D.59- Other current taxes: D.59a Current taxes on capital, D.59f Other current taxes on capital n.e.c., D.91 Capital taxes (European Commission, 2020, p. 266).

distortionary taxes (Princen et al. 2020, p. 7). Distortionary effects for capital stock taxation at household level may occur due to high savings level in the upper income group.

5.4. Capital Taxation on Income of Self-employed

The question of in what economic taxation self employed income[12] will be considered is not very clear. Self employed income can be considered as mixed income of capital and labor. But from another point of view, self employed actually takes risks like an entrepreneur and unlike labor, take the risk of incurring losses when maintaining their economic activities. For that reason, EU considers the self-employed income into the capital income sub-category for the self-employed (European Commission, 2020, p. 265).

Since capital gains and savings level are higher in upper income groups, capital taxation accrue mostly results with tax payment of high-income earners (Princen et al. 2020, p. 29). This is mostly valid at individual level both for households and self-employed. So capital gains taxation of self-employed is resulted with similar effects like capital taxation at household level.

6. GDP Rankings and Trend of Growth Rates in EU11 and EU15

Although there are many variables that show the development levels of countries, one of the most important indicators in this sense is the GDP level of the economies. Table 1 shows the GDP level in EU11 and EU15, world GDP rankings and periodic real economic growth data, in terms of being one of the main variables in terms of showing the development levels.

[12] There is a complexity as to whether self-employed income in capital income or labor income. Or which part or what level of self-employed income is accepted as capital or labor income. EU approach consideration about self employed income is as follows: *"The complexity arose whether part of the self-employed income should be treated as a remuneration of labour and whether the related taxes should be included in taxes on labour. The best compromise between economic rationale and data availability was to consider self-employment income to be income from capital: self-employed income is genuinely an entrepreneurial income, and the self-employed take the risk of incurring losses when exercising their activity. For some countries, this assumption does not reflect the situation of some of the self-employed, whose economic status or income does not signifcantly differ from those of wage earners. For instance in Italy, there is different application. The National Statistical Office provides official estimates of the percentages of 'mixed income' that can be attributed to labour and capital"* (European Commission, 2020, p. 265).

Table 1. GDP Rankings and Trend of Growth Rates in EU11 and EU15

Gross domestic product 2019 and GDP world rankings and reel GDP growth rates (avg.)				
	GDP (millions of US dollars)	Ranking	2008-2019 avg.	2010-2019 avg.
Bulgaria	$67.927	73	2,20	2,37
Croatia	$60.416	79	0,42	1,04
Czech Republic	$246.489	47	1,86	2,43
Estonia	$31.387	100	1,49	3,74
Hungary	$160.967	56	1,86	2,79
Latvia	$34.117	99	0,67	2,56
Lithuania	$54.219	83	1,95	3,56
Poland	$592.164	21	3,61	3,63
Romania	$250.077	46	2,91	3,11
Slovak Rep.	$105.422	61	2,50	2,99
Slovenia	$53.742	85	1,27	1,92
EU11 average	$150.630	…..	1,88	2,74
EU15 average	$1.114.909	…..	1,01	1,65

Source: Worldbank, World Development Indicators, GDP data source, 2020.
Growth data: Eurostat, real GDP growth rate 2020.

The top country in the world ranking among EU11 economies is Poland, which ranks 21st with a GDP of 592 billion dollars. Estonia, on the other hand, is the lowest EU11 economy in the world with a GDP level of 31 billion dollars and 100th place. While the average GDP of EU11 economies is 150 billion dollars, the average GDP of EU15 countries is 1.1 trillion dollars. This data shows that EU15 economies represent, on average, an economic volume approximately 7 times larger than the E11 economies. When the average growth data of the period 2008-2019 are examined, it is seen that while the average growth rate of EU11 economies is 1.88%, the growth rate in EU15 is 1.01%. To exclude the effects of the 2008 crisis, the average growth data for 2010-2019 are also used in Table 1. Economic growth in Estonia, Lithuania, Poland and Romania in the 2008-2019 period was above 3% on average and they were the fastest growing E11 countries. Lowest economic growth rate is at Croatia with the % 1,04. When evaluated in terms of country groups, the average growth of EU11 in the 2010-2019 period was above EU15. While the average growth for EU11 was 2.74%, the growth rate was 1.65% for EU15.

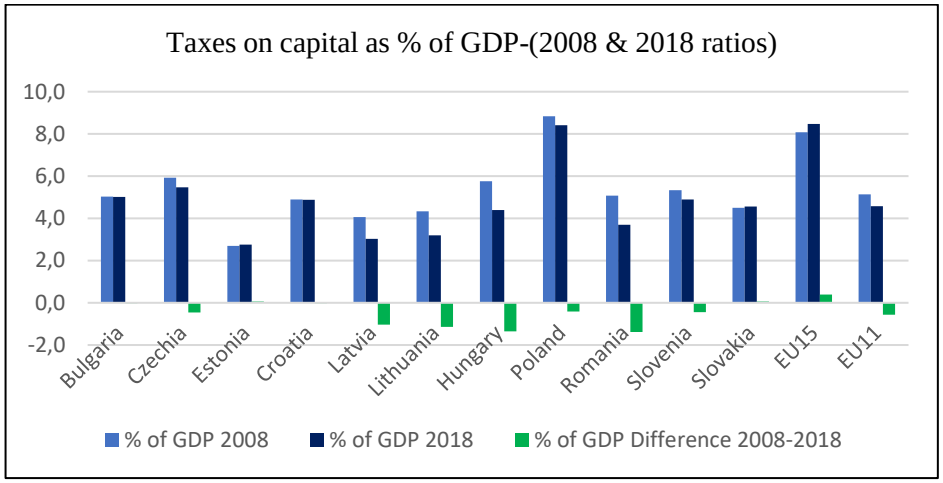
7. Statistical Analysis on Capital Taxation in EU11 and EU15

In this section, we will analysis the tax burden on capital by using different ratios for EU11 and EU15 countried for the period of 2008-2018. Capital taxation as % of GDP and % of total taxation in terms of basic indicator of taxation may give general opinion about tax burden on capital in EU11 and EU15.

7.1. Taxes on Capital in EU11 and EU15 as % of GDP

One of the important indicators that shows the tax burden on capital is taxes on capital as percentage of GDP. Graph 2 shows the taxes on capital as % of GDP for the years 2008, 2018 and difference from 2008 to 2018 for EU transition economies, EU15 countries.

Graph 2. Taxes on Capital as % of GDP-(2008 & 2018 data of EU15, EU11)



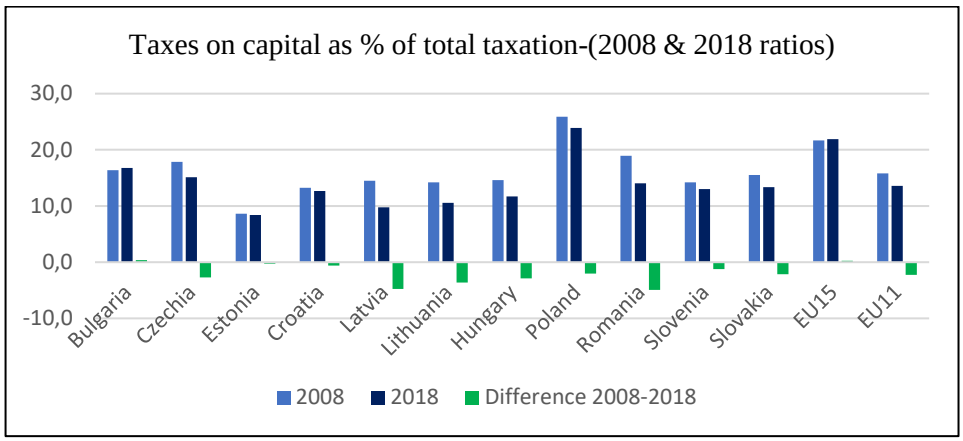
Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

For the EU11, taxes on capital to GDP ratio is % 4,57 in 2018 while 5,13 in 2008. Fort he last decade, we can recognise % 0,56 decrease on tax burden for capital. This ratio is higher in EU15 with the ratios: % 8,08 for 2008 and 8,48 in 2018. And the data shows that taxes on capital in EU15 has increased from 2008 to 2018 with the amount of % 0,40 increase while the same data has decreased for EU11. In addition, while the rate of taxes on capital to GDP decreased from 2008 to 2018 in 7 EU11 countries, this rate increased in only 4 countries. Graph 2 proves that the EU11 countries follow a tax policy to reduce the tax burden of capital compared to EU15 countries.

7.2. Taxes on Capital in EU11 and EU15 as % of Total Taxation

Graph 3 shows the share of taxes on capital in total taxes for EU15 and EU11 countries. Analysis with the ratios as percentage of total taxation may help to understand the burden on capital taxes in contrast to burden of other taxable sources into total taxation. Data shown on the Graph 3 is also represent the same period of 2008-2018.

Graph 3. Taxes on Capital as % of Total Taxation-(2008 & 2018 data of EU15, EU11)



Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

From 2008 to 2018, while the share of taxes on capital in total taxes decreased in 10 EU11 countries, it increased in only 1 country. In EU11 countries, taxes on capital as % of total taxation decreased from % 15.82 in 2008 to % 13.57 in 2018. The same rate has increased on average in EU15 countries, from % 21.65 in 2008 to % 21.88 in 2018. Taxes on capital as % of total taxation data also reveal similar results to the ratio of capital taxes to GDP for EU11 and EU15. In the period of 2008-2018, the share of capital taxation in total taxes is decreasing for EU11 while increasing for EU15. This reveals important signs for the EU11 that an approach to reduce the tax burden on capital is being taken.

8. Taxes on Capital in Terms of Sub-categories in EU11 and EU15

In this section, we will analysis the tax burden on capital by using different ratios for EU11 and EU15 countries for the period of 2008-2018. In addition to total taxes on capital, we will examine the taxes on capital in sub-categories. EU data enable to make more detailed analysis on capital taxation with provided capital taxation statistics on different economic sources and actors/parties into the categories: income of households, income of corporations, income of self-employed, stock of capital.

8.1. Taxes on Capital: Income of Households

The category of income of households is the least revenue collected source of capital taxation in country groups analysed in this research. But data of capital taxation in this category can be evidence and strengthen our argument about downward trend of taxation on capital. Table 2 shows capital taxation on income of households as % of GDP and % of total taxation.

Table 2. Taxes on Capital as % of GDP and % of Total Taxation: Income of Households

Taxes on capital - Income of households									
Taxes on capital as % of GDP - Inc. of households					Taxes on capital as % of total taxation - Inc. of households				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,24	0,40	0,15	20	**Bulgaria**	0,80	1,33	0,53	19
Czechia	0,08	0,11	0,03	26	**Czechia**	0,25	0,30	0,05	26
Estonia	0,19	0,14	-0,05	25	**Estonia**	0,59	0,42	-0,17	25
Croatia	0,30	0,75	0,45	12	**Croatia**	0,81	1,94	1,13	13
Latvia	0,00	0,40	0,40	21	**Latvia**	0,00	1,28	1,28	20
Lithuania	0,50	0,57	0,08	17	**Lithuania**	1,63	1,91	0,28	14
Hungary	0,43	0,56	0,13	18	**Hungary**	1,09	1,48	0,40	18
Poland	0,36	0,30	-0,06	23	**Poland**	1,04	0,85	-0,19	23
Romania	0,85	0,76	-0,09	11	**Romania**	3,16	2,89	-0,28	8
Slovenia	0,49	0,42	-0,07	19	**Slovenia**	1,31	1,13	-0,18	21
Slovakia	0,10	0,07	-0,03	27	**Slovakia**	0,33	0,20	-0,13	27
EU15	0,93	1,00	0,07	…..	**EU15**	2,53	2,56	0,03	…..
EU11	0,32	0,41	0,09	…..	**EU11**	1,00	1,25	0,25	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

In EU11, the rate is % 0,41 in 2018 while it was % 0,32 for 2018 as % of GDP. Similarly, there is an increase on capital taxes on income of households for EU15; it is % 1 in 2018 while it was % 0,93 in 2008. As % of total taxation, capital taxes on income of households also has upward trend from 2008 to 2018. For EU there is % 0,03 increase and for EU15 it rises % 0,25. Rate of increase fort he period 2008-2018 is in EU15 is higher than EU11. It can be said that, burden of capital taxation in both EU11 and EU15 has shifted on income of households from the other economic actors or sources even more in EU15.

8.2. Taxes on Capital: Income of Corporations

Corporations are the greatest source of taxes on capital. Highest revenue in capital taxation is collected from the income of corporations. In this respect, tax policy on corporations is one of the most important part of capital taxation policy. Table 3 shows the capital taxation on income of corporations for EU11 and EU15 for the period of 2008-2018.

Table 3. Taxes on Capital as % of GDP and % of Total Taxation: Income of Corporations

Taxes on capital - Income of corporations									
Taxes on capital as % of GDP - Inc. of corporations					Taxes on capital as % of total taxation - Inc. of corp.				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	3,18	2,33	-0,85	19	**Bulgaria**	10,35	7,78	-2,57	12
Czechia	4,02	3,50	-0,53	5	**Czechia**	12,13	9,68	-2,45	6
Estonia	1,60	1,99	0,39	24	**Estonia**	5,13	6,07	0,94	19
Croatia	2,90	2,28	-0,62	20	**Croatia**	7,87	5,91	-1,96	22
Latvia	2,98	1,06	-1,92	28	**Latvia**	10,65	3,40	-7,25	28
Lithuania	2,72	1,53	-1,19	26	**Lithuania**	8,88	5,06	-3,82	26
Hungary	2,55	1,34	-1,21	27	**Hungary**	6,47	3,57	-2,90	27
Poland	2,68	2,10	-0,59	22	**Poland**	7,86	5,95	-1,91	21
Romania	2,85	2,08	-0,77	23	**Romania**	10,66	7,93	-2,73	10
Slovenia	2,46	1,94	-0,53	25	**Slovenia**	6,56	5,15	-1,41	25
Slovakia	3,30	3,47	0,17	7	**Slovakia**	11,40	10,18	-1,21	5
EU15	3,07	3,13	0,05	…..	**EU15**	8,24	8,20	-0,04	…..
EU11	2,84	2,15	-0,70	…..	**EU11**	8,90	6,42	-2,48	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

According to Table 3, when the capital taxation data on corporate income are examined, it is seen that taxes on capital as % of GDP declined in 9 countries from 2008 to 2018 in EU11. As taxes on capital as % of total taxation, it is seen that this ratio decreased in 10 of E11 countries. Both data sets reveal that capital taxation on Income of corporations is in a clear downward trend in EU11. Average data reveal similar results. It is seen that taxes on capital as % of GDP in EU11 decreased by % 0.7 from 2008 to 2018. In the EU15, it is seen that taxes on capital as % of GDP increased by % 0.05 in the same period. Taxes on capital as % of total taxation has declined in both EU11 and EU15. However, for the EU11, the decline in taxes on capital as % of total taxation becomes clearer and a % 2.48 decrease is seen. This reveals that within the total taxes, the tax on capital has shifted over other economic resources.

8.3. Taxes on Capital: Stock of Capital

Stock of capital stands out as the category with the highest share in capital taxation after Income of corporations. It constitutes an important point for tax policy with its distortionary effects on capital accumulation and capital factor. Table 4 shows the capital taxation data in terms of stock of capital in EU11 and EU15.

Table 4. Taxes on Capital as % of GDP and % of Total Taxation: Stock of Capital

Taxes on capital - Stock of capital									
Taxes on capital as % of GDP - Stock of capital					Taxes on capital as % of total taxation - Stock of capital				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,87	1,52	0,65	15	**Bulgaria**	2,84	5,08	2,24	13
Czechia	0,73	0,77	0,04	25	**Czechia**	2,19	2,12	-0,07	26
Estonia	0,69	0,50	-0,19	28	**Estonia**	2,23	1,54	-0,69	28
Croatia	1,25	1,24	-0,01	20	**Croatia**	3,40	3,22	-0,18	19
Latvia	0,92	1,31	0,39	17	**Latvia**	3,30	4,24	0,94	17
Lithuania	0,66	0,52	-0,14	27	**Lithuania**	2,16	1,71	-0,44	27
Hungary	2,18	1,85	-0,33	11	**Hungary**	5,54	4,93	-0,60	14
Poland	1,69	1,89	0,19	10	**Poland**	4,97	5,36	0,39	12
Romania	0,97	0,74	-0,23	26	**Romania**	3,61	2,80	-0,80	23
Slovenia	0,86	1,07	0,20	23	**Slovenia**	2,30	2,84	0,54	22
Slovakia	0,79	0,92	0,13	24	**Slovakia**	2,72	2,69	-0,03	24
EU15	2,46	2,72	0,26	…..	**EU15**	6,64	7,00	0,36	…..
EU11	1,06	1,12	0,06	…..	**EU11**	3,20	3,32	0,12	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

According to Table 4, it is seen that the capital taxation of stock of capital increased in both EU11 and EU15 in the period of 2008-2018. However, the average data in this table can be misleading. Because in terms of stock of capital, taxes on capital as % of GDP in EU11 has decreased in 5 countries and taxes on capital as % of total taxation has decreased in 7 countries. The fact that the average data is positive, that is, the increase in capital taxation on stock of capital in EU11 is largely due to the Bulgarian data. Especially in terms of taxes on capital as % of total taxation, there is an increase of % 2.24 in Bulgaria, which causes the average data to be positive. In summary, excluding Bulgari, the tax burden on stock of capital decreases for EU11, both in terms of average burden and for individual countries. For the EU15, there is a very limited increase in both indicators in terms of % of GDP and % of total taxation.

8.4. Taxes on Capital: Income of Self-Employed

Income of self-employed is another small category with income of households in terms of capital taxation. In contrast to corporations and capital stock, share of income of self-employed as capital taxation is very limited. Table 5, shows the capital taxes on income of self employed in EU11 and EU15 for 2008-2018.

Table 5. Taxes on Capital as % of GDP and % of Total Taxation: Income of Self-Employed

Taxes on capital - Income of self-employed									
Taxes on capital as % of GDP - Inc. of self-employed					Taxes on capital as % of total taxation - Inc. of self-employed				
	2008	**2018**	**Difference 2008-2018**	**Ranking 2018**		**2008**	**2018**	**Difference 2008-2018**	**Ranking 2018**
Bulgaria	0,73	0,77	0,04	18	**Bulgaria**	2,39	2,57	0,19	16
Czechia	1,09	1,10	0,01	12	**Czechia**	3,29	3,04	-0,25	14
Estonia	0,22	0,12	-0,10	26	**Estonia**	0,70	0,36	-0,34	27
Croatia	0,44	0,61	0,17	20	**Croatia**	1,19	1,58	0,39	23
Latvia	0,15	0,26	0,11	25	**Latvia**	0,54	0,84	0,30	25
Lithuania	0,47	0,57	0,11	22	**Lithuania**	1,53	1,90	0,38	19
Hungary	0,59	0,65	0,06	19	**Hungary**	1,49	1,73	0,24	20
Poland	4,10	4,13	0,03	1	**Poland**	12,02	11,73	-0,29	1
Romania	0,41	0,11	-0,30	27	**Romania**	1,53	0,43	-1,10	26
Slovenia	1,51	1,46	-0,05	11	**Slovenia**	4,04	3,88	-0,15	11
Slovakia	0,31	0,09	-0,22	28	**Slovakia**	1,07	0,28	-0,79	28
EU15	1,62	1,63	0,01	…..	**EU15**	4,24	4,13	-0,11	…..
EU11	0,91	0,90	-0,01	…..	**EU11**	2,71	2,58	-0,13	…..

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

It is seen that from the Table 5, In EU11 taxes on capital - income of self-employed declined from 2008 to 2011 as both % of GDP and % of total taxation. For EU15, the same data increased as % of GDP, while it decreased as % of total taxation. In terms of income of self-employed, capital taxation shows more limited decline than other categories. Margin from 2008 to 2018 in EU as average burden all over the EU11 is only % 0,01. And similarly this data is only % 0,13 as % of total taxation. A decrease is observed in 4 EU11 countries as % of GDP and in 6 EU11 countries as % of total taxation. These data suggest that policies to promote capital are more limited in terms of Income of self-employed in EU11. According to Table 5, within the whole EU, Poland, which is an EU11 country, is the country with the highest tax burden in this category.

9. Summary Analysis of the Findings and Conclusions

Our analysis on capital taxation statistics partially proves that for the EU11, tax burden on capital has decreased in the period of 2008-2018. Also, there is relatively limited downward trend recognised for EU15. We summarized our findings on Table 6. All indicators on capital taxation that examined in our research are listed on Table 6 and trend of the burden on different indicators are also shown.

Table 6. Summary of Capital Taxation with All Indicators

Summary Table on Capital Taxation for Selected Indicators				
Indicator	2008 to 2018	2008 to 2018	2008 to 2018	2008 to 2018
	(increase)-EU11	(decrease)-EU11	EU11 avrg.	EU15 avrg.
Taxes on capital (% of GDP)	4 countries	7 countries	decrease	increase
Taxes on capital (% of total taxation)	1 country	10 countries	decrease	increase
Income of households (% of GDP)	6 countries	5 countries	increase	increase
Income of households (% of total taxation)	6 countries	5 countries	increase	increase
Income of corporations (% of GDP)	2 countries	9 countries	decrease	increase
Income of corporations (% of total taxation)	1 country	10 countries	decrease	decrease
Stock of capital (% of GDP)	6 countries	5 countries	increase	increase
Stock of capital (% of total taxation)	4 countries	7 countries	increase	increase
Income of self-employed (% of GDP)	6 countries	5 countries	decrease	increase
Income of self-employed (% of total taxation)	5 countries	6 countries	decrease	decrease

Source: Prepared by the author with the European Commission, DG Taxation and Customs Union, based on Eurostat data, 2020.

Note: First 2 columns show ow many countries in EU11 have decreasing/increasing trends of tax on capital for selected indicator. 3rd and 4rd columns show the trend as decrease/increase for the average data of EU11 and EU15.

Table 6 presents generally decreasing trend of capital taxation on capital consistent with our argument. Taxes on capital (% of GDP), taxes on capital (% of total taxation), capital taxes on income of corporations and capital taxes on stock of capital are indicators that have relatively higher downward trend in contrast to other indicators. Especially highest decrease is seen in the indicator of "capital taxes on corporation". In 9 of 11 EU11 countries, the capital taxes on income of corporations has decreased in the period of 2008-2018. For the average data, in 6 of 10 indicators have decreasing trend for EU11. That show, capital taxation in average level has decreased in EU11. Also, data on taxes on capital (% of GDP) and taxes on capital (% of total taxation) prove that result. For the

EU15, only 2 indicators have decreasing trend. So, in comparative analysis, it can be said that, taxes on capital in EU11 fell relatively more than EU15 for the period of 2008-2018. Except few variables, all these findings are consistent with our assumption that "capital can be taxed at a lower level in EU11 economies compared to EU15 countries for encouraging capital".

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