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EFFECTIVITY OF PROGRESSIVE TAXATION FROM THE MICRO- AND MACROECONOMIC PERSPECTIVE

Alena Zubaľová¹, Martin Geško², Michal Borza³

Abstract

Many empiric analyses on the topic of the progression exist and despite their often contradictory results governments still include their conclusions in to their tax policies. Many questions arise in relation to the issue: What is the theoretical justification of progressive taxation? What are the effects of the progression from the microeconomic and macroeconomic perspectives? Which conditions should be met in the real-world for progressive taxation to be effective?

The purpose of the article is to find the answers to these questions. We aim to identify a set of requirements that shall be observed if the efficiency of progressive taxation in real conditions is the goal. We conclude that the taxation as a built-in stabilizer have an impact on economic stability under certain conditions. We described the mechanism of how the taxation act in the counter-cyclic and pro-social way and we defined the factors which influence the efficiency of progressive taxation in the real economy.

Keywords

Personal Income Tax, Ability to Pay, Progressivity, Automatic Stabilizers, Fiscal Policy

I. Introduction

Rising income and property inequality is becoming (again) a priority economic and social problem of today. According to economic theory, in a society with a high rate of income inequality, it could be appropriate to introduce certain rate of progressivity income tax system. The introduction of progressivity can contribute to the redistribution of income, and thus to the reduction of overall inequality in society. A certain degree of progression is also appropriate if the government wants to deal with the negative regressive effects of other taxes, such as indirect taxes.

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From the historical perspective the progressive taxation was linked rather to the need of filling public budgets on the elementary principle of solidarity, than on the basis of comprehensive tax theories with the expected impacts on the economy.

Almost all existing taxes can operate as automatic stabilizers. They can be characterized as a built-in reaction of public revenues on economic fluctuations. The progressive taxation is considered to be one of the crucial automatic stabilizers of macroeconomic development in individual states.

The question is what the macroeconomic consequences of progressive taxation on the economy are, how the mechanism of impact on economic operators works and what factors influence their response. Our motivation for the elaboration of this paper was the interest in clarifying the mechanism of operation of progressive taxation in the conditions of the real economy.

II. Progression of Taxation as a Part of Automatic Stabilizers (the Macroeconomic Perspective) – Literature Review

Despite the fact that individual theories related to the automatic stabilizers have developed, in the economic theory and practice there is no a clear answer to the question of the impact of the progression in the form of automatic stabilizers on the mitigation of the fluctuations of economy cycle or economy efficiency. Theory provides “many” basic researches related to automatic stabilizers, the size of government and progressive taxation.

A very important research about the size of government and automatic stabilizers and their impact on the economy cycle can be attributed to the works of Galí (1994). In his work he points out the failure of standard Real Business Cycle models because they do not take in consideration negative correlations between the volatility of a product and the size of government, measured as a proportion of government spending on GDP or tax income of GDP. In the model higher income taxes are provided by the growth of the elasticity of job offer as the reaction of a product on technological shocks. In the neoclassic model of growth within monopolistic competition Moldovan (2010) represents an opinion that the higher tax progression has the impact on the net income of a taxpayer and therefore also on the consumption and the number of hours worked due to the change of wealth and substitution effect. It leads to the lower volatility of consumption, investments and therefore the whole product, too. On the other hand, the critics from the neoclassic school claim the flexible adaptation of aggregate demand by the means of tax can lead to the bigger economic growth from the short term perspective, but it does not apply from the long term perspective, when the operation of government in the long run leads to the lower efficiency of the allocation of sources in economy, what results in the stagnation and inflation. Rodrik (1998) in his work points out the potential of government endogeneity. He says that tax residents of economically more open countries which are naturally more open to external risks, more often choose bigger government to naturally protect the economy and its volatility. Fatás and Mihov (2001) follow up this incentive. On the example of the OECD countries they prove that the volatility of a product is more bound to the size of government. A similar attempt was realized based on the data from the USA. The authors were able to prove that the higher rate of income tax revenue is consistent to the lower rate

of the product volatility. When examining the time data of the size of government and the product volatility Debrun et al. (2008) also came to the conclusion that there is a negative relation between the size of government and the product volatility, while this relation is obvious in the 1990's when the monetary policy and the development of financial aggregates were intensively controlled. The above studies are in contrast with the research of Carmignanni et al. (2011). Based on the estimation of the system of simultaneous equations linked to the endogeneity of the size of government to the output volatility they found the directly proportional relation, i.e. a bigger government increases the product volatility. Baunsgaar and Symansky (2009) used the income elasticity approach (2009) in their research. It points out the fact that even though there is the relation of the elasticity of tax revenue from wage taxation in the form of the automatic stabilizer, this relation is quite stable. The work of Li and Sarte (2004) also confirms the fact that the increased rate of taxation progression of personal income does not have to result in the increase of public income from the tax imposed. This fact is proved on the example of tax reform of the USA from 1986, when the drop of the taxation of progression resulted in the rise of the share of the tax on public income. The work of Silgoner et al. (2011) is also interesting and challenging. It is about the non-linear effect of the government size on the product volatility.

The relation of the wage tax progression to the product stability is discussed in the work of Weller and Rao (2008). Their research dealt with the relation of wage taxation and economic stability from the short-term perspective as well as long-term perspective (the impact of the taxation progression on the income inequality and the product growth). The authors came to the conclusion that the taxation progression creates the space for government for counter-cyclic measures in the short-term as well as long-term period. However, the ability to collect taxes effectively is decisive within the progressive wage taxation. In case of the lower effectiveness of progressive income tax collection governments often resort to the increase of excise taxes, usually value added tax. According to the conclusions of the authors the increase of indirect taxes in combination with the progressive wage taxation reduces the positive effects of the progressive taxation within the cycle stabilisation, due to the movement of the short-term capital which violently reacts on the changes in excise taxes.

A special view on the efficiency of the progressive taxation in the form of an automatic stabilizer is provided by the study of Krajewski and Pilat (2017), which shows that the changes in the progression personal income tax rate actually have a little effect on the efficiency of passive fiscal policy. Personal income tax behaves as an automatic stabilizer not because of progressive tax rates but because of the sensitivity of the employment to GDP fluctuation. According to Auerbach and Feenberg (2000) the most important single source of automatic stabilization of aggregate demand is probably the reaction of the demand in response to the taxation, which is compensated up to 8% of initial GDP fluctuations, or less, in relation to the estimation of consumption response. However, in their opinion, especially the progressive income tax can help stabilize the production by the means of its impact on job offer. This effect can have a similar size than more traditional way by the means of the stabilization of the aggregate demand.

From the above summary of the researches, which is more or less critical, it is obvious that the existence and the size of built-in stabilizers influence the economy stability, but this relation is not clear and unambiguous. Despite of that we can also identify the common channels the automatic stabilizers use to influence the volatility of the product of economy. They are: the size and stability of public sector, the effect of elasticity of job offer by the means of tax distortion, government spending and income sensitive to the economy cycle. In our opinion, the reason for frequent contradictory results of empirical studies can be the acceptance of unrealistic assumptions of individual models as well as the disrespect to the specifics of single economies. We think that the efficiency of progressive taxation in a real environment is influenced by several factors. In case they are misunderstood it can lead to the reduction or complete elimination of the efficiency of the progressive taxation in the form of a built-in stabilizer. In our perspective, the first crucial question (factor) necessary for the understanding of progressive taxation applicability in the “real world” is the question of whether the progressive setting should relate to the whole tax system or to the personal income tax only. However, if we want to answer it, it is necessary to define the character of the relation between a taxpayer and the state in an axiomatic way.

III. Theoretical Basis of the Tax Burden Division – Microeconomic View

In this article we present the importance of the basic thesis from tax theory related to the existence and transfer of tax burden, which should be consider when monitoring the impact of the progression of personal income. The character of the tax system and also the method of the distribution of the tax burden among the residents of the given state stems from the economic substance of the basic relation between the public sector and a citizen. Regardless of the character of the state regime the state provides its residents the goods all the residents benefit or can benefit from, while the exact effect coming from the existence of these goods for a single resident cannot be exactly determined. Modern states are characteristic by the purposeful effort to provide the basic rights for all their citizens equally and for the elimination of the differences in opportunities to achieve personal benefit. The basic task of a state is the common (for each member of the society) provision of personal rights, freedoms and equal opportunities, which should bring an optimal development for individual citizens as well as the society as a whole. The state should also try to reduce the inequality of income and wealth (in the rate of perceived benefit and the ability to achieve the benefit in future), which were generated due to the failure in securing this basic task. It is provided by the means of provision of public goods which are necessary for the operation of the organized society and all citizens benefit from them. However, the size of the utility of individual taxpayers cannot be quantified. Government uses public revenue, especially taxes, to cover the costs for provision of public goods. It is essential that taxes restrict the utility level rate and the ability to achieve the utility from public goods of individual taxpayers as evenly as possible, i.e. that they do not place an excessive burden on the taxpayers based on the belonging to a social group, sex, the size of property, place of birth and so on. The equality of the distribution of tax burden is actually the expression of the requirement of the efficiency and justice of tax system. Such understanding of the distribution of tax burden among the members of the

society is obviously not new. In their argumentation the supporters of this approach refer to, for example, the work of English philosopher, Thomas Hobbes, who comments on the role of the state to provide the equality of tax payments apart from people equality in his work *Leviathan* (1651). This equality does not depend on the size of wealth but also on the size of debt each person owes to the public sector for their protection (Spiegel 2002). Hobbes's ideas should be understood in the context of the time in which they arose. In our opinion, the effort of Hobbes was the change of the distribution of tax burden in the society among its individual classes and therefore the achievement of higher efficiency and justice of taxation. A similar definition of the relation between the state and a citizen can be also found in the work of Smith (1776). The subjects of each state shall contribute to the government according to their abilities, i.e. proportionally to the income they enjoy under the protection of the state. This approach to the distribution of tax burden is the expression of the ability-to-pay principle. This principle understands the relationship between a citizen and the state in accordance with the theory of the social contract. Utilitarianist John Stuart Mill was one of the first people who recognized the importance of taxation for the state-citizen relationship (Makovicky and Smith, 2020). According to this principle the citizens of the country empower its government/public sector to provide certain public goods, they enjoy the benefits from it but they also have to contribute to the costs related to their provision according to their abilities. The issue of the exact determination of the "ability" to contribute of a taxpayer is a frequently mentioned problem, however. Several authors consider income, respectively net income to be the best indicator of this ability. According to Goode (1964) is the net income an indicator of the capacity of a person to use economic sources and seems to be a good indicator of the ability of a person to contribute to the public sector. Due to the rational effort of taxpayers to minimize their tax burden the ability of a state to tax net income is actually partially restricted. Exclusive taxation of income (i.e. income as a unique base for taxation) would lead to excessive deadweight loss. In our opinion, the ability of a taxpayer to bear the tax burden can be nowadays measured only by the taxpayer's financial capacity, i.e. existing or potentially achievable money supply. The public sector is managed in a monetary way and the relations between the private and public sectors are monetary as well. Therefore the scale of taxpayer's ability to contribute will be their financial capacity, i.e. financial means which they have or might have at their disposal. Other constituents of the economic capacity of a taxpayer, i.e. other possibilities to contribute the public sector, were left behind due to various social-technical reasons in the past (public works and so on). We cannot agree with the approach of some economists dealing with the optimal taxation (e.g. Holmes 2001, Kaplow 2006) who explain the term of ability to bear tax including various personal characteristics such as physical and mental capacity, life expectancy, level of education, health and so on. Several indicators of financial capacity, i.e. tax basis, evolved in the past aimed at capturing the whole financial capacity of a taxpayer. They are mainly income, wealth, and the act of purchase (inaccurately referred to as consumption) when a person shows the existence of financial capacity. The public sector tries to "use" every situation when a taxpayer shows somehow the disposal of economic, or rather financial capacity.

Therefore the taxation and any of these basis used nowadays ultimately always influences their financial capacity. The existence and the size of the financial capacity of a taxpayer is determined the way which is the best technically manageable and also the least politically “costly”. Taxes are collected where the existence of financial, contribution capacity of a citizen is best identified.

The mentioned arguments can be summarized so that each taxpayer is obliged to contribute based on his financial capacity, while the state tries to distribute the tax burden among taxpayers so that it restricts their utility level and the ability to achieve the utility as little as possible. It would also contribute to the reduction of inequality in income and wealth which were generated as a result of the failures of the state within the provision of its basic task.

IV. Theoretical Arguments Advocating Progressive Taxation

According to the above analysis the financial capacity of a taxpayer should be the base for the taxation and lead rather to the implementation of the progression into the whole tax system. In the past, the majority of the theories also lead to the justification of the progression of the whole tax system. For example, according to Seligman (1893) the theories advocating the necessity of the progressive taxation can be divided into 3 basic groups: redistribution theory, compensatory and economic theories. The redistribution theory is the first of them (also referred to as socialist). It says that progressive taxation is an inevitable part of human society development. The main supporter of this justification mentioned by Seligman (1893) is the German economists Adolf Wagner who considers progressive taxation to be the mean for fairer, respectively more equal distribution of the wealth within the society. The second theory advocating the necessity of progressive taxation is so called general compensatory theory. According to this theory, the progressive taxation is necessary as the compensation of failures, respectively deliberate actions of the public sector which lead to the excessive accumulation of wealth. American president and economist Walker (1888) was one of the supporters of the above approach. He admits the progressive taxation as the compensation for the failures of the state in protection of rights and property (i.e. against such unethical behaviour which leads to the accumulation of the wealth on the one hand and poverty on the other hand), respectively as the compensation of unequal distribution of the wealth in the society due to the state’s deliberate measures (tolls, business contracts, embargoes, wars). The issue of the progression of taxation is actually related to vertical justice. It is linked to equal sacrifice theories, which represent the third group of the theories advocating the justification of progressive taxation. The vertical justice talks about the obligation of the subjects with higher payment ability to pay higher taxes. The sacrifice theories approach the issue of the vertical tax justice by the means of the generalization of the equality principle, i.e. the tax burden should be distributed among taxpayers so that they all make the same sacrifice in the form of paid tax. Most of the theoretical movements agree to this point. However, at this point, a philosophical issue appears, whether the nominal quantity of paid tax or percentage tax rate is considered to be higher tax, i.e. the share of paid tax to a certain quantity – tax base. In the opinion of a group of economists the whole tax burden, respectively the tax system

should be progressive. They are mainly the supporters of Keynesian movement. According to Dillard (2005) Keynes advocates progressive taxation as one of the important tools for the mitigation of unemployment. The whole tax system must be progressive in order to achieve effective results.

The mentioned approaches create the back up for the progression of the tax system as a whole, what can be achieved by several combinations and settings of individual taxes within the tax system in real life. Another form of the compensatory theory is so-called special compensatory theory, which, on the contrary, is directed to the progressive income taxation and it considers it to be the compensation of the regressive character of indirect taxes. Indirect taxes, respectively consumption taxes tend to have an impact on poorer members of the society to a greater extent. The progression of taxation has to equalize the regressive character of indirect taxes and therefore to contribute to the balance of the tax system as a whole.

On the contrary, the supporters of a more liberal view on the economic environment refuse progressive taxation as an interference with the freedom of a man with no objective economic justification. According to Hayek (1960) the only reason for the implementation of the progression of total taxation is the social need to change the distribution of income, while it is not based on any scientific argument, but it can be recognized as a political postulate only, i.e. the effort for the redistribution of income and wealth based on a majority decision. Hayek emphasized that it is not good when all taxes are considered altogether. He claimed that the only valid argument for the acceptance of progression is the special compensatory theory. It means that he admits only the progression of the personal income tax in order to compensate the trend of many indirect taxes to place a relatively heavier burden on the group of taxpayers with lower income.

It is interesting that despite all the arguments in favour of the progression of the whole tax system, the special compensatory theory and progressive taxation of personal income prevails in the practical tax policy. For the direction of the further research and more objective assessment of the results of tax policy it is necessary to define the mechanism of counter-cyclic and pro-social effect of this taxation (with the regard to the basic tasks of the state) and it is also necessary to define the factors which influence the efficiency of the progressive taxation of income in relation to the achievement of the mentioned aims.

V. Conditions of the Efficiency of Progressive Taxation of Personal Income

The method of the operation of automatic stabilizers is quite simple. The income of the society grows altogether with the growth of the economy. It represents the aggregated income of individuals. Altogether with the growth of income (and employment), the demand for the transfers from the side of state budget decreases. In the system of progressive taxation in case of exceeding the defined income limit, the increased tax rate is applied to the exceeded part of income. It causes the situation when a taxpayer gets less (lower net income from the given unit) from each other additionally earned financial unit than if the initial tax rate was applied. Due to the lower rate of taxpayer's net income rate the aggregated consumption and investments within the economy grows at a slower rate than the rate of the whole economy.

Although the model of the counter-cyclic operation of automatic stabilizers is quite simple, it is actually built on assumptions that do not always apply. The fact that real conditions in individual economies are not included, can cause very different, respectively contradictory results of individual researches which were implied in the literature overview.

The basic condition of the efficiency of the progressive income taxation in the economic models is the fact that the growth of the economy is automatically translated into the adequately increased income of taxpayers-natural persons. In our opinion, there are factors which violate the mechanism of the transfer of the GDP growth into the taxable income of natural persons.

These factors can be divided into two groups:

1. Character of the Corporate Sector in the Economy

Share of legal entities and self-employed persons on the primary distribution of income from the productive economic activity within the given economy. The production activity of corporate sectors plays an important role within the primary distribution of income in the economy. The growth of the economy is connected to the higher economic activity of companies. It results in higher yield and subsequently higher economic results (profit) of companies. The progressive taxation of income directly influences only self-employed people who actually form only a small part of the primary distribution. From the perspective of taxation, the higher profit of a legal person does not have to mean the higher taxable income of a natural person. The income is transferred from the corporate level to the individual one primarily by the means of dividends and wages. The increased profit of companies can be observed in delay and different rates in higher dividends and wages.

In the case of dividends, the rate of the foreign property of the corporations in the given economy and the rate of investment activities play an important role. The transmission of the higher profit to wages is influenced by several factors, such as the size and economic structure of the given economy, its institutional maturity, the ownership structure of a company, management method, the phase of the life cycle of a company, and so on.

For example, the Slovak Republic is considered to be the profit-led economy (Zeman 2018) since it is a small open economy with a significant share of foreign companies. It means that the economic growth of the society in the Slovak Republic is demonstrated primarily by the growth of the profit of legal entities and only to a smaller extent by the growth of wages. This can be observed for example when monitoring the development of the growth of the corporate sector revenue rate and the average wages in the Slovak Republic.

Table 1: Comparison of Annual Increase of Wages and Corporate Sector Revenue in the Slovak Republic

Annual increase	2014	2015	2016	2017	2018
Wages	1%	3%	3%	4%	6%
Corporate revenues	5%	11%	3%	7%	8%

Source: the authors based on the data of the Statistical Office of the Slovak Republic and *finstat.sk*

2. Efficiency of Public Sector, Tax System and Tax Collection Respectively

This factor includes the rate of reporting real profits by the legal entities, self-employed persons as well as the rate of unofficial payments of wages in the form of so-called envelope wages (Horodnic 2016). As Torregrosa (2015) states frequent attempts to avoid tax obligations and tax evasions in non-wage earnings (self-employed persons) seriously influenced Spanish tax on personal income during the first years of its effect, which reduced the income as well as the redistribution effects of taxes.

At the level of legal entities, they are mainly the factors influencing the effective rate of this tax (e.g. private consumption claimed as a business expense of the corporation), i.e. the factors influencing the really allocated amount of profit of the national legal entities and the rate of the dividends paid by them.

We think that the achievement of required social and economic aims exclusively by the means of the progressive income taxation is only possible in economy, if its tax system is able to cover all taxable incomes of natural persons, national natural persons own the majority of legal entities, while they declare the real profit of the legal entities.

The higher profit of legal entities also demonstrates in the paid dividends and higher wages, while the quality of institutions and the attitudes of taxpayers in the given economy significantly exclude the existence of the shadow economy and non-taxable income. The existence of this economy is questionable.

VI. Conclusion

In this article we critically assessed the basic approaches to the justification of the existence of the progression of the tax system and specifically the progression of income taxation. The requirement for the equal distribution of tax burden, the requirement for the mitigation of the consequences of the unequal access to opportunities and the approach based on the theory of the equal sacrifice rather lead to the progression of the tax system as a whole. In our opinion, it would be good to leave only the internal progression within the income taxation due to the use of the concept of the taxation of so-called net income (i.e. using the non-taxable part of the tax base) and achieve the higher progression of the tax system setting the different rates of excise taxes (using the change of preferences in the consumption with growing income) and the change of the approach to identification and the determination of the tax base in case of property taxes. The question for further research is the way how to set the individual taxes within the tax system so that they respect the requirement of the efficiency and justice of the tax system and at least partially eliminate the differences in the excessive concentration of the income and wealth of taxpayers.

The progressive taxation of personal income is considered to be a counter-cyclic and automatically operating tool of economic policy. Economic research papers usually assume that the rising economy will automatically be reflected in individual incomes. We say otherwise and explore the conditions which shall be reflected while analysing the effects of progressive taxation in the real economy. In our opinion, it is necessary to fulfil several conditions in order to make it operate effectively in real conditions. These factors can be divided into two groups.

1. The Character of Corporate Sector in the Economy;
2. The Efficiency of Public Sector and its Tax System, respectively Tax Collection.

These factors shall be analysed further in order to be able to assess and predict the effects of progressive taxation in particular economies.

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