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The Fiscal Sustainability of the Visegrad Group Countries
The Aspect of Government Debt

Theses of doctoral dissertation

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1. Introduction and motivation

The discipline of fiscal sustainability is originated from the economics of sustainability, which is based on the ecological, environment - and resource economics. The analysis of the fiscal sustainability topic became prevalent in the 1980s but Domar (1944) had previously stated that the necessary condition of sustainability is the avoidance of increasing deficit. The government debt of the USA reached 33% of the GDP in 1980 and doubled this value in 1995. This rapid rise called the attention of economists to the question of measuring fiscal sustainability. What is the reason and what will be the effect of it? The researches examining fiscal sustainability has been focusing not only on the extent of government debt by now but on its structure as well. As the Argentinian or the Russian crises revealed, a country may go bankrupt with low level of government debt.

To understand the phenomenon and the processes of the government debt it is necessary to put the role of the state into historical context. In the thesis I review carefully the changes in the role of the state, the history of government debt and the literature about fiscal sustainability. The fiscal policy of a country is considered to be sustainable if its continuation in its current status will ensure the solvency of the country in the future. According to the literature dealing with the topic and performing empirical researches it can be accomplished if the debt-to-GDP is steady in long-term.

When examining the sustainability of the government debt we may think of countries such as the USA or Japan where the level of government debt significantly exceeds the limits that are considered to be sustainable government debt level by the literature. These countries have specific economic history background and world economy role, so it is possible to determine the compliance with the criteria of the fiscal sustainability or the aspiration to reach it. To the empirical research of the topic it is rather worth choosing countries where the fiscal policy has to work in a less unique situation.

I chose the Visegrad Countries for the research subjects of the thesis as it is a properly circumscribed, homogeneous country group that is handled as a whole in the literature. It was named Visegrad Countries after the location of the Visegrad Group that was signed on 15th of February 1991 in Visegrad. The location can relate to a symbolic, meaningful event in the history of countries, as in November 1335 in the Visegrad Royal Palace there was a meeting initiated by Charles Robert Hungarian king with the participation of Casimir III the Great Polish king and John of Bohemia Czech king, and the meeting in 1991 and the cooperation agreement can be considered as the revival of the tradition.

In certain researches it occurs that the economic status and foundations of the Czech Republic differ from that of the other Visegrad Countries and the Czech economic policy looks for new possibilities. The Czech Republic signed a trilateral cooperation statement (Slavkovi-statement) in January 2015 with the federal chancellor of Austria and the prime minister of Slovakia, with which they aim to strengthen the relationship among the three countries and to facilitate economic growth and the increase of employment level. It is not the target of the cooperation to cancel the Visegrad Group (OSW 2015). Poland may have been left out from the contracting parties due to its anti-Russian-friendly politics while Hungary due to ideological differences (special taxes on Austrian companies and banks) (Új Szó newspaper 2015).

In order to provide full picture, the fiscal policy of each country will be described from the change of regime of that country. The economic policy of the group of countries was hugely affected by the change of regime and its subsequent transition period, furthermore the specific institutional system of the gradually changing central and Eastern European capitalism, which means the model introduced by Farkas (2017), still influences the present one.

The research is based on the theoretical and historical traditions of the state and looks for explanation for how the sustainability of the public finances has been formed in the Visegrad Countries from the change of regime to present days, furthermore how this process can be evaluated based on the already calculated indicators that measure fiscal sustainability.

2. Objectives of the research and the theoretical background

The purpose of the PhD thesis is to compare the applicability options of the indicators and models measuring fiscal sustainability (seizing the similarities and differences among each model) in order that I can answer my research question, which wants to explore if the fiscal policy of the Visegrad Countries has been sustainable since the change of regime.

Sustainability and sustainable development are difficult to be defined as they can be broadly interpreted. In 1983 the World Commission on Environment and Development defined them in its final report as ‘sustainable development is a development that is able to meet the necessities of the present without jeopardizing the possibility of the future generations to meet theirs’ (Szlávik 2005 p. 24.). The definition of the National Council for Sustainable Development Office is slightly more detailed: ‘Sustainable development aims to promote the mankind’s happy and meaningful lifestyle and to accomplish public welfare. In order to reach it the generations that creates its own welfare does not consume, deplete its resources but preserves, expand it for the next generations in proper quantity and quality’ (NFFT, 2017).

Hamilton and Flavin (1986) were among the first ones to define fiscal sustainability, the budget can be considered sustainable, if the present value of government budget is in balance. According to Blanchard et al. (1990) the fiscal policy may be defined as a kind of politics, in which the debt-to-GNP finally converges to the initial value, while the temporary increase of the rate indicates unsustainable politics. During the years everybody was making efforts to improve and modify the definition.

According to the European Commission it shall be interpreted, not just in the present but in the future continuously as well, that while carrying on the present politics without any adjustments and operating the public expenditures and the tax system, the increase of the debt shall not exceed the specific part of the GDP (which means that the debt-to-GDP shall not increase). According to the Stability and Growth Pact the threshold value of fiscal sustainability in the euro zone shall be the 60% of debt-to-GDP (EC 2006).

The responsibility position of an economic unit is sustainable, if it meets the present value budget line¹ without any major adjustments in the balance of incomes and expenditures due to financing expenditures (IMF 2002). The fiscal sustainability intends to explore if the government is able to carry on the budget politics without jeopardizing solvency (Croce – Juan-Ramón 2003). According to Ábel and Kóbor (2011) the economic policy is sustainable if it is applicable in the same format forever and this case the debt-to-GDP remains stable. We have returned to Buiters's (1985) and Blanchard's (1990) thoughts, which say that the fiscal policy is sustainable if the ratio of government debt is stable in long-term.

The researches of international organizations dealing with budget sustainability have become prevalent since the 2008 crisis. Budget sustainability usually means that the current fiscal policy can be financed, and it shall not lead to excessive indebtedness. The time horizon of the researches can be short, middle or even long term, depending on the purposes of the statements (Hegedűs 2010).

The fiscal sustainability increases the intergeneration awareness, improves the formal and informal institutional quality and provides more favourable fiscal scope for action and economic growth. The fiscal sustainability also affects the expenses of consolidations, structural reforms and fiscal adjustments (Kovács 2015).

¹The concept budget line derives from microeconomics and defines that the expenditures of households shall not exceed their money resources. This concept can be applied for other organizations, institutions and for the government (Kornai 2000).

The change of deficit defines the development of government debt and through this the development of fiscal sustainability. In connection with deficit we need to mention the phenomenon of deficit bias, which means that the government allows (tolerates) the increase of deficit and the level of government debt (IFAC 2012). The explanation for deficit bias can be the lack of motivations and hindrances. The excessive consumption arising from the collective feature of public welfare and the heterogeneity of voters belong to the former ones. The lack of transparent operation, information asymmetry and the voters' deficit tolerance can be listed to the latter ones.

Pápa and Valetinyi (2008) call the attention for three features of budget sustainability. Firstly, the theories set very weak conditions for the fiscal policy. Secondly, the current sustainability will be finally confirmed by future processes, so Wyplosz's (2007) statement that the sustainability of fiscal policy cannot be interpreted in the strict sense, is true. Thirdly, the fiscal policy is always sustainable as practically it is never interrupted, it is only adjusted if it does not seem to be sustainable. The adjustment can be performed by the state or the market, the latter one typically causes financial crises. Based on these features a practical fiscal sustainability definition was established, which says that if the state remains solvent when carrying on the current, unchanged fiscal policy in the future, the fiscal policy is sustainable. The GDP-proportionate primary balance level was applied to measure this.

By ensuring fiscal sustainability and transparency, debt crises may be avoided. It is necessary to establish prediction systems, in which institutional tools²with wider range of functions are applied. The features of the system, the relationship of the government with the main participants of private crediting supply side and the international organization, significantly influence the possibility and method of strengthening the institutional background (i.e. democratic traditions, the type of the parliamentary system, the power of parties) (Török 2011).

The fiscal rule is 'a continuously applied barrier or constraint against forming the fiscal policy, which was defined in broad terms for some aggregate of the fiscal performance' (Benczes – Kutasi 2010, p. 123.). To put it simple, fiscal rules are constant, nominal specifications, which refer to the whole or a part of the public finances (Baksay – P. Kiss 2009, P. Kiss 2012). The fiscal rules promote the macroeconomic stability, the credibility of government and its actions, the long-term sustainability of the fiscal policy and the

² The formal exercise of right or the right of veto are examples for this (Kopits, 2009).

minimalizing of negative externalities (Kennedy – Robbins 2001). The fiscal rules cover the factors that have effect on fiscal decisions, but not the external ones (Ódor – P. Kiss 2011). They are mostly put in four categories: debt rule, balance rule, expenditure (side) rule and income (side) rule (Berta – Tóth 2017).

We can perform the evaluation of the set of rules operation based on the criterion system of Kopits and Symansky (1998). Eight sorts of criteria are defined vis-à-vis each rule: compliance, resiliency, composition, transparency, consistency, simplicity, the ability to be constrained and efficiency. These criteria can come up against each other, therefore there is no one ‘good way’ to apply them, so it is important to apply rules that are adjusted to the features of the countries (Kopits 2007).

When examining the compliance with fiscal rules with econometric methods Nerlich and Reuter (2013) and Cordes et al. (2015) laid down that the compliance with expenditure and debt rules were mostly successful, while the compliance ratio of balance rules significantly lags behind. Debrun et al. (2008) carried on a research about the efficiency of the set of rules. Statistically significant, robust and causal connection was confirmed between the fiscal rule index defined by them and the cyclically adjusted primary balance for the twenty-five EU member state in the period of 1990-2005. Ayuso-i-Casals et al. (2009), Afonso and Hauptmeier (2009) and Heinemann et al. (2016) also came to similar conclusions, which means that the budgetary discipline can be strengthen by fiscal rules and these are able to increase the efficiency and durability of the adjustment. When examining the relationship between the budgetary rules and the budgetary discipline Tóth (2017) laid down that in the period of prosperity the national rules strengthen the budgetary discipline and from the efficiency of the rules side the stable legal background, the properly defined target system, the alert mechanism, the control body and the public discussion about the operation of the rules are also important.

It is necessary to establish long-term legal, institutional framework and guarantees for the sustainable and transparent fiscal policy (Balcerowicz 2010). Institutional reforms should be implemented that are able to limit the increase of public expenditures, budgetary deficit and the government debt into pre-specified barriers (Kopits 2009). The established institution should fulfil the following functions (Age 2010):

1. Impact assessment: the analysis of political decisions that have effect on the budget on long-term, e.g. changes in the pension scheme.

2. Consistency research: the analysis of government role with emphasis on the fiscal policy, determined action against populist economic policy ideas and practices.
3. Transparency: determined support of fiscal decisions and their consequences and communication in order to preserve transparency.

The institutional ‘anchor’-role can be played by the ‘hard’ institutions because they are able to operate without political influence, independently of the political-legislative cycle (Benczes – Kutasi 2010). When observing economic history one can realise that the establishment of independent institutions that supervise fiscal policy is primarily supported by the opposition political parties. When they come to power, they reduce the independency of the established institutions or even eliminate those institutions because they feel their position threatened (Calmfors et al. 2010). There are simpler regulators that can act as institutional anchor, e.g. real debt rule or the spending limit rule. These regulators support fiscal transparency in the case of independent institutions, too (Török 2011).

As there is no developed ‘best practice’ to establish and operate them, the budgetary councils operating in the EU member states were integrated to the country specific institutional culture and sought to adapt to it. Mostly advisory-type, analyst, forecaster tasks that do not involve indirect responsibility are delegated to them, which can be complemented with comment right. Their transparency can be strengthened by their connection to the audit office or the parliament (Kovács 2016a).

The mere existence of budgetary councils does not have effect on the fiscal performance. The effective budgetary councils are able to affect the budgetary performance by preparing more precise and less prejudiced forecasts. This case the efficiency means the independency of politics, the preparation and support of budgetary forecasts, the presence at public debates and the explicit supervisory role of fiscal rules. The budgetary councils promote the stricter budgetary discipline by promoting fiscal transparency and public productive budgetary debates (Debrun – Kinda 2014).

Further researches revealed that the budgetary councils improve the community understanding of fiscal policy and motivates the voters and the decision makers to vote for a competent government. Furthermore, irrespectively of the competency of governments they are able to contribute to decrease the deficit (Beetsma – Debrun 2016). They are able to reduce the information asymmetry between the credit organizations and the indebted countries government (Debrun 2011).

All in all, in order to answer my research question, the concepts relating to fiscal sustainability and the possibility of its measurement are overviewed in the thesis, so based on these, hypotheses that can be based on theory and experience as well can be drawn up.

3. The structure of the dissertation, the hypotheses and the research methods

The dissertation consists of three main parts, which complement each other well. The first part contains the theoretical and economic historical approach of the theme. This is followed by case studies on subjects in the study. The third part contains methodological description and test results of econometric models.

Concerning the research question, I found it important to present the state intervention and the change of task as fiscal sustainability relates to the financing of state responsibilities. In the first chapter of the PhD thesis the historical antecedents, the basic conceptions and concepts will be presented. In the section 1.1 at historical antecedents the role of the state had key priority as the issue of fiscal policy and fiscal sustainability start here. After this the sections 1.2, 1.3 and 1.4 will follow, in which you can find the explanation of concepts that are closely related to the topic, such as budget, public finances, budget deficit, government debt and indicators of balance of public finances and its status. The section 1.5 is about the concept of fiscal sustainability and the related institutional system. I will present the elements of the fiscal framework, the budgetary rules and the role of the independent fiscal institutions in detail as well.

In the second chapter I will detail the cardinal events of the economic policy of Visegrad Countries that are important for fiscal sustainability and introduce their fiscal framework. The chapter presents the details of budget deficit and government debt from the change of regime to the present days by using different reports of each country. The thesis tries to analyse the countries objectively, so disregards the analysis of political aspects.

In the third chapter I overview the theories and the literature relating to the empirical research methods in the field of fiscal sustainability topic. After introducing the macroeconomic background (section 3.1) various indicators (section 3.2) and measuring models follow. In section 3.4 describe the econometric procedures I used during the applied measures and in section 3.5 I introduce the used models as well.

In the last chapter I summarize the empirical research results performed based on the methodology described in detail in the third chapter. I performed the researches involving a

control group, which was the group of countries named in abbreviated form GIPS that stands for the first letters of Greek, Italy, Portugal and Spain in the literature.

The thesis is finished with a summary, in which in addition to the answers to the hypotheses and the questions to be answered in the future I describe my suggestions regarding the fiscal sustainability of the countries.

Concerning the research question, I drew up a hypothesis that can be answered based on the theoretical chapters and two ones that can be proved empirically in connection with the fiscal policy of the Visegrad Countries. It is important for the measuring that the hypotheses become more consolidated, transparent and easy to answer based on the models.

Hypothesis 1.: After the debt crisis in the European Union a tightening of the government debt rules could be observed in the Visegrad Countries.

Hypothesis 2.: The government debt of the Visegrad Countries is influenced by the real interest rate, the real effective rate and the inflation, on which the fiscal policy does not have indirect effect.

Hypothesis 3.: The fiscal policy of the Visegrad Countries was not directed by the requirement to meet short-term sustainability.

Several indicators can be applied to measure fiscal sustainability but before looking at these indicators, it is necessary to map the theoretical background as well, therefore my first hypothesis relates to this. This hypothesis can be answered by getting to know the economic policy of the countries (chapter 2.).

Several factors have effect on the development of the government debt, the mapping of these is inevitable for a fiscal sustainability study, this case for the PhD thesis, therefore my second hypothesis focuses on these factors, in particular the connection of the factors and the fiscal policy. Section 3.2 includes the theoretical background, while section 4.2 includes the result of the research carried out with different indicators, with the help of the one-step dynamic panel regression.

Finally, the calculation of indicators, the one-step dynamic panel regression and the result of the research based on the Hackman-selection model that are connected to the possibly most important hypothesis from the point of view of the PhD thesis can be read in the section 4.3. In connection with the hypotheses 2. and 3. I examined the connection between the income and

expenditure side of the public finances, the result of the examination proved by fix-effect and OLS-regression is detailed in the section 4.1.

The empirical researches about measuring fiscal sustainability divides the measuring possibilities relating to three periods, which are called short, middle and long-term. There are different measuring methods for the different periods. The longer the available timeline is the greater the possibility is for measuring the middle and long-term fiscal sustainability. As the available data raise the possibility for short and partly middle-term analysis, I can draw up a verifiable statement concerning only the previous one.

In the PhD thesis I consider Samuelson's descriptivist theory as governing, which says that the theories involve only the better or worse analytical description of the observable phenomenon but not the explanation. I certainly make efforts to provide explanation too but forecasting and developing a theory are not the purposes of this thesis.

4. Main results

The topic of the PhD thesis is the analysis of the fiscal sustainability. My research question wants to explore if the fiscal policy of the Visegrad Countries has been sustainable since the change of regime.

In order to answer the research question, it was necessary to clarify the concepts of economic policy, fiscal policy, fiscal sustainability, government debt and budget deficit and their relationship with the related different, measurable indicators. In the chapter of conceptions, conceptual and historical antecedents, the independent fiscal institutions that are closely related to the fiscal sustainability were introduced.

In the theoretical overview of the applied analytical methods the studies performing empirical researches of the earlier literature were introduced, by highlighting some studies (that are relevant for the empirical research) and the methods applied by them. My PhD thesis contributed to the existing literature with the synthesis of theories about fiscal sustainability and their empirical verification. Based on the literature the hypotheses described in the introduction were drawn up and answered based on the empirical results regarding the fiscal sustainability of the Visegrad Countries. The hypothesis 1. proved to be true, so according to this the first thesis can be drawn up.

1. Thesis: After the debt crisis in the European Union a tightening of the government debt rules were observed in the Visegrad Countries.

Based on the overview of the economic policy and fiscal framework of the countries it can be laid down that the rule concerning the measure of government debt was already created in 1997 in Poland, the rule concerning municipalities was introduced in 1996 in Hungary, in 2002 in Slovakia, these were followed by the rules about debt limit (from 2007 in Hungary, from 2014 in Slovakia). In the case of the Czech Republic the fiscal rules were converted to law almost ten years after the crisis started in 2008, so it cannot be stated in this case either that the 2008 crisis triggered to start the process. Apart from the EU debt crisis, their special situation regarding economic policy and their commitment to fiscal sustainability also had an important role in the above mentioned process.

I used not only the results of theoretical but empirical researches and econometric models as well to verify further two hypotheses. As a result of researches for the different periods we can lay down that the government debt from the previous years, the level of budget deficit, the real interest rate, the real effective rate, the economic growth, the inflation, the current account balance deficit and the employment rate also have effect on the government debt of the Visegrad Countries. The fiscal policy is able to affect directly only the income and the expenditure side. Mostly the real interest rate, the real effective rate and the level of inflation can have spill-over effect on the listed factors and can reach change indirectly and slightly. If the government debt is affected by factors, on which the fiscal policy does not have indirect effect, then it can be concluded that the fiscal sustainability is or is not achieved not only by inner, including fiscal policy effects, but it is affected by external phenomenon that are independent of the national economic policy such as economic openness due to exchange rate exposure, on which development the national economic policy cannot have effect directly but can optimize it by changing the structure of the government debt. As an example, I would highlight the program targeting the decrease in accomplished self-financing and foreign exchange exposure in the case of domestic government debt. Joining to the eurozone, where the total debt earlier expressed in euro and foreign exchange becomes homogeneous, can lead to the same result (e.g. Slovakia). On this basis I reached the conclusion described in the second thesis.

2. Thesis: The government debt of the Visegrad Countries is influenced by the real interest rate, the real effective rate and the inflation, on which the fiscal policy cannot have indirect effect.

Based on the indicators analysing the fiscal sustainability, the third hypothesis proved to be true, the primary budgetary gap showed unsustainability only in the case of some years. As a result of the research it can be laid down that the third hypothesis is verified, if we use

indicators searching in short-term, as in most cases these did not show that the fiscal policy would be unsustainable. If I examined the data series with middle-term indicators, the fiscal policies of the Visegrad Countries proved to be unsustainable. Based on the results I drew up my third thesis.

3. Thesis: The fiscal policy of the Visegrad Countries was not unsustainable from the change of regime to present days.

Based on the overview of the literature and the results of the researches, several statements that were examined previously and considered as fact become questionable. Is it possible to limit the deficit and the government debt into numerical requirements? The regulation was leading to this direction in the past decades, but the economic change and the development of the external environment move the public finances of the national economies to a different direction. In my opinion, in order to ensure the efficiency of quantification it is necessary to find the institutional and the methodological guarantees. The budgetary planning and the scientifically well-founded execution, the confirmation of Maastricht criterion, the implementation of European Semester and the budgetary councils as political innovations all show this direction. These institutional solutions are examples for the non-EU member states. Nevertheless, in connection with the EU the question arises, how much jurisdiction the governments of the EU member states should have and what they should delegate to Community level considering the establishment of fiscal set of rules, the operation and supervision. Until now the Community level regulation of the fiscal framework of the eurozone countries has been developed and confirmed within the framework of the Budget Pact. The non-eurozone members could voluntarily choose to sign the contracts, agreements, so for example Hungary did not ratify some elements.

As the member states undertook the obligation in their accession treaties that they would use the euro as the common currency in the future, relinquish the autonomous monetary policy, therefore they are less willing to remove the fiscal policy as economic policy tool from their sovereign competence. At the same time the rules that were created in the last decade tried to move towards the community fiscal policy, although the target of the establishment of political union was not set. Monitoring this, for the non-eurozone countries the implementation of the common currency appeared to be a less attractive alternative. Until the establishment of political union is not the target of the member states, such community rules should be established, which provides possibilities for all member countries for the national economic policy.

The research about the Visegrad Countries shed light on the shortcomings of fiscal sustainability theories that can be the basis of further debates. Relating to the latter topic I raise criticism as it is questionable how much the existing indicators are able to express fiscal sustainability, as the empirical results shed light on the fact that the same economic policy is evaluated from different aspect in short and middle-term (not to mention long-term), so it is possible that there is no such fiscal policy that is able to have effect on the fiscal sustainability in any manners that is constant over time. Besides it also occurs that if the fiscal policy is affected by other factors than the national economic policy too, how the fiscal policy can prepare for these events and processes.

Furthermore, we can ask that question as well, that if the original fiscal sustainability definition expects from the fiscal policy that the government debt should be relatively stable in long-term then why the short and middle-term indicators are in conflict. In my opinion for these are questions there are no good or bad answer, according to my research I can lay down that in short-term the effect of political forces has greater recognition in the fiscal decisions, which is not so much perceivable in middle-term and its level can be negligible in long-term.

If we use data that are forecasted for 15-30 years for the indicators of the long-term fiscal sustainability (e.g. forecasted deficit for 2030 or increase of expenditure or income), then the modelling raises the need of having appropriate volume of data for preparing the reliable forecast that makes the need of existence of long timelines inevitable. This long data series are available in the case of some countries like the USA that have exceptional statistical database. As long as there are no data series at least for 60-80 years for a country it is only possible to examine the short and the middle-term that can behave differently than the long-term. In connection with the indicators that measure the applicability of long-term fiscal sustainability the question also raises that in the countries the solution of balance problems requires immediate (short-term) interventions from the government, so the analysis of long-term fiscal sustainability can be relevant from the researcher's view, it can be a generous guideline for the economic politicians. For the economic politicians the indicators applied for short and middle-term can be quite useful.

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