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THE IMPACT OF PUBLIC DEBT ON ECONOMIC GROWTH IN THE COUNTRIES OF THE VISEGRAD GROUP

The issue of public debt, including its service is relevant to most countries. As a result of the study, the importance of this problem was identified with appropriate arguments in the writings of scientists. Identifying the effect of public debt on economic growth and debt policy in the Visegrad four countries. The objectives of the article are: to review the literature on this subject and to compare the views of scientists; to identify the level of influence of public debt and external debt on GDP dynamics in these countries; to justify the forecast level of public debt by 2020. In the research process, statistical, comparative, economic-mathematical methods. To study this effect built linear regression model for each country and compiled by the regression equation using the method of least squares. The importance of identifying the relationship between the dynamics of public debt and economic growth is caused by the fact that in countries of V4 Group are observed different approaches to the formation of debt policy. The level of Public debt as a percentage of GDP in the Czech Republic, Hungary, Poland and Slovakia of the period of 2011–2015 has been analyzed. Using a mathematical apparatus, the impact of debt on GDP can be analyzed, it shows that this impact on GDP in all countries of the V4 Group can be different as strong – Czech Republic and Hungary, and significant – Poland and prominent – Slovakia. In order to more broadly identify the influence of other factors on economic growth, the main indicators are analyzed, in particular inflation, exports, imports, unemployment, etc. Poland is the most economically developed country of the V4 countries and the GDP dynamics has a great importance to the debt ratio. During 2016 – mid-2018, the Polish government predicts a slight increase in the dynamics of GDP and the volume of this type of debt will grow at a moderate pace. Such stability is evidence of the reliability of an economic system that can withstand globalization challenges.

The results of the study indicate that each of the countries of the V4 Group pursues its own economic policy, which is the most optimal for some periods. It is safe to assert that the growth of exports and imports is a significant factor in ensuring of economic growth in the V4 countries. It is worth noting that an important factor of economic growth of Slovakia is strong economic ties with Germany, which is Slovakia's number one trade partner. Czech Republic is the second largest trading partner for Slovakia, both in terms of exports and imports.

Key words: *GDP, state debt, debt policy, factors of influence.*

Ю. В. Пасічник. Вплив державного боргу на економічне зростання в країнах Вишеградської групи

Важливість визначення взаємозв'язку між динамікою державного боргу та економічним зростанням обумовлена тим, що в країнах групи «Вишеградської четвірки» (V4) спостерігаються різні підходи до формування боргової політики. У результаті дослідження важливість цієї проблеми була підтверджена аргументами в працях вчених. Проаналізовано рівень державного боргу у відсотках від ВВП Чеської Республіки, Угорщини, Польщі та Словаччини за період 2011–2015 рр. З використанням математичного апарату проаналізовано вплив заборгованості на ВВП, де було виявлено, що він у всіх країнах групи V4 може бути різним: як сильним – у Чехії та Угорщині, відчутним – у Польщі, так і помірним – у Словаччині. Для більш ґрунтовного визначення впливу інших чинників на економічне зростання аналізуються основні показники, зокрема інфляція, експорт, імпорт, безробіття тощо. Результати дослідження показують, що кожна з країн V4 формує свою власну економічну політику, яка є найбільш оптимальною для конкретних періодів.

Ключові слова: *ВВП, державний борг, боргова політика, чинники впливу.*

Introduction. The Visegrad Group (Visegrad Group) was formed on February 15, 1991,in the result of the meeting of the leaders of the three countries – Poland, Hungary, Czechoslovakia in the Hungarian city of Visegrad, which gave the name for it. After the dissolution of Czechoslovakia, Visegrad 3 turned into the Visegrad 4 – Poland, Hungary, Czech Republic and Slovakia (V4 Group). As result at the end of 2015, the V4 Group has a population of 64.3m, accounting for 12.7 % of the population of the EU. The total GDP (EUR billions) of the V4 was 674.7, representing 4.6 % of the EU.

In May 2004, countries of the V4 Group joined the EU and the Prime Ministers signed a new declaration of cooperation. Joining the EU V4 Group together defends their interests in the EU bodies, having realized in 2004 its desire that new members of the EU budget be allocated in smaller proportions than its old members and, after long negotiations, received more favorable access to the financial funds that are directed to help the agrarian sector and the development of those regions that need a support.

Slovakia was the first country in the V4 Group which give up the national currency, the Slovak koruna, on January 1, 2009, and introduced the euro. The rest of the countries did not introduce the European currency, believing that in the future it will be necessary to maintain an independent monetary and credit policy and a flexible exchange rate. In addition, these countries do not yet meet the Maastricht criteria for inflation and the state budget deficit.

Forming its own economic systems the V4 Group haas its national debt. It should be noted that public debt is common for all countries of the world and at present it is an integral part of economic development.

Today, there are different views and opinions of scholars on the impact of public debt on economic growth, and in particular, there are three approaches for research, namely: public debt can have a positive, negative and neutral impact on economic growth. Positive impact is manifested in the fact that an increase in financial resources contributes to the investment path of development, which will increase the rate of economic development of the country. Negative influence is manifested in the fact that the use of attracted capital for social needs leads to a sharp decrease in national savings and a significant reduction in economic development. The essence

of the third approach lies in the fact that the existence of public debt does not significantly affect the economic growth in the country.

Literature Review. An analysis of recent studies and publications suggests that these approaches manifest themselves in different ways around the world. Though Baum A., Herndon T., Kimball M., Minea A., Reinhart C.Mcomprehensively analyzed this influence in the EU countries.

They show that the point of change beyond which economic growth decrese is around 90 %. Cecchetti et al. [5]offers a point of 86 % of GDP for a panel of 18 OECD countries and the period of time which occures from 1980 to 2010. Padoan et al. [10] shows the same effects for the same group of countries but he offers a longer period for this (1960 to 2010). Kumar and Woo [9] are sure that the point of change is at 90 % of GDP for a mix of advanced and emerging market economies. Checherita and Rother [6] and Baum et al. [3] present familiar results for this European Union countries. Caner et al. [4]and Elmeskov and Sutherland [7] report that the inclining point is lower: 77 % for 77 countries, and 66 % for 12 of OECD countries. Panizza and Presbitero [11] argue that a negative difference between debt and economic growth doesn't indicate causality, but a lower economic growth is shown in a higher public debt-to-GDP ratio, the problems of optimization of the structure of public debt was explored by Kyrylenko [1] investigates.

First of all, we should compare the point of 90% which was stated by Reinhart and Rogoff [12] and a point of 120 % which was stated by Herndon et al. [8] they were using an econometric model, and the elasticity concept to analyze the impact of public debt-to-GDP ratio on the real GDP rate growth in advanced countries at time period from 1946 to 2009. Finally, we can analyze the negative relationship between the public debtto-GDP ratio and the real GDP growth rate for this purpose we can use a nonparametric method.

Purpose. Identifying the effect of public debt on economic growth and debt policy in the Visegrad four countries. The objectives of the article are: to review the literature on this subject and to compare the views of scientists; to identify the level of influence of public debt and external debt on GDP dynamics in these countries; to justify the forecast level of public debt by 2020.

Result. The problem of public debt will be relevant for research as long as governments turn to borrowings. It should be noted that state credit in the modern sense was used at first in England in the seventeenth century to provide funding for public needs. In the twentieth century In connection with the rapid development of the economy began to form a special cost budget policy, using both external and internal borrowing. According to J. M. Keynes's theoretical developments, public spending should be realized through a loan.J. M. Keynes followers called this approach debt-compensating finances. At the same time, A.C. Pigou [2] argued that debt financing should be used with great caution, because it could lead to significant problems directly in public finances itself and it would negatively affect on the entire socio-economic system. He believed that public finance policy should be based on the principles of unity of taxes and government loans, where taxes should significantly exceed debt financing.

In modern conditions, the problem of public debt is quite thoroughly elucidated by scientists from all countries where this debt is present. These scientific developments are based on the works of such world-renowned scientists as A. C. Pigou, J. M. Keynes, J. M. Buchanan. The governments of each country applying for external or internal loans form their own approaches for obtaining loans, including the type of creditor, directions for its use, and repayment methods.

According to the importance of this issue at the global level, relevant international financial institutions, especialy the International Monetary Fund (IMF) set the appropriate criteria for obtaining loans and methods for how they should be repayable. There are so-called Maastricht criteria, one of which suggests that the total public debt should not exceed 60 % of GDP. In the event that the country has not found the ability to pay off external borrowings comes a default procedure. So, the issue of external borrowing is quite important for the functioning of any country. The main problem of borrowing, especially external ones, is the need for mandatory payment of interest on the amount of the loan and, in fact, the loan itself. So, when referring to borrowing, it is necessary to calculate competently that the income that will receive the economy of a particular country in the long run necessarily exceeds the total amount of interest, which must be paid regularly on the same loan. But in all countries this does not work effectively.

We will analyze the situation with the Government debt and foreign debt as percentage of GDP in V4 for 2011–2015 separately for each country, which will allow to make defanite comparisons.

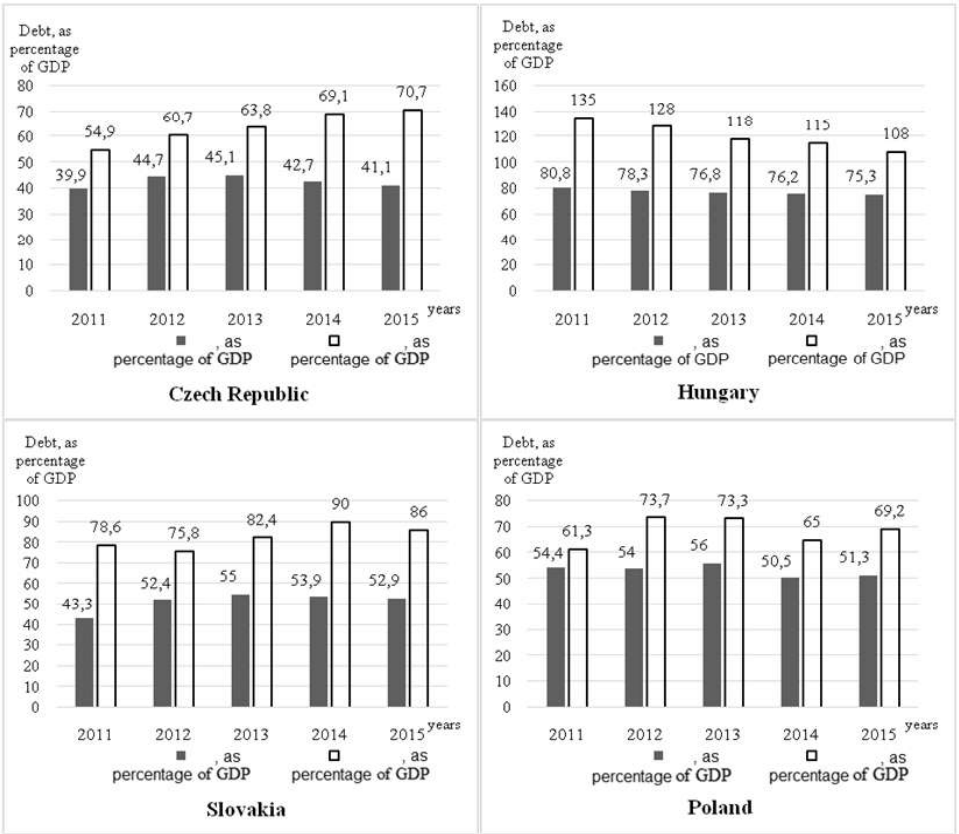

Figure 1. Public debt and foreign debt, as percentage of GDP

Source: Author, based on the database Czech Statistical Office, Czech National Bank; Central Statistics Office, Hungarian National Bank; Central Statistical Office of Poland, National Bank of Poland; Statistical Office of the Slovak Republic, National Bank of Slovakia.

The data on this figure confirm that debt policy in V4 is different. The highest level of Public debt, as percentage of GDP in Hungary. It should be noted that Hungary is the only country in V4, where Public debt does not meet the Maastricht criterion and significantly exceeds the established threshold of 60 %, but it can be stated that since 2011 there is a positive trend towards its reduction. Other countries of V4 did not exceed this criterion during the analyzed period of 2011–2015. Poland and Slovakia, from 2012 to 2015, practically compared this ratio at the level of 51.3–56 %. The lowest level of debt for the analyzed period had Czech Republic, which during 2011–2015 did not exceed the 45.1 % mark, and during 2013–2015 there was a tendency to decrease it. We will analyze one more criterion of debt – Foreign debt as percentage of GDP for these countries for the period of 2011–2015.

In comparison to the Public debt External debt is somewhat higher. Thus, Hungary in 2011 had the highest results among the V4, which was 135 %. At the same time, during the analyzed period in Hungary it had decreased significantly and in 2015 it was 108 %. Trends in reducing of this criterion over this period are observed in Poland. In the contrary, in Czech Republic it was growing dynamically, although not at a high rate – from 54.9 % in 2011 to 70.7 % in 2015. The flexible policy on this criterion shows that Slovakia- from the growth in the period of 2011. 78.6 % to 90 % in 2014 and decrease to 86 % in 2015.

Consequently, each country has its own debt strategy according to this criterion. To find out the impact of the Public debt in economic growth, we will perform an appropriate analysis.

To investigate the impact of Debt on GDP, we will construct a linear regression model for each of the countries and construct a regression equation using the least squares method. We calculate the value of the coefficient of the pair linear correlation r_xy and estimate the density of communication on the following scale:

$0{,}1 \le r_{xy} < 0{,}3$ – connection is weak;

$0{,}3 \le r_{xy} < 0{,}5$ – connection is moderate;

$0{,}5 \le r_{xy} < 0{,}7$ – connection is noticeable;

$0{,}7 \le r_{xy} < 0{,}9$ – connection is strong;

$0{,}9 \le r_{xy} < 0{,}99$ – connection is very strong;

$r_{xy} = 1$ – connection is functional.

So, $y = a_1 x + a_0$. (1)

– is a liner model where: Y – factor Debt, X – factor GDP, regression coefficient a_0 is not economically interpreted, and the regression coefficient a_1 shows on which part from the increase (decrease) GDP respectively will increase (decrease) Debt. (For example, if a_1 = 0,54 – this means that with an increase of GDP in 1 000 000 EUR. Debt will increase by 0,54 × 1 000 000 = 540 000 EUR.

The coefficients a_0 i a_1 are from the following equation system

$$\begin{cases} na_0 + a_1 \sum x_i = \sum y_i, \\ a_0 \sum x_i + a_1 \sum x_i^2 = \sum x_i y_i. \end{cases} \quad (2)$$

$$r_{xy} = \frac{\overline{xy} - \bar{x}\bar{y}}{\sigma_x \sigma_y}, \text{ where: } \sigma_x = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}, \quad (3)$$

$$\sigma_y = \sqrt{\frac{\Sigma(y_i - \bar{y})^2}{n}},\ \overline{xy} = \frac{\Sigma x_i y_i}{n}, \tag{4}$$

$$\bar{x} = \frac{\Sigma x_i}{n},\ \bar{y} = \frac{\Sigma y_i}{n}. \tag{5}$$

Using such coefficients, we will calculate the corresponding impact of the debt on GDP to each of the countries of V4.

For convenience, we will compile spreadsheets for each country.

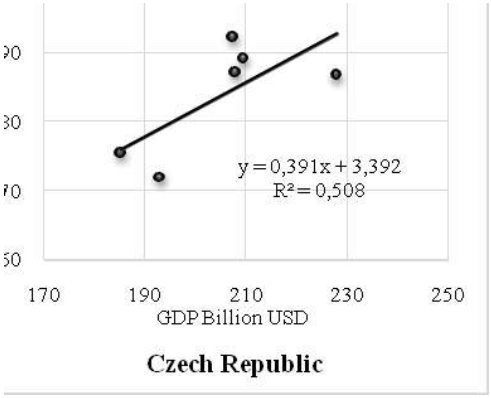

Figure 2. The level of influence of GDP on economic growth

Source: Prepared by authors.

After calculating with the use of MS Excel, we have the following values:

$a_1 = 1{,}298894$, $a_0 = 96{,}32695$.

The function of linear dependence $y = 1{,}298894x + 96{,}32695$ (6)

$r_{xy} = 0{,}7133489$ – so influence of Debt on GDP is strong.

The level of this coefficient shows that Czech Republic's economic development is heavily dependent on these borrowings. Perform similar calculations for other countries.

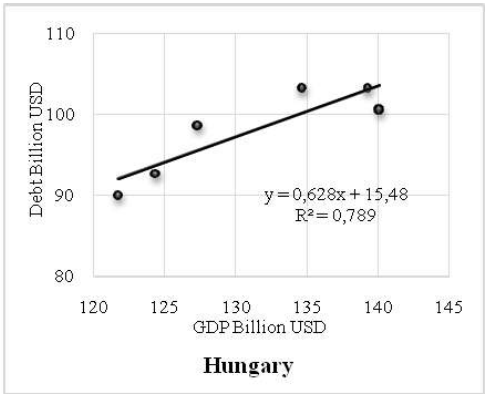

Figure 3. The level of influence of GDP on economic growth

Source: Prepared by authors.

After calculating with the use of MS Excel, we have the following values:
a_1 = 1,25541, a_0 = 8,208772.
The function of linear dependence $y = 1{,}25541x + 8{,}208772$ (7)
r_{xy} = 0,888463 – so influence of Debt on GDP is strong.
The results of the analysis concerning Hungary also confirm the similar ependence.

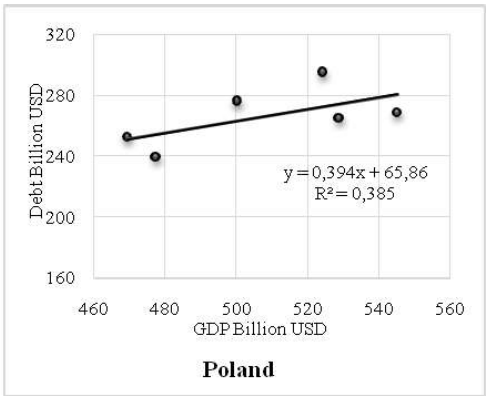

Figure 4. The level of influence of GDP on economic growth
Source: Prepared by authors.

After calculating with the use of MS Excel, we have the following values:
a_1 = 0,97703, a_0 = 247,6694.
The function of linear dependence $y = 0{,}97703x + 247{,}6694$ (8)
r_{xy} = 0,620684 – so influence of Debt on GDP is notable.
This influence in Poland in comparison with Czech Republic and Hungary, is not so significant.

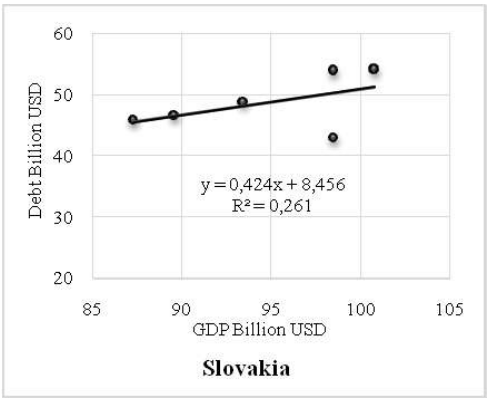

Figure 5. The level of influence of GDP on economic growth
Source: Prepared by authors.

After calculating with the use of MS Excel, we have the following values:
a_1 = 0,615798, a_0 = 64,68393.

The function of linear dependence $y = 0{,}615798x + 64{,}68393$ (9)

$r_{xy} = 0{,}511514$ – so influence of Debt on GDP is notable. The impact of this indicator in Slovakia is the least visible among other countries of V4. We will analyze how flexibly in Slovakia is held debt policy over a longer period of time.

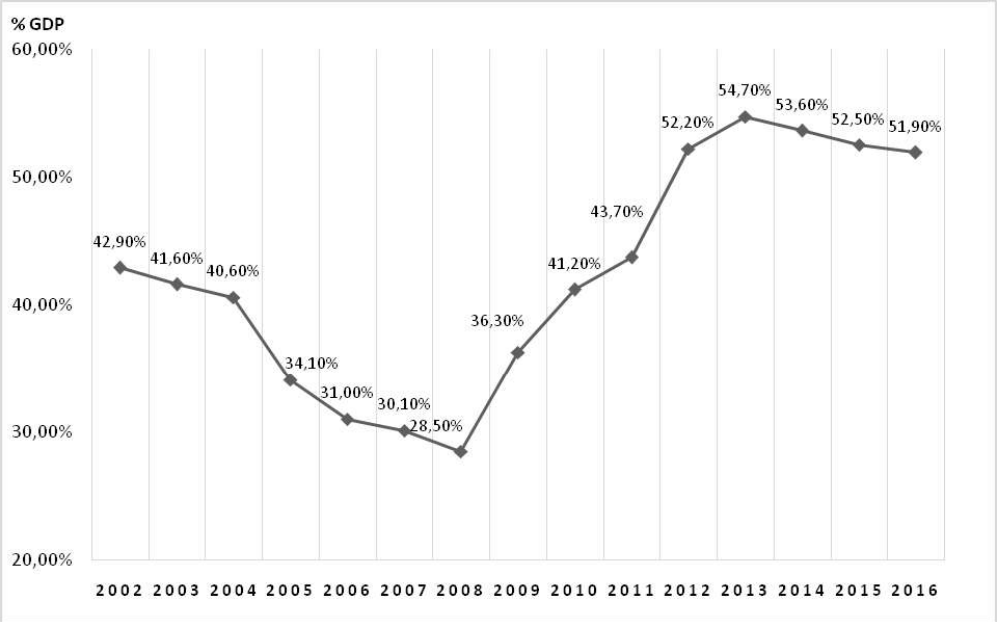

Figure 6. Slovakia: Debt evolutionas percent of GDP

Source: Slovakia National Debt .http://countryeconomy.com/national-debt/slovakia.

Over the period of the fifteen-years, Slovakia has used different approaches for debt policy – from the decrease of the level of dependence during the period of 2002–2008 to a significant increase of this level in 2009–2013 and again at a declining of this level in 2014–2016. This trend shows a flexible approach in Depending from the economic strategy pursued by different governments. For a deeper understanding of the role of debt in economic growth, we will examine the main macroeconomic criteria for the development of each of the countries V4.

Let's analyze the main indicators with the relevant rersults that reflect the state of economic development of individual countries of V4.

The comparison of these indicators in order to identify the appropriateness of the effectiveness of debt policy confirms that during the period from 2011 to 2015 not in all years it was possible to ensure the dynamics of economic growth, and in 2012–2013 there was decline in dynamics of GDP , although Public debt in these years has increased. Foreign debt also grew during this period, which is evidence of inefficiency in the use of loans for economic growth. In 2014–2015, the positive dynamics of GDP were resumed, although Public debt and Foreign debt tended to decrease. In this case, it is necessary to pay attention to the growth of exports and imports in those years, which had a greater impact on the positive dynamics of economic development. It should be noted that the Czech Republic came out of a long recession, which was the result of a policy

of austerity and economic decline in Western European countries by 2013. The government of Peter Nekas during his tenure from July 2010 to July 2013 increased taxes, reduced investments, Which allowed reducing the budget deficit and public debt and created good conditions for economic growth.

Table 1

Economic data of the Czech Republic

Indicator	2011	2012	2013	2014	2015
GDP growth, in percentage	2,0	–0,8	–0,5	2,0	4,3
Investment growth, in percentage	1,1	–3,1	–2,8	2,1	7,7
Industrial production growth, in percentage	5,9	–0,8	–0,1	5,0	4,4
Unemployment rate, in percentage	6,7	6,8	7,7	7,7	6,5
General government deficit, as percentage of GDP	–2,7	–3,9	–1,3	–1,9	–0,4
Public debt, as percentage of GDP	39,9	44,7	45,1	42,7	41,1
CPI inflation, in percentage	2,4	2,4	1,4	0,1	0,1
Exchange rate of the CZK to the EUR	25,8	25,14	27,43	27,73	27,03
Exports in EUR billions	99	104	103	110	118
Imports in EUR billions	96	99	97	102	111
Foreign reserves in EUR billions	31	34	40,8	45	59,4
Foreign debt as percentage of GDP	54,9	60,7	63,8	69,1	70,7

Source: Czech Statistical Office, Czech National Bank.

Let's analyze the situation with expected repayment dates of Government Debt.

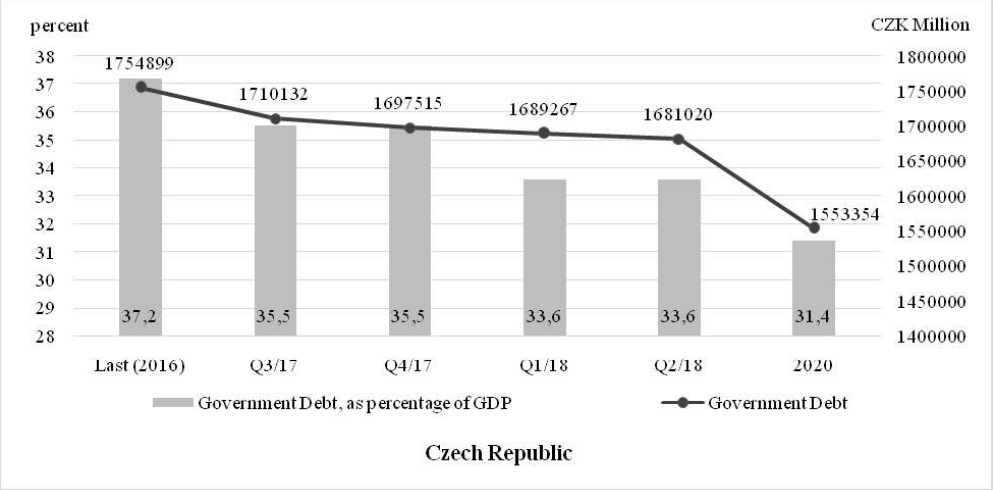

Figure 7. Government Debt and Government Debt, as percentage of GDP

Source: Author, based on the MONITOR database tradingeconomics.com.

Table 2

Economic data of Hungary

Indicator	2011	2012	2013	2014	2015
GDP growth, in percentage	1,8	–1,7	1,9	3,7	2,9
Investment growth, in percentage	–1,3	–3,4	7,3	11,2	1,9
Industrial production growth, in percentage	5,8	–1,3	1,4	7,3	7,2
Unemployment rate, in percentage	11,1	11,1	10,1	7,7	6,8
General government deficit, as percentage of GDP	–5,5	–2,3	–2,6	–2,3	–2,0
Public debt, as percentage of GDP	80,8	78,3	76,8	76,2	75,3
CPI inflation, in percentage	4,1	5,0	0,4	–0,9	0,9
Exchange rate of the HUF to the EUR	279,4	289,2	296,9	308,7	309,9
Exports in EUR billions	80,0	80,0	81,3	84,5	90,5
Imports in EUR billions	72,9	73,3	74,7	78,2	82,4
Foreign reserves in EUR billions	33,7	37,8	33,8	33,8	34,6
Foreign debt as percentage of GDP	135	128	118	115	108

Source: Central Statistical Office, Hungarian National Bank.

The analysis of these data convinces us that the significant level of Public debt, as a percentage of GDP and Foreign debt as a percentage of GDP, can not be an obstacle in ensuring the dynamics of economic growth, which Hungary is demonstrating steadily from 2013. It should be noted that during these years have been observing the Reducing of the level of both types of debt, while exports and imports grew dynamically: exports from 80 EUR billion in 2011 to 90.5 EUR billion in 2015; Imports – from 72.9 EUR billion in 2011 to 82.4 billion dollars in 2015. It should be noted that ensuring the dynamics of economic growth took place at a slight inflation rate, which in 2011 was 4.1 %, in 2012 – 5.0 %, 2013 – 0.4 %, and in 2014 there was a deflation of 0.9 %. Also, a positive factor in economic growth was the decline of unemployment, which in 2011 was 11.1 %, and in 2015 it was 6.8 %.

Let's analyze the situation with the repayment of Government Debt.

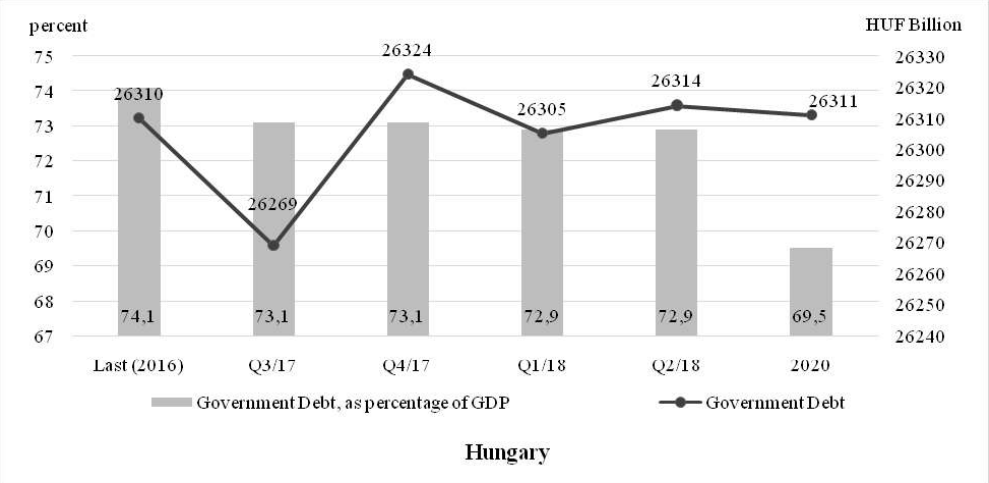

Figure 8. Government Debt and Government Debt, as percentage of GDP
Source: Author, based on the MONITOR database tradingeconomics.com.

It should be noted that the level of this debt in Hungary is one of the largest among the countries V4. Thus, its level in 2016 was approximately twice higher to the level of debt in the Czech Republic, on one and half times in Poland and Slovakia. However, traditional approaches to debt borrowing are sustainable, and so the Government of Hungary until 2020 does not expect a significant reduction of this debt in relation to GDP. So, if the level of this debt in 2016 amounted to 74,1 % of GDP, then in 2020 – 69,5 %, which in general means a tendency for a slight decrease.

Let's analyze the same situation in Poland.

Table 3

Economic data of Poland

Indicator	2011	2012	2013	2014	2015
GDP growth, in percentage	5,0	1,7	1,2	3,3	3,6
Investment growth, in percentage	8,8	–1,8	–1,1	10,0	5,8
Industrial production growth, in percentage	7,5	0,5	1,8	4,1	4,8
Unemployment rate, in percentage	12,5	13,4	13,4	11,4	9,8
General government deficit, as percentage of GDP	–4,9	–3,7	–4,0	–3,3	–2,6
Public debt, as percentage of GDP	54,4	54,0	56,0	50,5	51,3
CPI inflation, in percentage	4,6	2,4	0,7	–1,0	–0,5
Exchange rate of the PLN to the EUR	4,47	4,08	4,15	4,29	4,26
Exports in EUR billions	136,7	143,5	155,0	165,7	179,6
Imports in EUR billions	152,6	154,0	157,0	168,4	177,2
Foreign reserves in EUR billions	75,7	82,6	77,1	82,6	86,9
Foreign debt as percentage of GDP	61,3	73,7	73,3	65,0	69,2

Source: Central Statistical Office of Poland, National Bank of Poland.

It should be noted that Poland demonstrates a high level of macroeconomic stability, which was laid in the course of structural reforms at the beginning of the 21st century, which included trade liberalization, the introduction of a low corporate tax rate, optimization of the legal basis for doing business, etc.

The assessment of these data confirms that in Poland the dynamics of economic growth with a susceptible level of Public debt is maintained, which ranged from 50.5 % in 2014 to 56.0 % in 2013. As in other countries, V4 is experiencing a dynamic growth of exports and import. The positive factor is the extremely low inflation rate – from 4.6 % in 2011 to 0.7 % in 2013 and deflation in 2014–2015. The negative factor of economic growth is the rather high level of unemployment, which is 2012–2013. was 13.4 %, but in 2014–2015 it was decreased.

Let's analyze the situation with the repayment of Government Debt.

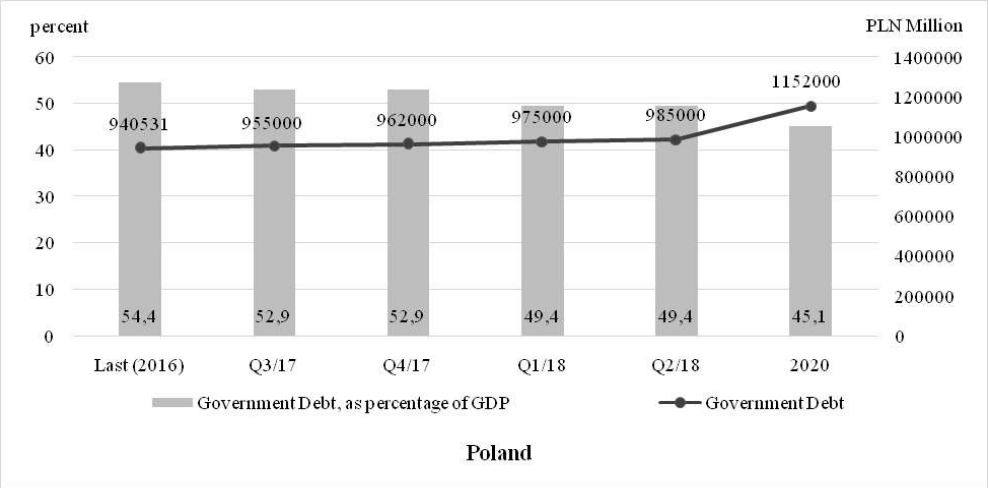

Figure 9. Government Debt and Government Debt, as percentage of GDP
Source: Author, based on the MONITOR database tradingeconomics.com.

Poland is the most economically developed country of the V4 countries and the GDP dynamics has a great importance to the debt ratio. During 2016 – mid-2018, the Polish government predicts a slight increase in the dynamics of GDP and the volume of this type of debt will grow at a moderate pace. Such stability is evidence of the reliability of an economic system that can withstand globalization challenges.

Let's analyze the same situation in Slovakia.

Table 4

Economic data of Slovakia

Indicator	2011	2012	2013	2014	2015
GDP growth, in percentage	2,8	1,5	1,4	2,5	3,6
Investment growth, in percentage	12,7	–9,2	–1,1	3,5	14,0
Industrial production growth, in percentage	5,8	8,0	3,8	8,6	6,9
Unemployment rate, in percentage	13,7	14,0	14,2	13,2	11,5
General government deficit, as percentage of GDP	–4,1	–4,3	–2,7	–2,7	–3,0
Public debt, as percentage of GDP	43,3	52,4	55,0	53,9	52,9
CPI inflation, in percentage	4,4	3,2	0,4	–0,1	–0,5
Central bank interest rate, in percentage	1,0	0,75	0,25	0,05	0,05
Current account balance to GDP. in percentage	–4,6	1,0	2,0	0,1	–1,3
Exports in EUR billions	54,7	60,2	62,1	62,6	65,9
Imports in EUR billions	54,7	57,7	59,1	59,7	64,1
Foreign debt as percentage of GDP	78,6	75,8	82,4	90,0	86,0

Source: Statistical Office of the Slovak Republic, National Bank of Slovakia.

The dynamics of these data proves that the level of the Public debt, which is one of the lowest in comparison with other countries, contributes to stable economic growth, which in

2012 was 2.5 %, and in 2015 – 3.6 %. A positive factor in such growth is a constant surplus of exports over imports, and this tendency is observed from 2012. Also, positive factors include low inflation, which was only 4.4 % in 2011, in other years it was insignificant, and it was a deflation in 2014–2015. Some negatives include the relatively high level of unemployment, which is at a high level – from 14.2 % in 2013 to 11.5 % in 2015. However, it should be noted that since 2014 there is a gradual decrease of this level. It can be noted that in 2015, the growth rate of economic growth had a significant impact on investment growth, which was 14 % compared with the previous period. It should be noted that the National Bank of Slovakia for the period in 2011–2015 conducted an extremely optimal policy for investment loans, keeping at a level not exceeding 1 % in 2011, with a significant decrease to 0.05 % in 2014–2015. The effectiveness of general economic policy is also confirmed by the fact that the Industrial production growth in percentage over the analyzed period ranged from 3.8 % in 2013 to 8.6 % in 2014, despite the tendency to increase Foreign debt as percentage of GDP from 75.8 %. In 2012 to 90 % in 2014 At the same time, it should be noted that in 2015 it decreased to 86.0 %.

Let's analyze the dynamics of Government Debt.

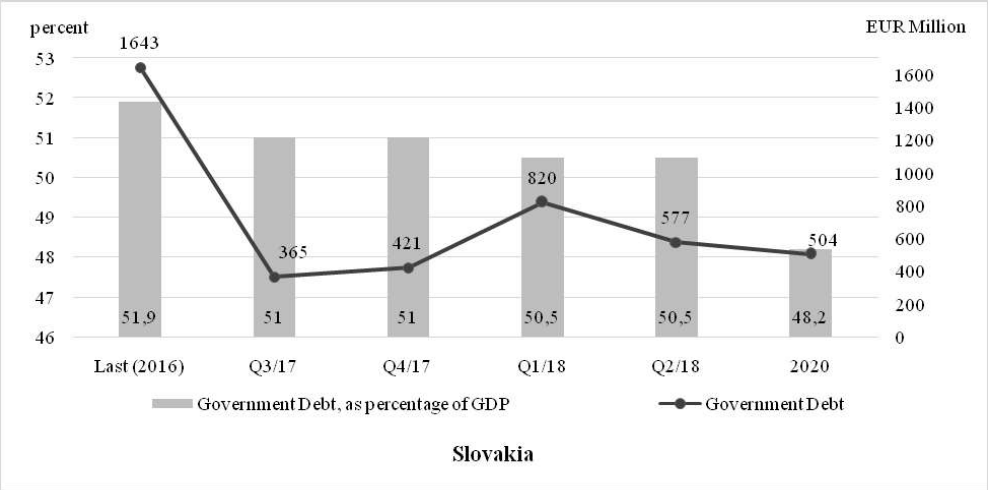

Figure 10. Government Debt and Government Debt, as percentage of GDP
Source: Author, based on the MONITOR database tradingeconomics.com.

The situation with this kind of debt is almost similar to the situation in Poland – the level of debt to GDP in 2016 – Q2 2018 is at the limit of 50 %. It should be noted that in Slovakia, starting from 2016, a significant reduction in the volume of this debt is foreseen the reflection of the government's national debt strategy.

Conclusions. The resaurch of the impact of public debt on the dynamics of economic growth convinces that countries of V4 conduct their own debt policy, which reflects the national specificity of the amount of borrowing, the dynamics of the formation of these credit resources. Despite the rather significant public debt, the percentage of GDP in Hungary succeeded in ensuring the dynamism of economic development. It is established that this impact on GDP in all countries of the V4 Group is as strong as Czech Republic and Hungary, as well as significant,

Poland and prominent Slovakia. It was found a general tendency in reducing of Public debt, as percentage of GDP in all countries of the V4 Group is revealed.

It is safe to assert that the growth of exports and imports is a significant factor in ensuring of economic growth in the V4 countries. It is worth noting that an important factor of economic growth of Slovakia is strong economic ties with Germany, which is Slovakia's number one trade partner. Czech Republic is the second largest trading partner for Slovakia, both in terms of exports and imports.

Summing up, it can be concluded that there is a different impacts of debt on the dynamics of economic growth in all countries of the V4 Group, but it does not significantly impede the dynamics of economic growth.

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Ю. В. Пасичник. Влияние государственного долга на экономический рост в странах Вышеградской группы

Важность определения взаимосвязи между динамикой государственного долга и экономическим ростом обусловлена тем, что в странах группы «Вышеградской четверки» (V4) наблюдаются различные подходы к формированию долговой политики. В результате исследования важность этой проблемы была подтверждена аргументами в трудах ученых. Проанализирован уровень государственного долга в процентах от ВВП в Чешской Республике, Венгрии, Польше и Словакии за период 2011–2015 гг. С использованием математического аппарата проанализировано влияние задолженности на ВВП, где было обнаружено, что он во всех странах группы V4 может быть различным: как сильным – в Чехии и Венгрии, ощутимым – в Польше, так и умеренным – в Словакии. Для более расширенного определения влияния других факторов на экономический рост анализируются основные показатели, в частности инфляция, экспорт, импорт, безработица и т. п. Результаты исследования показывают, что каждая из стран V4 формирует свою собственную экономическую политику, которая является наиболее оптимальной для конкретных периодов.

Ключевые слова: *ВВП, государственный долг, долговая политика, факторы влияния.*

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