

## **8. Short and medium term fiscal sustainability in Poland in comparison with the V4 Group**

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*Nowadays, sustainability and sustainable growth are an often mentioned concept. In connection with the financial crisis, the budget and fiscal policy sustainability has been the forefront of research. This study took its advice and follows a simple intertemporal budget constraint and calculate primary gap in some selected years (2004, 2009, 2014) and testing assumptions for short-term and medium term selected periods (2000–2004, 2005–2009, 2010–2014) in Poland in comparison with the Visegrad Group Countries.*

*Result of examination is fiscal stance of V4 countries was varied. Based on most of estimated results the short-term fiscal policy stances of V4 seem to be unsustainable, but in medium-term seem to be sustainable particularly in Poland. Poland has good results thanks to continuous economic growth, stable and renewable fiscal policy and large domestic market.*

*Keywords: fiscal sustainability, fiscal debt, fiscal gap, Poland*

### **1. Introduction**

Nowadays, sustainability and sustainable growth are an often mentioned together. In connection with the financial crisis, the budgetary and fiscal policy sustainability has been the forefront of research. Based on the definition of fiscal sustainability is very difficult to understand. The study used a boarder scope in understanding this concept: “*concept of fiscal sustainability relates to a government's ability to indefinitely maintain the same set of policies while remaining solvent*” (Burnstein 2005, p. 10).

Poland is a member of the Visegrad Group (V4). Visegrad Group Countries means Czech Republic, Hungary, Poland, and Slovakia. Declaration on Cooperation between the Czech and Slovak Federal Republic, the Republic of Poland and the Republic of Hungary in Striving for European Integration signed in Visegrad on 15 February 1991. Visegrad Group is more homogenous group than European Union. V4 have been sharing traditional and intellectual values and common roots, so they are good benchmark of public finance sustainability too.

Aristovnik and Berčič (2007) examined transition economies with a specific intertemporal budget constraint, whereas their results indicate that fiscal sustainability seems to be a problem in many transition countries, for example Poland. The study follows this methodology with some modifications. Present paper revolves around the specialties of

intertemporal budget constraint and underlines the most important elements of long run fiscal sustainability in terms of pension payment obligations and health care outlays for the elderly which are consequences of the aging population and the lower fertility rate (Orban – Szapary 2004, McHugh et al. 2011).

The paper is organized as follows: chapter 2 gives a theoretical background where literature about fiscal sustainability is summarized and examine some macroeconomic connection factors in Poland with comparison in Visegrad Group Countries are examined. Chapter 3 deals with the methods of the empirical examination of the current study. Chapter 4 includes data and results by empirical examination and the last chapter 5 constitutes the conclusion.

## 2. Theoretical background

The literature defining to the concept of fiscal sustainability multiple point of view. The first approach for fiscal sustainability threshold defining by Buitler (1985) or Blanchard (1990). They said that the fiscal policy is sustainable if debt to GDP ratio is stable. Stable means long run stability. The following summarize that some author's claim on the subject.

### 2.1. General about fiscal sustainability

Barro (1979) examines empirical data for the U.S, and finds that a positive effect on debt issue of temporary increases in government spending (as in wartime) and a countercyclical response of debt to temporary income movements, and a one-to-one effect of expected inflation on nominal debt growth.

Bohn (1998) defined a new intertemporal budget constraint in U.S. fiscal data, and shows that an estimated positive response of primary surpluses to the debt/GDP ratio. Demonstrated that the frequent primary budget deficits do not provide convincing evidence against sustainability, because at low interest rates, a variety of sustainable policies will display primary deficits on average and potentially for long periods.

According to the European Commission's Fiscal Sustainability Report "*sustainability of fiscal policies is the ability to continue now and in the future, current policies without change regarding public services and taxation, without causing the debt to rise continuously as a share to GDP*" (EC 2012, p. 17). In Euro Zone, fiscal sustainability threshold is defined debt to GDP ratio of 60% by Stability and Growth Pact (SGP), but after the financial crisis the

average of debt ratio is much higher than 60% and continued the growth, 92.1% in 2014 based on Eurostat (2016).

Menguy (2008) draws attention the fact on the disadvantages of SGP due to its nature that it focuses on a uniform short-term criterion for the budgetary situation of the European countries (i.e. the current budgetary deficit) rather than on the long run solvability of aforementioned countries. So he suggests a new budgetary rule, that taking into account the long run sustainability of the public indebtedness and encouraging EU countries to lead healthy budgetary policies in good times in order to secure more leeway in bad times, instead of inefficient and pro-cyclical policies.

According to Cottarelli and Moghadam (2011) the anchor for fiscal policy of 60 percent of GDP is relatively close to the most recent estimates of long-run debt levels for both advanced economies and emerging economies. However, they declares that it should not be stick to this reference value, researchers should look at a variety of special circumstances and based on their information to assess the fiscal sustainability of a country.

## *2.2. Macroeconomic background in V4*

V4 countries defined transition economies<sup>1</sup> too, became independent in 1989/1990 for Soviet Union and begun a long transition process what means liberalization, macroeconomic stabilization, restructuring and privatization and legal and institutional reforms (IMF 2000). Their deep changes are much more difficult and time-consuming because they involved structural reforms and require a major modification of attitudes, incentives, and relationships (Tanzi 1999). Advantages of post socialist economic change in V4 have greater independence from political control, the enhanced well-being of consumers through better-quality and easier access to goods and services.

Disadvantages of transition have decline in the sense of economic security, the end of full employment and increased social inequalities (Domański 2003). Policymakers must face large fiscal deficits and macroeconomic problem, theirs became a more fundamental problem when governments to renege on their legal contracts by sequestering or freezing payments across the board (Tanzi 1999). Social safety net in helping overcome political constraints is

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<sup>1</sup> Transition economies in Europe and the former Soviet Union: Albania, Bulgaria, Croatia, Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Slovak Republic, Slovenia, Estonia, Latvia, Lithuania, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Transition economies in Asia: Cambodia, China, Laos, and Vietnam (IMF 2000).

quiet clear and has helped mitigate negative effect of income inequality in Poland and the Czech Republic (Roland 2002).

Transition meant a unique opportunity for these countries to put down an anchor in Western Europe (Roland 2002). Aspirations of the V4 countries that adopted tight fiscal policies were more successful with their inflation stabilization programs, have experienced a faster recovery of growth, and did not experience a steeper decline in output. Countries floated their exchange rate, but there were both floating and peg arrangements among the successful stabilizers (Budina – Van Wijnbergen 1997). V4 joined to European Union in 2004.

Visegrad countries in the first decade of EU membership were divided into three parts by Vida (2015). The post-accession and pre-crisis years (2004–2008) when macroeconomic trends improved mostly but diverging degrees except Hungary where deteriorated. The crisis years (2009–2013) meant stagnation or low growth, recession, gradual recovery and slow consolidation. Hungarian public finances were became extremely vulnerable because of crisis and previously misguided fiscal policy, thus Hungary had to start fiscal stabilization earlier than the other three countries. Finally the post-crisis years (2014 and beyond) characterized by harmonious converging trends to each other and EU averages.

The stabilizing public finance trends are coupled with stabilizing monetary trends too. Thanks to a mix of measures aiming at spreading the burdens across all the actors of the economy, Hungary could be released from the excessive deficit procedure in 2013, the Czech Republic and Slovakia followed it in 2014 and Poland in 2015 (EC 2016). In all four countries seem to keep budget deficits under 3% also in the medium run. Simultaneously, public debts are slowly declining in high-rate Hungary while are kept below 60% of GDP in the other three Visegrad countries (Vida 2015).

Despite the success of the transition process some differences between old and new members of European Union remained the same. Orban – Szapary (2004) focus on new members<sup>2</sup> and SGP criteria and emphasize that there are large differences in the starting fiscal positions of the new members.

Figure 1 shows government debt data in V4 countries and European Union and European Union (EU) 15 countries<sup>3</sup> (EU-15) averages. No more difference between two EU averages, all EU averages are a little bit lower than EU-15 averages, data available until 2000.

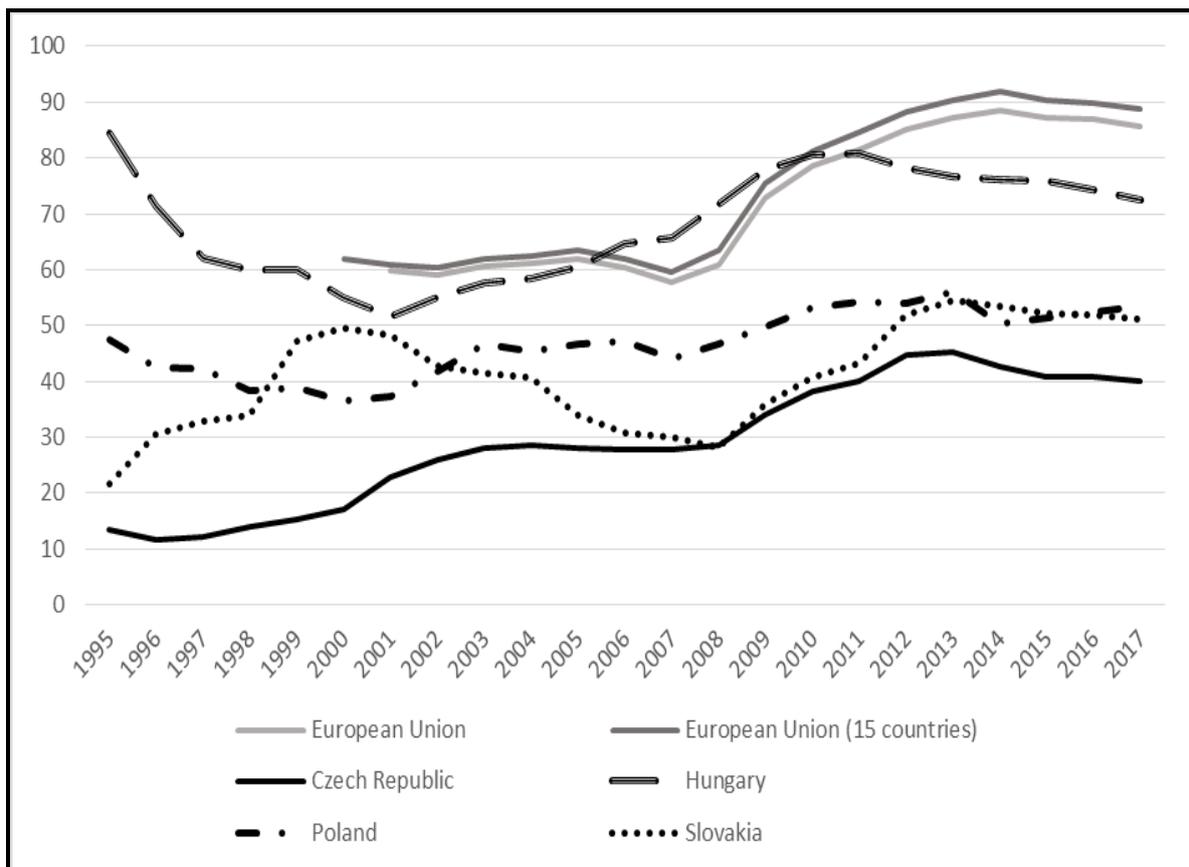
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<sup>2</sup> New members means countries who joined to European Union in 2004: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia, and Slovakia.

<sup>3</sup> EU 15 countries means Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

The highest data have for Hungary from V4 countries, but in period 2000–2005, debt of V4 countries were under the EU averages, this during this period, transition economies' convergence became stronger (Veugelers – Mrak 2009). After crisis trends of debt was increased and reach a peak in 2010 in Hungary and in 2013 in other V4 countries. In EU was not stopped increase of debt until 2014.

*Figure 1* General government consolidated gross debt in V4 countries and European Union, 1996-2017 (Percentage of GDP)



Source: AMECO (2016)

In this paper the focus is especially on intertemporal budget constraint in short and medium term, but also underlines the most important elements of long run fiscal sustainability, which are pension payment obligations and health care outlays for the elderly due to population ageing and the current fertility rate (Orban – Szapary 2004, McHugh et al. 2011). Furthermore, fiscal policies have been driven by political factors, this connection is examined for example by Roubini and Sachs (1989), Alesina et al. (1996), Wyplosz (2007),

Mauro et al. (2015). During the last decade fiscal councils<sup>4</sup> were established in some countries, for example in Hungary and in Slovakia, but due to space limitations, we do not deal with this in the current study.

### *2.3. Macroeconomic background in Poland*

Poland's transition path is named "success stories". This partly thanks to have powerful social networks, including the Catholic Church and the Solidarity trade union. At the beginning of transition real GDP was fallen of about 20 percent in the two years after price liberalization started in 1989, but recovered growth rather quickly and exceeded its pretransition real GDP level after six or seven years of transition (Roland 2002).

In 1990s has been a dark side of transition that regional differentiation has deepened: opportunities are not equal for everyone and do not emerge everywhere. There is a variety of historically rooted regional and local trajectories within the country. Indicates the extensive spread of growth within broad metropolitan areas. GDP per capita represented about 22 percent for the EU average (at purchasing-power standards) in 1990, and 10 years later no more than 40 percent. Poland's share in world exports remains low and the trade balance negative (Domanski 2003). If we show data of economic growth for the past 20 years, conclude continuous lifting what thanks to increasing labor productivity and inflow FDI.

Poland has attained living standards never seen before. (Zimny 2015). When Poland entered the European Union deficit was higher than reference value of 3% of GDP, therefore European Commission recommended the Council launch the excessive deficit procedure. The government has done everything to reduce the deficit, the efforts proved successful, deficit was 6.3% in 2003 and decreased to 2% in 2007. Economic growth was slowed by crisis. In 2009 the deficit exceeded threshold (Kawecka-Wyrzykowska 2015). In 2015 July Council abolished excessive deficit process (EC 2016).

Poland was the only EU country to avoid recession in 2009 and to record relatively good economic indicators (relatively good economic management, inflow of EU funds, flexible domestic currency and a large domestic market) and fiscal stability excluded deficit, which was in contrast to other EU members' deep instability. Government introduced reform

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<sup>4</sup> Fiscal council "stands for such a new, smaller or bigger body (consisting of a minimum of three members but could incorporate as many as two dozen) the members of which are people of high professional prestige who are independent from the government or the national assembly, operating with a background of analytical capacities that enable them to prepare alternative evaluations, forecasts or technical projections versus the macroeconomic calculations and forecasts of the government and, thanks to their respect, are also able to assert their opinions" (Kovacs 2014, p. 338)

pack, established Open Pension Funds (OFE), which will result in a substantial one-off improvement (surplus) in the Polish budget in 2014. Another new element is a proposal for a Tax Council which contributes to maintaining fiscal stability. The government joined to European Semesters, the Euro-Plus Pact and the Fiscal Compact, so that strengthen economic governance and reduce the risk of a future crisis (Kawecka-Wyrzykowska 2015).

Wójtowicz (2015) draw attention the local budgets became dependent on external transfers from the state budget and this connection may be a menace to the fiscal sustainability of local authorities. System of state grants and subsidies are not flexible and react very strongly to economic fluctuations. Local authorities have very limited fiscal autonomy which constrict their instruments to stimulate future economic growth. This problems have to improve in the future that no jeopardy fiscal stability.

### 3. Methods

According to Wyplosz (2007) we could not apply sophisticated forecasting methods, because sustainability depend on the future so we could not draft a statement with high security about primary surpluses. Solvency, and therefore sustainability as it builds upon solvency, is entirely forward-looking. There are future balances that matter, not the past and not just the current debt level. Based on the difficult and sophisticated models' needs huge data demands so the paper to focus on clear and simple indices, what easily interpreted, suggested by Blanchard et al. (1990) and Cruz-Rodríguez (2014).

Indicators for measuring fiscal sustainability are very different. One of the traditional indicators is debt to GDP ratio, it has been used Buiter (1985) and Blanchard (1990), Fatas and Mihov (2008), and nowadays D'Erasmus (2015). Blanchard calculates the "tax gap", which is the change in the tax ratio that would be necessary to stabilize the current debt-to-GDP ratio. Barta (2015) emphasizes that 'tax gap' is not equal to a primary gap, because primary gap given the current interest and growth rates might still threaten solvency if interest rates rise and/or growth rates drop. Primary gap indicators provide a diagnosis that is easy to interpret, because they show how painful the adjustment would need to be to stabilize the debt today.

Spaventa's (1987) primary gap indicators impose a condition that is neither necessary nor sufficient for the sustainability of fiscal policies. A country will have a sustainable fiscal regime if current and future primary balances, interest rates, and growth rates, are such that the government's intertemporal budget constraint is satisfied (Drudi – Pratti 2000).

The tax gaps indices, are based on a comparison of the current debt-GDP ratio and that  $n$  periods ahead with given fixed values of the deficit and discount rate (Polito – Wickens 2012).

More recently, the European Commission (2006) has formulated two fiscal indicators: S1 and S2. Both are based on official projections of government expenditure what include the effects of population ageing. The S1 indicator comprise just the Maastricht condition what maximum debt should be 60% of GDP, while the S2 indicator requires that the government inter-temporal budget constraint be satisfied over an infinite horizon. European Commission (2009, 2012) modified S1 and S2 indicators methods, that to further promote sustainability measurement.

Aristovnik and Berčič (2007) examined transition economies with a specific intertemporal budget constraint. The study follow this methodology with some modification. The reason for changes that my paper not examine long-term sustainability, because there are too many uncertain factors in this time horizon and their enumeration exceeds length limit.

Criterion is related to so called fiscal primary gap, which is the difference between the actual fiscal primary balance and the primary balance required to stabilize the debt to GDP ratio. Simple accounting identity helps shed light on the fiscal sustainability issue (Aristovnik – Berčič 2007).

According to Geithner (2002) solvency is only necessary not sufficient assumption fiscal sustainability but a non-increasing government debt to GDP ratio is seen as a practical sufficient condition for sustainability, because a government is likely to remain solvent as long as the ratio is not growing. Hemming and MacKenzie (1991) the (short-term) budget constraint is:

$$\Delta D_t/Y_t = (r_t - g_t) D_{t-1}/Y_t + B_t/Y_t + R_t/Y_t \quad (1)$$

where  $D_t$  is total public debt,  $Y_t$  nominal GDP,  $r_t$  represents the real interest rate and  $g_t$  the real economic growth rate,  $B_t$  is nominal primary (negative) balance of the public sector, in study empirical means the gap between non-interest expenditure and total revenue and  $R_t$  residual factor. When  $r_t > g_t$  this indicated upward pressure on the debt/GDP ratio, while  $r_t < g_t$  indicates downward pressure. The remaining part of the right-hand area indicates non-interest flows of government. If it is negative, government runs a primary surplus, implying downward pressure on the debt/GDP ratio. If it is positive, government runs a primary deficit, putting upward pressure on the debt/GDP ratio (Aristovnik – Berčič 2007, p. 6).

If the debt/GDP ratio depends on the relationship between the interest rate ( $r$ ), and the economic growth rate ( $g$ ), we can use (2) and (3) formula.

First can be presented as if  $g > r$ :

$$D_t/Y_t = -b \left( \frac{1+g}{g-r} \right) \quad (2)$$

Second as if  $r > g$ :

$$D_t/Y_t = -b \left( \frac{1+g}{g-r} \right) \left( \frac{1+r}{g+r} \right)^t + b \left( \frac{1+g}{g-r} \right) + \left( \frac{1+r}{g+r} \right)^t D_0/Y_0 \quad (3)$$

where  $b=B_t/Y_t$  is primary deficit a constant ratio of GDP, the overall public deficit ratio is not constant.

The sustainable primary surplus, which can be presented as

$$\left| -b \left( \frac{1+g}{g-r} \right) \right| > |D_0/Y_0| \quad (4)$$

Sustainable primary surplus, which can be presented as

$$-B_t/Y_t = (r_t - g_t) D_{t-1}/Y_t \quad (5)$$

Although this study did not calculate, but can measure the long-term tax gaps (Blanchard, 1990) and the sustainable conventional public balance needs alternative indicator, which sustainable budget deficit (GOVBt) is derived from equation (5) and equals the growth rate multiplied by the debt ratio:

$$-GOVB_t/Y_t = (r_t - g_t) D_{t-1}/Y_t - r D_{t-1}/Y_t = -g D_{t-1}/Y_t \quad (6)$$

As alternative the medium-term tax gap ( $t^*n - t$ ) can be taken, where the real interest rate, real economic growth rate and the projected path of no-interest expenditure are taken as given. In this respect, the required tax rate necessary to stabilize the debt/GDP ratio is as follows (Blanchard, 1990):

$$t_t^* = \sum (\text{exp} + \text{trf})/n + (r - g) D_0/Y_0 \quad (7)$$

where exp, trf and n state for government expenditure, transfers (both as a ratio to GDP), and the numbers of years over which govexp and trf are incurred, respectively. However, equation (7) holds if the values of  $n$  and  $(r - g)$  are not large.

#### 4. Data and results

First, we estimate public finance sustainability for V4 economies, Czech Republic (CZE), Hungary (HUN), Poland (POL), and Slovakia (SVK). For short-term examination for the chosen three years: 2004, 2009, and 2014 for medium-term used the average of 5 years (2000–2004, 2005–2009, 2010–2014). Source all of data were from the AMECO (2016) database. Examination was built on the following key variables:

- the equilibrium level of public debt (D/Y) with nominal data, alternatively, it is assumed for all sampled economies that governments are comfortable tolerating a debt ratio of 60 percent (D/Y\*);
- for short-term used the nominal interest rate (i) and nominal ( $g_n$ ) growth;
- for medium-term used the real interest rate (r) and public debt (D/Y) and growth rate of real GDP (g).

The results of examination summarize below (Table 1 and Table 2).

*Table 1* Short-term fiscal sustainability in V4 countries, 2004, 2009, 2014 (Percentage)

				Calculated (short-term) primary public balance $((i-g_n)/(1+g_n))*(D/Y)$				
	Public Debt (D/Y)	Growth rate of nominal GDP ( $g_n$ )	Nominal interest rate (i)	Actual public debt assumption	Targeted public debt assumption (60%)	Actual primary public balance (-b)	Diff. (actual-calculated (actual public debt assumption))	Diff. (actual-calculated (targeted public debt assumption))
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>2004</i>								
CZE	28.5	9.2	4.8	-1.1	-2.4	-1.6	-0.5	0.7
HUN	58.5	10.2	8.2	-1.1	-1.1	-2.0	-0.9	-0.9
POL	45.3	9.6	6.9	-1.1	-1.5	-2.4	-1.3	-0.9
SVK	40.6	11.3	5.0	-2.3	-3.4	-0.2	2.1	3.2
<i>2009</i>								
CZE	34.1	-2.3	4.8	2.5	4.4	-4.3	-6.8	-8.7
HUN	78.0	-2.9	9.1	9.6	7.4	-0.1	-9.7	-7.5
POL	49.8	6.6	6.1	-0.2	-0.3	-4.8	-4.6	-4.6
SVK	36.0	-6.6	4.7	4.4	7.3	-6.4	-10.8	-13.7
<i>2014</i>								
CZE	42.7	4.5	1.6	-1.2	-1.7	-0.6	0.6	1.1
HUN	76.2	7.0	4.8	-1.6	-1.2	1.5	3.1	2.7
POL	50.4	3.8	3.5	-0.1	-0.2	-1.4	-1.3	-1.2
SVK	53.5	2.3	2.1	-0.1	-0.2	-0.9	-0.8	-0.8

Source: own construction

In Table 1, the first three columns (1-3) show the relevant magnitudes (public debt/GDP ratio, nominal rate of growth, and nominal interest rate for V4) for the calculation of sustainable level of primary public balance. Thus, column 4 and 5 show the computation of equation (2). Columns 7 and 8 show the gap between the corresponding calculated (columns 4 and 5) and actual primary fiscal balance (column 6). Since each year's deficit goes to increase the outstanding public debt, the higher is the (positive) gap between actual fiscal deficit and hypothetical fiscal deficit, the higher the speed at which the public debt decreases (Aristovnik – Berčič 2007).

In 2004 actual and calculated sustainable fiscal levels seem to be the same in Hungary and Poland. On the other hand, if we take into considerations the targeted public debt (60 percent of GDP), the calculated (permitted) average fiscal deficit is relatively higher and the gap between the actual and the calculated deficit amounts to 0,9 percentage points in Poland and Hungary, but we can see that Czech Republic's and Slovakia's results in actual primary public balance is lower than targeted. The short-term fiscal policy stances of Hungary and Poland seem to be unsustainable.

In 2009, one year after the global financial crises, nominal (and real) GDP growth of V4 became negative, except for Poland, because it has a large domestic market. If we show real GDP growth rate data in Poland, it is increasing with 2.6% (AMECO 2016). Actual and the calculated public debt difference is high and the message that the countries engaged in unsustainable fiscal policies, but we expected similar outcome. If we show time series of real and nominal GDP growth, 2009 was the worst year.

In 2014, five years after the global financial crises, nominal (and real too) GDP growth of V4 became positive. Public debt was high in Hungary, but the threshold (60 percent of GDP) was not crossed by the Czech Republic, Poland and Slovakia. In this year the short-term fiscal policy stances of Poland and Slovakia seem to be unsustainable.

Table 2 shows results of medium term. In Table 2, first three columns (1-3) show the relevant magnitudes (public debt/GDP ratio, real rate of growth, and real interest rate for V4) for the calculation of sustainable level of primary public balance (Columns 4-7). Column 8 show the public debt forecast after five years and we could be in comparison with real data Column 9 shows real public debt after five years. And column 10 is shows public debt calculations by Aristovnik – Berčič (2007).

Table 2 Medium-term fiscal sustainability in V4 countries, 2000-2014 (Percentage)

	Public Debt (D/Y)	Growth rate of real GDP (g)	Real interest rate (r)	Calculated (medium-term) primary public balance $((r-g)/(1+g))*(D/Y)$		Actual primary public balance	Diff. (actual-calc. (actual public debt assumption))	Public debt (D/Y) after 5 years calc.	Public debt (D/Y) after 5 years real	Public debt (D/Y) after 5 years calc. by Aristovnik – Berčič (2007)
				Actual public debt assumption	Targeted public debt assumption					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>2000-2004</i>										
CZE	24.5	3.5	1.8	-0.4	-1.0	-3.8	-3.4	51.2	34.1	43.7
HUN	55.6	4.3	-0.2	-2.4	-2.6	-1.7	0.7	78.5	78.0	61.3
POL	41.5	3.3	5.1	0.7	1.1	-1.9	-2.6	59.1	49.8	55.1
SVK	44.6	3.9	0.7	-1.4	-1.9	-2.8	-1.4	45.4	36.0	52.8
<i>2005-2009</i>										
CZE	29.3	3.3	2.4	-0.3	-0.6	-1.7	-1.4	49.7	42.7	-
HUN	68.1	0.6	3.4	1.9	1.7	-1.8	-3.8	90.6	76.2	-
POL	46.9	4.7	2.4	-1.0	-1.3	-1.9	-0.8	57.3	50.4	-
SVK	31.8	5.2	2.7	-0.7	-1.4	-2.3	-1.6	52.5	53.5	-
<i>2010-2014</i>										
CZE	42.1	1.0	2.1	0.5	0.7	-1.5	-2.0	46.3	-	-
HUN	78.5	1.3	3.7	1.9	1.5	0.9	-1.0	78.0	-	-
POL	53.6	3.0	3.0	0.0	0.0	-2.2	-2.2	52.5	-	-
SVK	48.8	2.7	2.9	0.1	0.1	-2.5	-2.6	60.7	-	-

Source: own construction based on Aristovnik and Berčič (2007)

Based on 2000–2004 averages the five years forecasts of debt (Column 8) are higher than real data (Column 9) in Czech Republic, Slovakia and Poland. Estimated values by Aristovnik – Berčič (2007) are higher than real values, too. Own calculation debt similar real debt in Hungary, Aristovnik – Berčič (2007) underestimated public debt in Hungary.

Based on 2005–2009 averages the five years predictions of debt (Column 8) are underestimated real data (Column 9) in Czech Republic, Hungary and Poland. Estimation of Aristovnik – Berčič (2007) was finished in 2004 and not concerned this period so could not comprised results.

Based on 2009–2014 averages the five years estimations of debt (Column 8) are prognostic decrease in Poland, increase in Czech Republic and Slovakia. The deficit values became positive in this period. Results shows sustainable medium-term fiscal policy stance for V4.

## 5. Conclusion

In last years the financial crisis placed budgetary and fiscal policy sustainability on centre stage of researches, but defining of the fiscal sustainability is hard yet, because it depends on the horizon and many difference indicators. Researchers made and used more difficult models for examination of fiscal sustainability year by year, but newest studies according to the simplest models work best and give accurate forecasting results. This study took this advice and followed a simple intertemporal budget constraint and calculated primary gap in the selected years and periods and testing assumptions for short-term and analysed public debt at medium-term. Examination based on Poland and in comparison on three European countries: Czech Republic, Hungary and Slovakia, who namely together Visegrad Group.

Results of the examination shows that fiscal stance of V4 countries were varied. In short-term results Poland and Hungary seem to be unsustainable fiscal policy in 2004. In period 2000–2004, own calculation to debt similar real debt in Hungary, while Aristovnik and Berčič (2007) underestimated public debt in Hungary.

In 2009, the effects to the global financial crisis in Czech Republic, Hungary and Slovakia too seem to be unsustainable, but Poland kept fiscal sustainability, thanks to its large internal market. In 2014, the threshold of public debt went under 60% of GDP in V4 countries except Hungary, but the short-term fiscal policy stance of Poland and Slovakia seem to be unsustainable. Based on results of medium-term sustainable medium-term fiscal policy stance in examined countries but Poland has best positions in comparison others.

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