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CATCHING-UP PROCESS AND PUBLIC FINANCES OF CZECHIA AND HUNGARY COMPARED WITH AUSTRIA AND THE NETHERLANDS IN 2000-2018

ZMNIEJSZANIE LUKI GOSPODARCZEJ I SYTUACJA W DZIEDZINIE FINANSÓW PUBLICZNYCH CZECH I WĘGIER W PORÓWNANIU Z AUSTRIĄ I HOLANDIĄ W LATACH 2000-2018

DOI: 10.15611/pn.2019.10.05

JEL Classification: H30, H50, H62, H63, H68, O11

Summary: The subject of the paper is the analysis of economic growth and the situation of public finances in Czechia and Hungary in 2000-2018. The main research objective is to assess the effectiveness of the catching-up process, the budgetary policy and the situation in public finances in terms of the possibility to adjust economies to functioning in a common currency area and to orient budgetary policy towards stabilising economic growth while maintaining safe levels of public deficit and debt. The tools used in the analysis: deficit/surplus and public debt in relation to GDP, GDP growth rates. In correlation analysis, the Pearson correlation coefficient was estimated. The reference countries for Czechia and Hungary are the Netherlands and Austria. The results of the analysis: Czechia and Hungary have achieved the highest GDP growth rates, Czechia and the Netherlands are the countries with the highest stability of public finances. Conclusions: (1) Czech fiscal policy was effective in terms of its capacity to adjust the economy to function in the single currency area and efficient in stabilising economic growth, (2) Hungary's expansionary fiscal policy in 2001-2006 led to the collapse of public finances, but the plan to stabilise them was fulfilled.

Keywords: economic gap, deficit, public debt, effectiveness of budgetary policy.

Streszczenie: Przedmiotem artykułu jest analiza wzrostu gospodarczego i sytuacji w sferze finansów publicznych Czech i Węgier w latach 2000-2018. Podstawowy cel badawczy stanowi ocena efektywności procesu konwergencji i polityki budżetowej oraz stanu finansów publicznych z punktu widzenia możliwości dostosowania gospodarek Czech i Węgier do funkcjonowania we wspólnym obszarze walutowym oraz ukierunkowania polityki budżetowej na stabilizowanie wzrostu PKB przy równoczesnym zachowaniu bezpiecznych granic deficytu i długu publicznego. Zastosowano takie narzędzia analizy, jak: deficyt/nadwyżka

i dług publiczny w relacji do PKB oraz wskaźniki wzrostu PKB. W analizie korelacji wykorzystano współczynnik korelacji Pearsona. Rezultaty analizy są następujące: Czechy i Węgry osiągnęły najwyższe stopy wzrostu PKB, a największą stabilnością finansów publicznych charakteryzowały się Czechy i Holandia. Wnioski: (1) polityka fiskalna Czech była efektywna pod względem możliwości dostosowania gospodarki do funkcjonowania we wspólnym obszarze walutowym i stabilizowania wzrostu gospodarczego, (2) ekspansywna polityka fiskalna Węgier w latach 2001-2006 doprowadziła do załamania finansów publicznych, niemniej plan ich stabilizacji został zrealizowany.

Słowa kluczowe: luka gospodarcza, deficyt, dług publiczny, efektywność polityki budżetowej.

1. Introduction

The crucial criterion on which the limits of the common currency area were based was the condition of the public finances measured by the size of the budget deficit and public debt. If inflation was a problem only in the case of the Southern members of the Community, the state of the public finances was much more complex since many of the EU15 countries were non-compliant with the debt limit settled at 60% of GDP. This was an aftermath of the expansionary budgetary policy carried out in the 1970s and 1980s. In 1992-1998 the nominal budget deficit in prospective euro area countries still averaged around 5% of GDP, while in the year those countries actually qualified (1998) it declined to about 2% of GDP [European Commission 2004, p. 92]. The low average of the budget deficit was a result of balanced budgets and surpluses in the more developed EU countries, the so-called core countries, while it was negatively affected by deficits in Greece, Spain, Portugal and Italy (4.3% of GDP, 3.1%, 3.0% and 2.8%) [European Commission 2007, pp. 176-177]. The aforementioned countries, with the exception of Greece, implemented restrictive budgetary policies in order to limit expenses and allow for an increase in budgetary income, including the sale of public assets; many enterprises were privatized in Portugal [Mucha-Leszko, Kąkol 2011, p. 609]. The achievement of the budget deficit threshold was not a significant barrier to joining the EMU, but the level of public debt to GDP ratio was.

The subject of the analysis and evaluation carried out in the paper is the condition of public finances in Czechia and Hungary, countries remaining outside the euro area and not declaring publicly the intention to adopt the euro and give up their national currencies. The basis for the selection of the Central and Eastern European countries to evaluate their budgetary policy and state of public finances was their economic position within the region measured by GDP *per capita* based on purchasing power parity (EU = 100). In 1995, Czechia, Slovenia and Hungary were the top three of the ten CEE countries, see Figure 1 [European Commission 2018, p. 5]. In 2018, Czechia ranked 1st, Slovenia dropped to 2nd position after the 2008-2009 crisis, and Hungary held 7th place. Hungary's process of catching up with the more developed EU countries slowed down significantly after 2003.

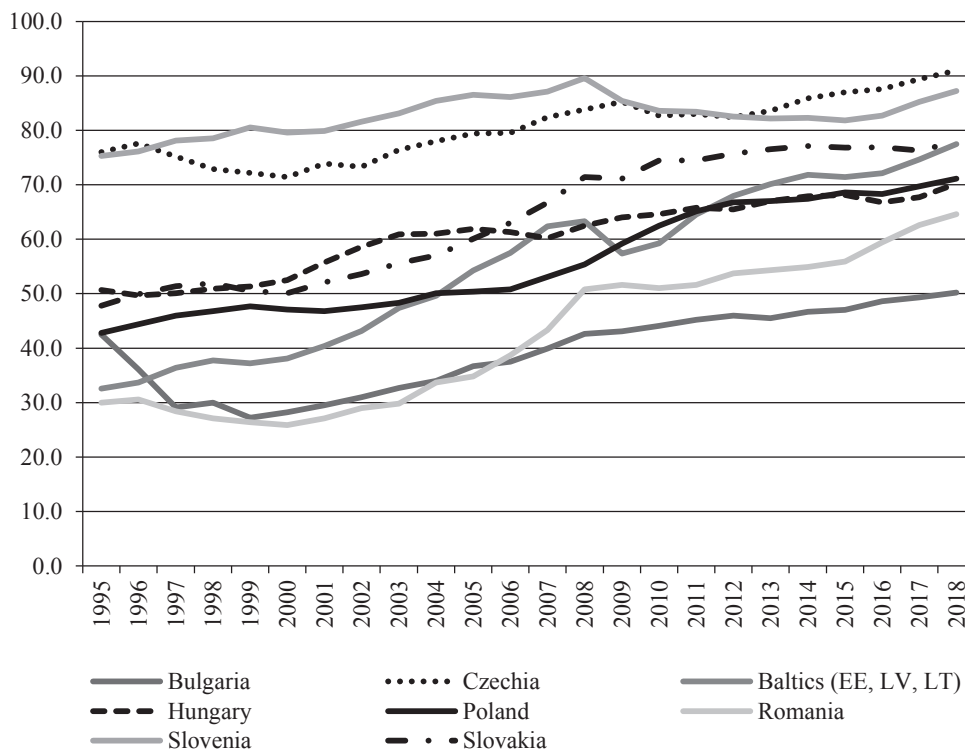


Fig. 1. GDP *per capita* based on purchasing power parity (% of EU average)

Source: [Eurostat 2019].

Before the 2008-2009 crisis the situation in the area of public finances in Hungary was among the worst in the European Union. In 2004-2013, Hungary remained under excessive deficit procedure [Orosz, Biederman 2015, p. 1]. The highest deficit of 9.3% of GDP was noted in 2006 (Table 4). The public debt continued to increase systematically until 2011 when it surpassed 80% of GDP, however, since 2012 a declining trend has persisted (Table 5).

The economic results and condition of the public finances in Czechia in 2000-2018 appear to be much better. High economic growth in 2000-2007 and 2014-2018 was conducive to the decline in the economic gap, which reached 80.1% of gross national income *per capita* (PPS, EA 19 = 100), and in the case of Hungary it was 62.9% of gross national income *per capita* (PPS, EA 19 = 100), Tables 1 and 2. The situation of public finances in Czechia was the best out of all the analysed countries since 2004.

The goal of the analysis carried out in the paper is to evaluate the budget balance and the public debt of Czechia and Hungary in 2000-2018 by comparing the budget parameters of these countries with Austria and the Netherlands – countries ranked

high in terms of gross national income *per capita* (Table 2) and outstanding in terms of economic efficiency measured by GDP per hour worked. The selected reference countries vary in terms of public debt burdens, the Netherlands with low public debt while Austria's debt to GDP ratio is high, but noticeably declining. The selection process also took into consideration the geographical location of the countries which is conducive to the development of economic linkages and interdependence, this pertained in particular to Austria and the CEE countries. The timeframe of the analysis was 2000-2018 and was supplemented by the available short-term forecasts. Three sub-periods were used to analyse some of the data: 2000-2007, 2008-2013 and 2014-2018. The data were derived from the Eurostat, Ameco and IMF databases. The major research goal is to assess the efficiency of the budgetary policy and the condition of the public finances in Czechia and Hungary taking into consideration the potential possibility to adjust their economies to the functioning within the common currency area, directing the budgetary policy towards stabilizing economic growth and maintaining the safe levels of budget deficit and public debt at the same time.

2. Fiscal policy as a instrument of affecting the economy – theoretical introduction

The views on the efficiency of the fiscal policy measures in terms of affecting economic growth and employment evolved with the development of economic theories. The discussion was focused around the discrepancies between the representatives of two economic schools: Keynesian and monetarist. The creators of those schools, J.M. Keynes (1883-1946) and M. Friedman (1912-2006), varied significantly in terms of the role of the state in the economy, and restoring the economic balance in particular. One of the major proposals of J.M. Keynes [Keynes 2011] and his proponents was the necessity to take up economic activity by the state, as managing demand using budgetary policy offers better results in terms of stabilizing the economy compared with the monetary policy instruments. J.M. Keynes rejected one of the core rules of the classical economy – the balanced budget rule. Keynes' views on the use of budgetary policy to affect the economy were shared by the renowned American economist Alvin H. Hansen (1887-1975), the views on infrastructural expenditure in particular. However, unlike Keynes, he considered fiscal policy an efficient instrument of regulating the level of consumption [Mucha-Leszko 2016, p. 438]. On the other hand, Hansen was as sceptical as Keynes about the effectiveness of monetary policy as an instrument of boosting investment. He believed that achieved and expected profit margin was crucial [Taylor 2013].

The prevalence of Keynesianism as the basis for economic policy until the mid-1970s contributed to the use of an expansionary fiscal policy, and increases in the budget deficit and public debt. The energy crisis revealed the weaknesses of the demand economics in terms of combating cost inflation and, as a result, the

monetarists gained the advantage in interpreting the economic phenomena and preparing recommendations for economic policy. Initially, they claimed that monetary policy has a crucial impact on the fluctuations in the economic cycle. Friedman was more moderate in his views and had a different opinion on the short-term and long-term impact of monetary policy on economic results and prices. He believed the impact was more important in the short term. Nevertheless, monetarists were much more critical on the role of fiscal policy, and negated its positive impact on the economy pointing to the two effects: crowding out and delay.

Just like the monetarists, the representatives of the new classical economics, such as R. Lucas, T. Sargent and N. Wallace [Lucas 1972, pp. 103-124; Sargent 1973, pp. 429-479; Sargent, Wallace 1976, pp. 169-183], were also against the Keynesian economics of demand. Their main assumption was the thesis on the rationality of economic entities' expectations. This means that their expectations on market behaviour are correct and based on the valid economic model [Kowalski 1987, pp. 173-187]. The aftermath of this assumption is considering the fiscal policy ineffective since rational economic entities are aware that under conditions of the growing debt, the government needs to increase taxes. Hence economic entities will react by decreasing expenditure and increasing savings and as a result, the total amount of expenditure in the economy will remain unchanged, and the only change will pertain to their structure – the private spending will be pushed out by the public spending (neo-Ricardian theorem) [Barro 1974, pp. 1095-1117].

The increased popularity of views connected to the orthodox classical economic assumptions contributed to the growing activity of economists believing that fiscal policy is an important tool for stabilizing the economy. They constitute the so-called 'new Keynesian school' which includes N.G. Mankiw, A. Blinder, O. Blanchard and J. Taylor. Generally speaking, the discussion between the post-Keynesian and neo-Keynesian economists with the representatives of the new classical economy leads to the rapprochement of the views on the ways to restore economic balance and the role of macroeconomic policy. The new Keynesian school believes that using the instruments of fiscal policy is justified only when there is an economic disequilibrium and the monetary policy tools turned out to be ineffective [Taylor 2000, pp. 21-26]. They also accept the thesis that the economy possesses its internal mechanisms of obtaining the balance, but only in the long term, while neo-classical economists argue that is also possible in the short term [Próchnicki 2011, pp. 67-89]. Representatives of both schools differ in the evaluation of pushing out the capital from the private to the public sector. Neo-Keynesians believe that it does not need to eliminate positive effects of public spending, however, this is dependent upon the size of the increase in expenditure. If it is high and results in growing public debt, the behaviour of economic entities confirms the views of new classical economists that a decrease in spending and an increase in savings will occur [Taylor 2000, pp. 21-26].

The contemporary debate focuses on the means of combining the instruments of fiscal and monetary policy, the efficiency of the budgetary policy based on the way it is conducted and the instruments used. Since the last crisis, in particular, it concentrates on the more efficient and optimal budgetary rules that would constitute thresholds limiting the deficit and public debt, but on the other hand, would allow for the support of economic growth during the depression. Intense discussion on the issue has been taking place in the European Union, both in the institutions as well as literature. The debt crisis resulted in the majority of the member countries implementing restrictive programs of consolidating public finances, based mainly on the limiting of public expenditure, which pertained to the public investment spending as well (to a varying degree in individual countries). As a consequence of this, the economic stagnation persisted and GDP growth in all the EU countries appeared as late as 2014. Therefore the authors of papers on the budgetary policy in the euro area agree that a new approach is necessary directed at supporting public investments. The subjects of research include various types of public expenditure and their strength in affecting the GDP growth. The Golden Rule of public investment is proposed, which is widely accepted in traditional literature, that would allow for the financing of the net public investment using a budget deficit. Such investment, mainly infrastructural, would stimulate economic growth [Truger 2015, p. 10; Menguy 2015; Blanchard, Giavazzi 2004; Creel, Saraceno 2010]. In the European Union, the Golden Rule was applied in only in two countries, the United Kingdom and Germany. In the UK it was implemented in 1997-2008 and it meant balancing the current budget within the timeframe of the economic cycle. Incurring debt was allowed only for financing public investment, while the remaining expenditure had to be financed by taxes or other income and the threshold of allowed public debt was 40% of GDP [Sawyer 2011, p. 14]. The theoretical literature and empirical analysis on the advantages and drawbacks of the Golden Rule reveal discrepancies in the views and the variety of results of its application in various countries. The subject of the analysis carried out in the paper is economic growth and the situation in the area of public finance in Czechia, Hungary as well as Austria and the Netherlands, taking into account the public investment.

3. Economic growth in Czechia, Hungary, Austria and the Netherlands

The eurozone has been an area of great diversity of economic dynamics in the periods of good economic conditions, as well as in the years of slower GDP growth and recession. In Table 1, the average GDP growth rates in the analysed group of countries and the euro area (19) in 2000-2018 as well as the forecasts for 2019-2024 are presented. The data (Table 1) show that over the whole research period 2000-2018 the highest average annual GDP growth rate occurred in Czechia (2.89%). It was the

result of high economic growth in the pre-crisis (2000-2007) and post-crisis (2014-2018) years. In the years of peak economic growth (2004-2007), Czechia achieved GDP growth rates ranging from 4.9% to 6.9% (Eurostat). The recession in 2009 was quite deep, with a GDP decline in Czechia higher by 0.3 pp than in the euro area (19), and the second wave of recession occurred in 2012-2013. Therefore, the average GDP growth rate in 2008-2013 was almost zero. The recovery, which has been sustained throughout the EU since 2014, was significantly higher in Czechia than the average in the euro area and GDP growth forecasts for 2019-2024 are better. They are 1.18 pp higher than the euro area average, 1.02 pp higher than in the Netherlands and 0.97 pp higher than in Austria.

Hungary had an average annual GDP growth rate 0.46 pp lower than Czechia in 2000-2018, but the economic cycle in the sub-periods was different compared to Czechia and even more in comparison to Austria and the Netherlands. Firstly, the high economic growth in Hungary was maintained in 2000-2006, without a decrease in the GDP growth rate during the economic slowdown in the EU in 2001-2003, caused by the recession in the United States. The decline in the GDP growth rate in Hungary started earlier than in the other analysed countries, already in 2007. In Hungary, both waves of recession (2009 and 2012) were the deepest among analysed countries, as evidenced by an average GDP decline rate of 0.47% between 2008 and 2013 (Table 1). The large economic downturn was caused by a drop in domestic demand (investment and consumer demand). In 2008-2012, the average annual decline in investment was 4.3% and in private consumption 2.4% [European Commission 2018, p. 7]. The post-crisis economic recovery in Hungary was even stronger than in Czechia and the forecasts were comparable (Table 1).

Table 1. Average growth of GDP in 2000-2018 and forecast 2018/2019-2024 (constant prices, in %)

Country/years	2000-2018	2000-2007	2008-2013	2014-2018	2019-2024
Czechia	2.89	4.55	0.12	3.56	2.60
Hungary	2.43	3.75	-0.47	3.80	2.55
Austria	1.66	2.43	0.52	1.82	1.63
Netherlands	1.55	2.28	0.05	2.20	1.58
Euro area (19)	1.38	2.24	-0.23	1.94	1.42

Source: own calculations based on [International Monetary Fund 2019].

Average long-term GDP growth rates in Austria and the Netherlands were almost the same: 1.66% and 1.55% respectively and slightly higher than in the euro area, by about 0.3 and 0.2 pp, whereas average GDP growth rates in the sub-periods were slightly varied in favour of Austria in 2000-2007 and significantly varied in the crisis years of 2008-2013. Nevertheless, after the second wave of recession, a more sharp recovery took place in the Netherlands, and since 2016 GDP growth rates have been similar (Eurostat). The Austrian economy was affected earliest by the economic

recession in 2001 in the United States, as the slowdown in economic growth took place already in the same year. In the Netherlands, the decline in the GDP growth rate occurred one year later and lasted for two years (GDP growth was at the edge of recession). The impact of the US crisis on European economies depended on the degree of trade and investment relations. In Czechia, there was a decline in economic dynamics in 2001-2002, but the GDP growth rates in relation to the average of the euro area were significantly higher. In Hungary, the GDP growth rates in the whole period 2000-2006 were high (Eurostat).

Considering the development of economic growth rates in the analysed countries and the scale of their decline in 2008-2013, it should be stressed that only Hungary suffered large losses in GDP growth during the crisis. Two waves of the crisis also occurred in Czechia and the Netherlands. The investment fall significantly influenced the economic growth in 2009-2013 in all four countries. The biggest fall occurred in the Netherlands 4.14% (average in 2009-2013), the Czech Republic 2.69%, Hungary 2.44% and a slight decrease in Austria of 0.13% [Mucha-Leszko, Twarowska 2018, p. 1058]. Deterioration of economic growth had an impact on the budgetary situation and public debt.

The group of analysed countries includes two of the most developed countries in the EU also belonging to the euro area, i.e. Austria and the Netherlands, while in the pre-accession period Czechia and Hungary had the smallest economic gap among the CEE countries in relation to the EU average, namely Austria and the Netherlands (Table 2 and Figure 1), hence Czechia and Hungary belong to the group of catching-up countries.

Table 2. Gross national income at current prices per head of population in 2000-2018 and forecast 2019-2020 (PPS, EA 19 = 100, selected years)

Year	2000	...	2004	2007	2009	2010	2014	2018	2019	2020
Czechia	62.5		67.9	70.6	72.8	70.7	74.8	80.1	81.2	82.0
Hungary	44.6		52.7	51.5	56.2	56.9	60.8	62.9	64.8	65.9
Netherlands	127.8		123.3	127.0	125.8	125.1	122.1	121.6	121.3	120.7
Austria	114.7		115.5	113.9	116.7	117.4	121.5	118.8	118.9	118.7

Source: own calculations based on [Ameco 2019].

In 2000, gross national income *per capita* at current prices (PPS, EA 19 = 100) in the Netherlands was 127.8%, in Austria 114.7%, in Czechia 62.5% and in Hungary 44.6%. In the last year before the crisis (2007), the indicators describing the position of the Netherlands and Austria in relation to EA 19 = 100 decreased slightly, while Czechia and Hungary significantly improved their position to 70.6% and 51.5% respectively. Nevertheless, the process of reducing the economic gap in Hungary stopped in the year of EU accession (2004), and the pace of convergence in subsequent years was very slow. GNI *per capita* in relation to EA 19 = 100 increased to 56.2%

in 2009 and 62.9% in 2018. In the case of Czechia, the process of reducing the economic gap stopped during the 2008-2009 crisis and lasted until 2013, as there was a second wave of recession in 2012-2013. Since 2014 the Czech economy has entered a phase of sustained recovery and there is a real improvement in the country's economic position. The forecasts for 2019-2020 are also positive. In contrast to Czechia, Hungary did not achieve economic progress after the EU accession, which would indicate that the economy is ready for the adoption of the single currency. Austria and the Netherlands are economies with similar levels of development and prosperity, although Austria's economic position has improved and the Netherlands' position has declined (Table 2).

In light of the discussion reflected in the literature of the last decade, which pointed to the effects of the post-crisis consolidation of public finances, it may be interesting to ask a question about the amount of public investment expenditure in the euro area and the analysed countries. The data presented in Table 3 show a downward trend in investment expenditure as a share of GDP in the euro area in 2010-2016. In 2017, they were 1 pp lower compared to 2009 and accounted for 2.64% of GDP. In Czechia the level of public investment is high, but it markedly decreased in 2010-2013 and, after a slight increase in 2014-2015 dropped again significantly. In 2017, public investment was 2.64 pp lower than in 2007 but in 2013-

Table 3. Government investment share of GDP in 2000-2017 (in %)

Country	Euro area (19)	Czechia	Hungary	Netherlands	Austria
2000	3.15	4.64	3.55	3.75	2.66
2001	3.17	4.19	3.91	3.89	2.42
2002	3.07	4.14	5.12	4.18	2.62
2003	3.23	7.73	3.77	4.24	2.48
2004	3.16	5.05	3.79	3.93	2.4
2005	3.15	5.23	4.16	3.74	2.93
2006	3.21	5.2	5.13	3.92	2.87
2007	3.23	4.75	4.24	3.83	2.98
2008	3.34	5.27	3.2	3.95	3.24
2009	3.65	6.03	3.43	4.32	3.37
2010	3.41	5.11	3.66	4.17	3.25
2011	3.13	4.49	3.34	4.09	3.03
2012	2.93	4.17	3.72	3.78	2.94
2013	2.83	3.72	4.37	3.68	3.04
2014	2.71	4.13	5.34	3.5	2.96
2015	2.7	5.14	6.56	3.56	2.98
2016	2.58	3.26	3.09	3.49	2.98
2017	2.64	3.39	4.52	3.44	3.08

Source: [Eurostat 2019].

-2017 the level of investment was high, except for a large decrease in 2016. In the Netherlands, the level of public investment in relation to GDP declined from 2010 to 2017, but the scale of the decrease was not large and gradual. The only country where the fall in public investment after the recession in 2009 was small and investment stabilised between 2.94 and 3.08% of GDP in 2011-2017 was Austria.

To sum up, public investment expenditure decreased significantly in the euro area, Czechia, the Netherlands and Hungary, while it declined only slightly in Austria. Comparing the decrease in the level of public investment in the mentioned countries with their GDP growth rates in 2008-2013, it can be noted that GDP growth rates and indicators illustrating the size of public investment in relation to GDP were similar (Tables 1 and 3). Low, almost zero or negative GDP growth rates were observed in Czechia, Hungary, the Netherlands and the euro area. Against this background, Austria performed well with an average GDP growth rate of 0.51% (2008-2013), while public investment in 2008-2017 was higher or at the same level as in 2007.

4. Public finance developments in Czechia and Hungary versus Austria and the Netherlands

Table 4 shows the budgetary balance to GDP ratios in the euro area, Czechia, Hungary, Austria and the Netherlands in 2000-2019. The budgetary situation for the entire single currency area after its creation was close to balanced, with a deficit of 0.5% of GDP in 2000. Nevertheless, the fall in economic growth in 2001 and the fiscal policy aimed at fulfilling the Treaty budgetary criteria for EMU in the second half of the 1990s made it necessary to increase budgetary expenditure. In 2001, the relationship between budget revenue and expenditure changed significantly, as shown in Figure 2.

The budget deficit in the euro area was increasing until 2003, when it exceeded the Treaty criterion by 0.2 pp. With the economic recovery in 2004, the average deficit in the euro area started to decrease and its level in relation to GDP dropped to 0.7%, which was comparable to its level in 2000 (Table 4).

Since 2008 the average deficit in the euro area kept rising, reaching an extremely high level in 2009 and 2010 (6.2 % of GDP in both years). The downward trend started in 2011, but the deficit did not fall below 3% of GDP until 2014 when the period of economic stagnation in the European Union and the euro area ended. In 2018 the budget deficit in the euro area fell to 0.5% of GDP, which was the same level as in 2007. However, theoreticians and analysts suggest that fiscal policy should be made less restrictive because it limits economic growth.

In the analysed group of countries, the budgetary situation differed between 2000-2007 and 2008-2013, while since the economic recovery in 2014 there has been a significant improvement in budgetary balance, with the Netherlands and Czechia having a budget surplus since 2016. Before the crisis, Hungary was a special

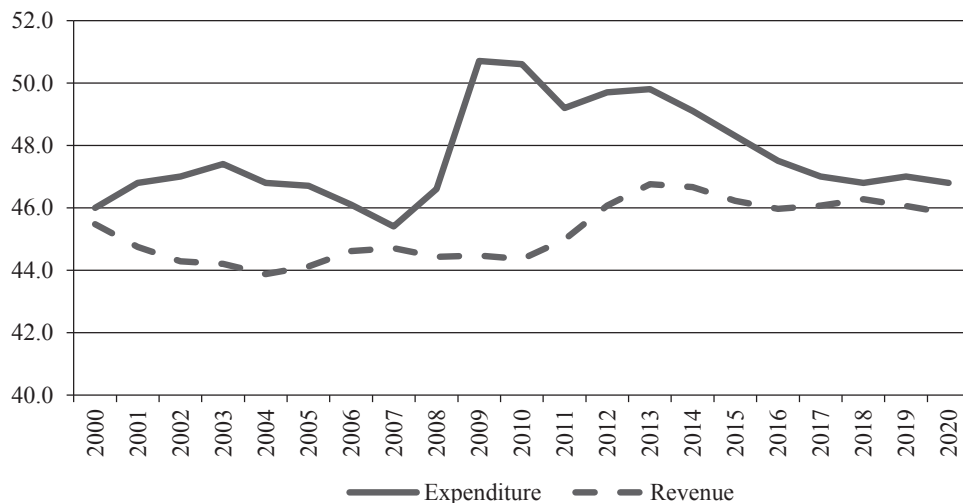


Fig. 2. Total revenue and total expenditure (general government) in the euro area in 2000-2018 and forecast 2019-2020 (% of GDP)

Source: own calculations based on [Ameco 2019].

Table 4. Net lending (+) or net borrowing (-) in 2000-2018 and forecast 2019-2020 (% of GDP)

Year	Euro area	Czechia	Hungary	Netherlands	Austria
2000	-0.5	-3.6	-3.0	1.2	-2.4
2001	-2.0	-5.5	-4.1	-0.5	-0.7
2002	-2.7	-6.4	-8.8	-2.1	-1.4
2003	-3.2	-6.9	-7.1	-3.1	-1.8
2004	-3.0	-2.4	-6.5	-1.8	-4.8
2005	-2.6	-3.0	-7.8	-0.4	-2.5
2006	-1.5	-2.2	-9.3	0.1	-2.5
2007	-0.7	-0.7	-5.0	-0.1	-1.4
2008	-2.2	-2.0	-3.7	0.2	-1.5
2009	-6.2	-5.5	-4.5	-5.1	-5.3
2010	-6.2	-4.2	-4.5	-5.2	-4.4
2011	-4.2	-2.7	-5.4	-4.4	-2.6
2012	-3.7	-3.9	-2.4	-3.9	-2.2
2013	-3.1	-1.2	-2.6	-2.9	-2.0
2014	-2.5	-2.1	-2.6	-2.2	-2.7
2015	-2.0	-0.6	-1.9	-2.0	-1.0
2016	-1.6	0.7	-1.6	0.0	-1.6
2017	-1.0	1.6	-2.2	1.2	-0.8
2018	-0.5	0.9	-2.2	1.5	0.1
2019	-0.9	0.2	-1.8	1.4	0.3
2020	-0.9	-0.2	-1.6	0.8	0.2

Source: own calculations based on [Ameco 2019].

case because its deficit was among the highest in the European Union. Officially, the increase in the deficit and debt was the responsibility of the left-wing governments in 2002-2010. The highest deficit in Hungary was recorded in 2002-2006 and the public debt increased steadily from 2002 to 2011, when it reached 80.5% of GDP (Tables 4 and 5 and Figure 6). The imposition of the excessive deficit procedure on Hungary in 2004 obliged the authorities to prepare and implement a plan to radically improve the state of public finances. The challenge was difficult due to the slowdown in GDP growth in 2006-2007 to 0.5% and 0.9%. The recession in 2009 was deeper than average in the euro area by more than 2 pp. The programme to reduce the government deficit and debt was implemented under extremely unfavourable conditions and instead of a counter-cyclical fiscal policy, Hungary had to reduce expenditure in order to comply with the excessive deficit procedure. After a significant reduction of the budget deficit to 3.7% of GDP in 2008, it increased in 2009-2011,

Table 5. General government consolidated gross debt in 2000-2018 and forecast 2019-2020 (% of GDP)

Year	Euro area	Czechia	Hungary	Netherlands	Austria
2000	68.2	17.0	55.3	52.1	66.1
2001	67.1	22.8	51.9	49.5	66.7
2002	67.0	25.9	55.3	48.8	66.7
2003	68.2	28.3	57.9	50.0	65.9
2004	68.5	28.5	58.7	50.3	65.2
2005	69.3	27.9	60.5	49.8	68.6
2006	67.4	27.7	64.5	45.2	67.3
2007	65.0	27.5	65.5	43.0	65.0
2008	68.7	28.3	71.6	54.7	68.7
2009	79.2	33.6	77.8	56.8	79.9
2010	85.0	37.4	80.2	59.3	82.7
2011	87.6	39.8	80.5	61.7	82.4
2012	91.8	44.5	78.4	66.2	81.9
2013	94.1	44.9	77.2	67.7	81.3
2014	94.4	42.2	76.7	67.9	84.0
2015	92.3	40.0	76.7	64.6	84.7
2016	91.4	36.8	76.0	61.9	83.0
2017	89.1	34.7	73.4	57.0	78.2
2018	87.1	32.7	70.8	52.4	73.8
2019	85.8	31.7	69.2	49.1	69.7
2020	84.3	31.1	67.7	46.7	66.8

Source: own calculations based on [Ameco 2019].

but since 2012 it has stabilised below 3% of GDP (Table 4). The level of public debt was also steadily decreasing, which was supported by relatively high economic growth (Table 1 and Figure 6). The analysis of the public finances in Hungary leads to a positive assessment of the stability plan. Although Hungary does not have a budget surplus like Czechia and the Netherlands and has a higher deficit than Austria, it achieved a GDP growth rate of 4% in 2018 and has promising forecasts, which gives a chance to further improve its budget balance and reduce its public debt, which in 2018 was 1.5 pp lower than in Austria.

Austria is the second country in the analysed group that has high public debt which kept increasing between 2008 and 2015. This is mainly due to an increase in government expenditure during the crisis, which provided the basis for financing rescue packages for banks as well as supporting demand and employment through subsidies, tax cuts and infrastructure investment financing [Herman, Flecker 2012, pp. 125-126.]. Czechia and the Netherlands have balanced budgets and low public debt (32.7% and 52.4% of GDP), however the outstanding country in this group is Czechia, with a budget surplus since 2016 and the lowest public debt among the four countries. Czechia also gained an advantage over the other countries in terms of the rate of economic growth, with an average long-term (2000-2018) GDP growth rate of 2.89%, Hungary 2.43%, Austria 1.66% and the Netherlands 1.55%. The average growth rate in the euro area was 1.38%. The results of the analysis of public finances and economic growth rates are favourable for Czechia – it has stable public finances and significantly reduced the economic gap. Hungary has successfully recovered from the public finance crisis and the deep economic crisis and has maintained the

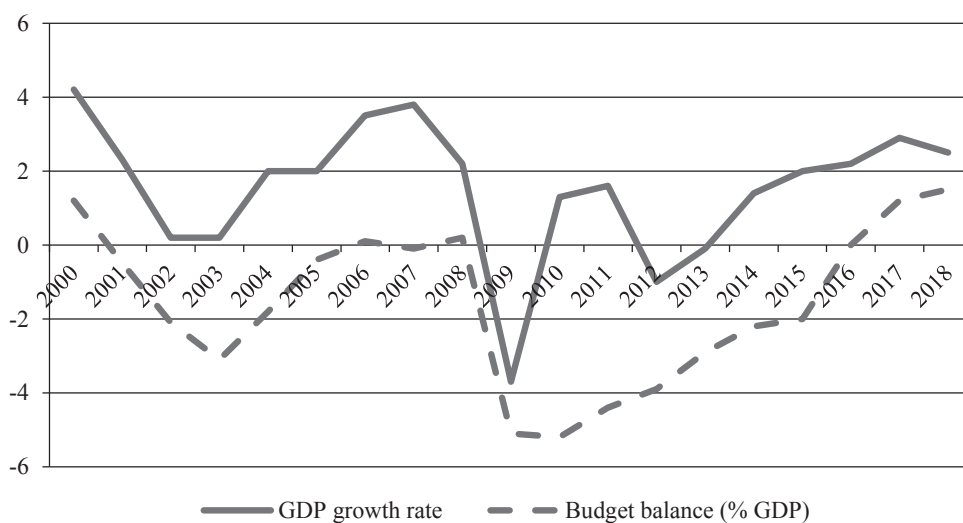


Fig. 3. Growth of GDP (in %) and net lending/borrowing (in % of GDP) in the Netherlands in 2000-2018

Source: own calculations based on [International Monetary Fund 2019].

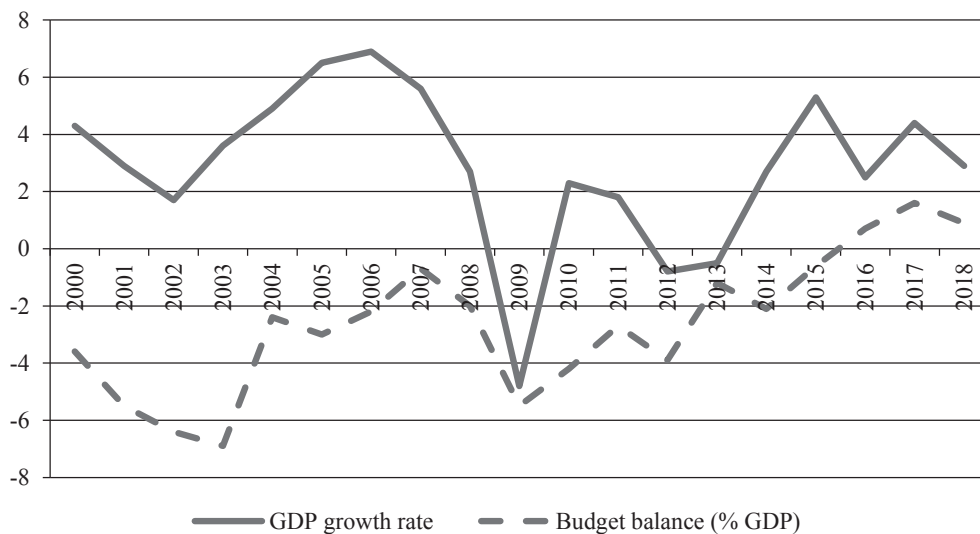


Fig. 4. GDP growth (in %) and net lending/borrowing (in % of GDP) in Czechia in 2000-2018

Source: own calculations based on [International Monetary Fund 2019].

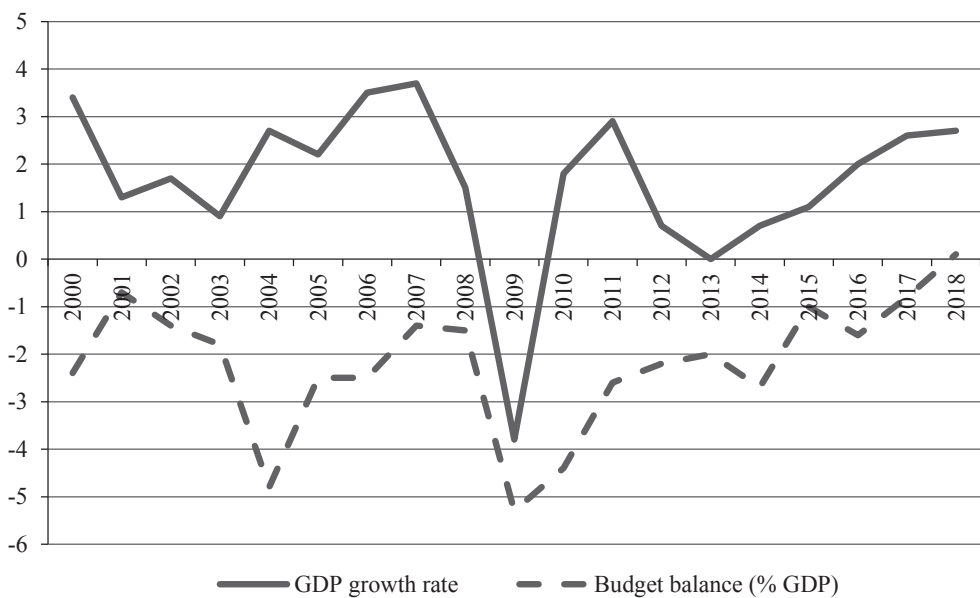


Fig. 5. GDP growth (in %) and net lending/borrowing (in % of GDP) in Austria in 2000-2018

Source: own calculations based on [International Monetary Fund 2019].

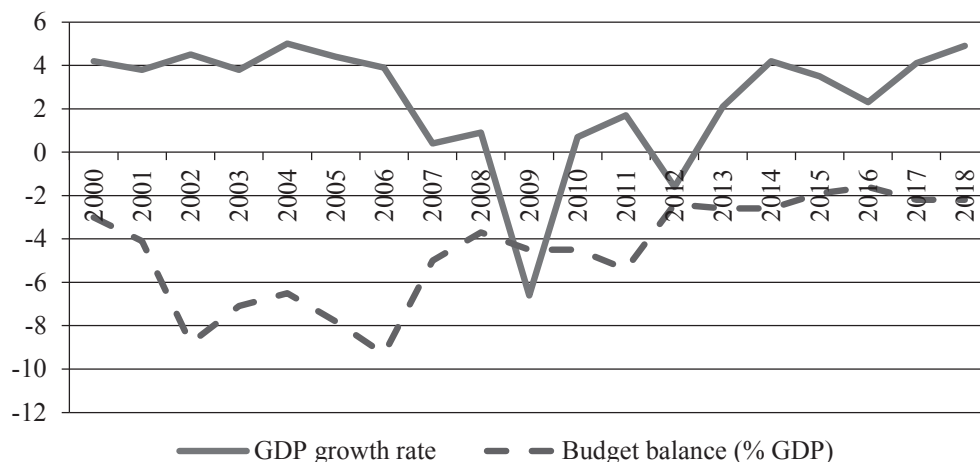


Fig. 6. GDP growth (in %) and net lending/borrowing (in % of GDP) in Hungary in 2000-2018

Source: own calculations based on [International Monetary Fund 2019].

Table 6. Pearson correlation coefficient between GDP growth (in %) and net lending/borrowing (in % of GDP)

Year	Austria	Czechia	Hungary	Netherlands
2000-2007	-0.33	0.80	-0.29	0.92
2008-2013	0.58	0.56	0.09	0.49
2014-2018	0.79	0.11	-0.79	0.88

Source: own calculations based on [International Monetary Fund 2019].

highest GDP growth rate in the analysed group of countries since 2013, but the results of the catching-up process are not satisfactory. The economic gap is large (gross national income *per capita* was 62.9% of the euro area average in 2018) (Table 2).

An interesting issue is the relationship between the rate of economic growth and the budget balance in relation to GDP. The Pearson correlation coefficients are presented in Table 6. In addition, Figures 3 to 6 show the GDP growth rates and budget balances of the four analysed countries, showing the direction and scale of changes in the examined indicators. The strong dependence of the budget balance on economic growth is shown by the correlation coefficients and Figure 3 for the Netherlands, except for the weaker dependence during the second wave of the crisis in 2012-2013 when the fiscal improvement programme was being continued. Correlation between the budget balance and GDP growth also occurred in Czechia, although it was weak in 2014-2018, regardless of economic growth developments, policies aimed at improving fiscal sustainability were implemented. In Austria,

the correlation coefficients and Figure 5 confirm the dependence of the budget balance on economic growth in 2014-2018 and weaker in 2008-2013, while in 2000-2007 the dependence was reversed due to the increase in budget expenditure in 2002-2004. The level of government expenditure at that time was strongly influenced by the welfare state policy in Austria. Hungary's fiscal policy can be divided into two periods: the expansionary policy in 2001-2006 and the stability-oriented fiscal policy since 2007. The correlation coefficients and Figure 6 thus indicate a lack of correlation between GDP growth and the level of the budget balance.

5. Conclusion

The analysis shows Czechia as the most successful catching-up country within the CEE economies group in the years 2000-2018 (Figure 1). In the research period, Czechia achieved the highest GDP growth in the analysed group of countries and reduced the economic gap with the EA19 by 17.6 pp. The economic growth forecasts for 2019-2024 are higher by 1.18 pp than the average for the EA19, by 1.02 pp than in the Netherlands and by 0.97 pp than in Austria. Maintaining such a high GDP growth rate is a prerequisite for achieving an even higher economic position on the EA and EU scale. The assets of the Czech economy are its budget balance and very low public debt (32.7% of GDP).

Hungary's long-term economic performance throughout 2000-2018 was comparable to that of Czechia, but with larger fluctuations in GDP growth rates and the largest losses in GDP during the crises (2008-2013). However, the biggest problem in the Hungarian economy was the destabilisation of public finances in 2001-2006 and the necessity to implement a restrictive fiscal policy during the years of the financial and economic crisis. Thus the depression was deeper than in Czechia, Austria and the Netherlands. The results of the public finance consolidation plan are good: the budget deficit is substantially below 3% of GDP and the public debt is comparable to that of Austria (70.8% of GDP). Good forecasts for economic growth provide opportunities to accelerate the process of reducing the economic gap against the average of the EA19 and the most developed EU countries.

Regarding the objective formulated in the introduction of the paper, it can be stated that Czechia's fiscal policy has been effective in terms of its capacity to adjust the economy to function within the common monetary area, and rational in terms of stabilising economic growth and maintaining safe deficit and debt levels. In the case of Hungary, the expansionary fiscal policy in 2001-2006 led to the collapse of public finances, but the plan to stabilise public finances has been realised and relatively high economic growth has been maintained since 2013, with a substantial improvement in the budget balance and a noticeable reduction in public debt. There has been significant progress in stabilising the economy.

Bibliography

- Ameco, 2019, *Macro-economic database*, European Commission's Directorate General for Economic and Financial Affairs, May 2019, http://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm (20.08.2019).
- Barro R., 1974, *Are government bonds net wealth?*, *Journal of Political Economy*, vol. 82.
- Blanchard O.J., Giavazzi F., 2004, *Improving the SGP through a proper accounting of public investment*, CEPR Discussion Paper, no. 4220.
- Creel J., Saraceno F., 2010, *European fiscal rules after the crisis*, *Journal of Innovation Economics & Management*, 2010/2, no 6.
- European Commission, 2004, *EMU After Five Years*, *European Economy*, Special Report, no.1.
- European Commission, 2007, *Statistical Annex of European Economy. Spring 2007*.
- European Commission, 2018, *Country Report Hungary 2018*, Brussels, 7.3.2018, SDW (2018) 215 final.
- Eurostat, 2019, *Database*, <https://ec.europa.eu/eurostat/data/database> (20.08.2019).
- Herman Ch., Flecker J., 2012, *The Austrian Model and the Financial and Economic Crisis*, [in:] S. Lehdorff (ed.), *A Triumph of Failed Ideas. European Models of Capitalism in the Crisis*, European Trade Union Institute, Brussels.
- International Monetary Fund, 2019, *World Economic Outlook Database*, April 2019, <https://www.imf.org> (20.08.2019).
- Keynes J.M., 2011, *Ogólna teoria zatrudnienia, procentu i pieniądza*, PWN, Warszawa.
- Kowalski T., 1987, *Nowa klasyczna makroekonomia a polityka stabilizacji gospodarczej w kapitalizmie*, *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, zeszyt 2.
- Lucas R., 1972, *Expectation and neutrality of money*, *Journal of Economic Theory*, vol. 4, no. 2.
- Menguy S., 2015, *The Golden Rule as controversial way to optimal public investment in a monetary union*, <https://gdrenice2015.sciencesconf.org/53339/document> (10.09.2019).
- Mucha-Leszko B., 2016, *Przyczyny słabego ożywienia koniunktury gospodarczej w strefie euro w świetle hipotezy o nowej sekularnej stagnacji*, *Research Papers of Wrocław University of Economics*, no. 449.
- Mucha-Leszko B., Kąkol M., 2011, *Portugalia w unii walutowej – problemy gospodarcze i kryzys finansów publicznych*, *Ekonomista*, no. 4.
- Mucha-Leszko B., Twarowska K., 2018, *Investment as a Determinant of the Sustained Economic Growth in the European Union after the Crisis 2008-2009*, *Proceedings of the 4th International Conference on European Integration*, 2nd part, 17-18 May, 2018, VŠB-Technical University of Ostrava, Czech Republic.
- Orosz A., Biedermann Z., 2015, *Public Finance Consolidation in Hungary*, *Visegrad Fund*, www.visegradfund.org.
- Próchnicki L., 2011, *Nowa szkoła keynesowska – teoretyczne i polityczne implikacje*, *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*, no. 19.
- Sargent T.J., 1973, *Rational expectations, the real rate of interest and the natural rate of unemployment*, *Brookings Papers on Economic Activity*, no. 2.
- Sargent T.J., Wallace N., 1976, *Rational expectations and the theory of economic policy*, *Journal of Monetary Economics*, vol. 2, no. 2.
- Sawyer M., 2011, *UK fiscal policy after the global financial crisis*, *Political Economy*, 30.
- Taylor J. B., 2000, *Reassessing discretionary fiscal policy*, *Journal of Economic Perspectives*, vol. 14, no. 3.
- Taylor T., 2013, *Secular Stagnation: Back to Alvin Hansen*, *Conversable Economist*, <http://conversableeconomist.blogspot.com/2013/12/secular-stagnation-back-to-alvin-hanson.html> (10.09.2019).
- Truger A., 2015, *Implementing the Golden Rule for Public Investment in Europe*, Working Paper – Reihe, DER AK Wien, 138.