Reassessment of the 'Optimum Currency Area' Theory in the European Union

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Abstract: A reassessment of the 'optimum currency area' in the European Union and its perspectives for the expansion in the modern economic conditions has been conducted in the research paper. Assessment of the optimum currency area has been made on the example of the countries from Central and Eastern Europe, which joined the Eurozone in recent years. The aim of the research paper was to compare the performance of the countries in the Eurozone with the performance of the countries with their single currencies. The research question was whether a single currency and centralized monetary policy can protect national economies from external shocks (balance of payments crises) or whether a single currency and independent monetary policy are a better option. It has helped to answer the question of whether an optimum currency area still exists in the European Union and whether it has potential for expansion and bringing benefits to future members. It has been proven that the Eurozone still remains an optimum currency area in the given borders with potential for further expansion.

Keywords: balance of payments, an optimum currency area, exchange rate, adjustment policy, international economy, fiscal policy, monetary policy

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1. Introduction

An optimum currency area has been implicitly defined by Robert Mundell (1961) as a currency area for which the costs of relinquishing the exchange rate as an internal instrument of adjustment are outweighed by the benefits of adopting a single currency or a fixed exchange rate regime (Ricci 1997, p. 5). According to Mundell, the different regions may achieve macroeconomic equilibrium, including the external equilibrium, via the implementation of a single currency within the borders of an optimum currency area and in the conditions of high mobility of factors of production and, especially, labor force. Periodic crises of the balance of payments have become an integral element of the international economy because of the fixed exchange rates and inflexible prices and wages (Mundell 1961, p. 657). The scientist believed that the existence of an optimum currency area with a single currency can prevent the occurrence of the balance of payments crises. A single central bank has more instruments and possibilities to conduct the most effective monetary policy to avoid the balance of payments crisis, and the mechanism of smoothing economic imbalances also is more effective with a single currency.

Implementation of a single currency, which must lead to the creation of an optimum currency area, brings the following benefits for the countriesmember. First of all, a higher degree of capital mobility and mobility of factors of production is reached. Secondly, bilateral trade between countries is boosted because of lower transaction costs. A lot of economists have shown that presence of the borders between countries lowers international trade by 30%. It happens even if there are no serious trade limitations. It is related to the fact of the existence of the different currencies in the countries (Alessina 2003, p. 307). Third of all, the exchange rate risks are minimized. It is also possible to talk about more stable and homogenous financial markets, fiscal discipline, getting access to broader centralized financing, etc. There are also the so-called benefits of commitment. When a country adopts a single currency, it is committed to following specific obligations, including fiscal and monetary discipline. Talking about the Eurozone, the Maastricht criteria should be mentioned. These criteria must be followed by a country, which wants to join the Eurozone. Following the criteria must improve a state's fiscal discipline, lower government debt and budget deficit,

and set smart goals of macroeconomic policy. It results in lower inflation, long-term interest rate, and steady economic growth.

Probably, the biggest disadvantage of a single currency area is the need to abandon an independent monetary policy and follow a common stabilization policy. On the one hand, a common stabilization policy may be more effective, at least, because of more available resources. On the other hand, single countries lose independence in their monetary policy. It limits a country's ability in reaching its own economic goals. The exchange rate cannot be used as an instrument of the adjustment policy, which had been typical for the countries in transition (Darvas 2019). For example, a country is not able to devaluate its national currency to reach a higher level of international competitiveness of its national economy. It may affect a country's economic development. This drawback often becomes the main obstacle for a country in its desire to join the currency union.

The currency unions can create disadvantages even for its most successful members. The absence of desire of separate countries to abandon their independent but sometimes inefficient monetary policies in the conditions of receiving central stabilization financing, in the same way, have led to the situation when macroeconomic imbalances of some countries are financed by the other ones. The more stable and rich countries of the union are often forced to finance failures in the economic policy of their less successful neighbors. The price to pay may be too high for their societies to support the existence and further expansion of the currency areas. This usually leads to political discussions about necessity and future of the currency area. The Eurozone, which is the most famous and the most successful currency union in the world, has faced such challenge in the recent past.

The efficiency of a single currency area must be evaluated from the point of view of economic benefits for its members. Macroeconomic indicators of the countries inside the area must be better than outside it. In other words, the benefits of the adoption a single currency must be higher than the price to pay in the form of abolishing an independent monetary policy. Special attention should be paid to the crises of the balance of payments and a national economy's ability to respond to external shocks. Membership in a currency area must prevent a country from the balance of payments crises or at least minimize its negative consequences for a national economy.

2. Macroeconomic Conditions in the CEE Countries

Robert Mundell believed that Western Europe is a region, where an optimum currency area can be created. This is the region, where all the countries have passed the long way of political integration. The region has high developed institutions, including regulative bodies, which can conduct effective single monetary and fiscal policies. These countries respond to an integral element of Mundell's optimum currency area – high mobility of factors of production, especially, the labor force (Swoboda 1999). Mundell's idea of an optimum currency area in the European Union has been realized in the form of the Eurozone, and it has already expanded further than the borders of Western Europe.

The European debt crisis of 2009 caused a start of discussions among the economists about the crisis of the Eurozone as an optimum currency area and perspectives for its future successful expansion. The crisis started when several Eurozone member states, including Greece, Portugal, Ireland, Spain and Cyprus, were unable to pay off or refinance their government debt. They required help of the third parties, including other Eurozone members, the European Central Bank, etc. The Eurozone crisis was caused by the balance of payments crisis. The crisis was worsened by the countries' inability to devaluate their national currencies. It doubts the foundations of an optimum currency area, where countries are forced to abandon an independent monetary policy and the exchange rate as an instrument of the adjustment policy. The crisis was also caused by the macroeconomic imbalances prior to the Eurozone membership. The countries with fiscal problems received an option to borrow money on low interest rates. As a result, their debt problems were only strengthened. These debt problems were redistributed to the whole Eurozone as a result (Amadeo 2022).

The crisis should be considered in two contexts. The first one is related to the potential inefficiency of a single monetary policy in helping the countries to avoid balance of payments crises. The second one is the fact that preconditions of the optimum currency area, including the Maastricht criteria, do not work. It leads to the imbalances inside the optimum currency area, when successful countries are forced to finance the mistakes of their less disciplined peers. Among the reasons for the socalled crisis, the following ones are mentioned: violation of fiscal discipline in separate countries; great sovereign debts in peripheral countries which have led to a resistant deficit of their current accounts; consequences of the global financial crisis of 2008, the current global pandemic and its economic outcomes. which may undermine foundations for the future successful expansion of the Euro area.

From the very beginning, the creation of the European Union had to be done in three stages. The first stage was the elimination of all the limitations on the free movement of capital between the countries. The main attention of the second stage had to be devoted to achieving economic convergence and the creation of preconditions for adoption of a single currency. Finally, the last stage was creation of an economic and monetary union and adoption of a single currency (European Central Bank). Traditionally, there have been two approaches to the currency union in the EU. The representatives of France desired the creation of the currency union as the first step before the establishment of the economic union. The experts from Germany wanted, first of all. economic convergence and harmonization, improvement of the economic conditions of the countries-member of the Union. They did not want to pay off other countries' debts and level the current account imbalances. Therefore, stable and rich national economies did not want to finance negative current account balances and government debts of the countries, which did not conduct economic reforms. The problem exists as an obstacle to the expansion of the monetary union nowadays.

Today, the European Union consists of 27 countries. The largest expansion of the EU took place in 2004 when 10 countries joined the Union, including Estonia, Lithuania, Latvia, Cyprus, Malta, Slovenia, Poland, Slovakia, Hungary, and the Czech Republic. Eight out of ten mentioned countries are the so-called countries of Central and Eastern Europe. The CEE countries are the past members of the socialist block with a planned economy, which have ended their transition to a market economy after joining the European Union. Thus, the process of moving to the EU was simultaneously the process of ending the transition from the planned socialist economy to the principles of a market economy. From the list of the countries of Central and Eastern Europe the seven ones have been selected for the analysis. These are the Baltic states - Latvia, Lithuania and Estonia, and countries of the so-called Visegrad Group – Poland, Hungary, Czech Republic, and the Slovak Republic. The period for the analysis starts from 1995. As a result, it is possible to compare the development of the countries before the EU or Eurozone and after joining these institutions. The macroeconomic indicators, which characterize the main macroeconomic areas of a national economy -

The ma	croeconomic indicato	Table 1 ors of the CEE countries
	Baltic states	
Indicator	For 25 years	As of 2019
The average pace of GDP growth, %	4,23	3,80
The average unemployment level, %	11,07	5,67
The average rate of inflation, %	5,32	2,47
The average GDP per capita, USD	12 205,00	18 708,47
The average current account balance (% to GDP)	-4,91	1,54
T	ne Visegrad group	
Indicator	For 25 years	As of 2019
The average pace of GDP growth, %	3,38	3,44
The average unemployment level, %	9,51	3,62
The average rate of inflation, %	5,06	2,77
The average GDP per capita, USD	14 340 ,83	20 059,78
The average current account balance (% to GDP)	-3,20	-0,67

the area of employment, production, prices, and

foreign economy area, have been selected.

Source: Calculated by the author, according to the World Bank Indicators. Available at https://data.worldbank.org/indicator

States Even though the Baltic have demonstrated a higher average pace of GDP growth, the overall economic situation in the countries of the Visegrad Group is better. The biggest problem for the Baltic States is a significantly higher level of unemployment and inflation rate than in the countries from the Visegrad Group. Both problems are caused by the transition period and hyperinflation in the past. The biggest negative impact on the countries' economic development in the recent decades has been made by the financial crisis of 1998, the global financial crisis of 2008, and the current world pandemic. Graph 1 demonstrates the influence of the crises of 1998 and 2008 on the Baltic States' GDP. The last crisis was more severe, and the Baltic states have not yet managed to reach the pre-crisis GDP rate of growth. The highest rates of growth of GDP were during 2000-2007 due to expecting entrance to the EU, foreign direct investments, and centralized support during the first years of membership in the



Figure 1. The GDP growth rates for the Baltic States, % Source: Calculated by the author, according to the World Bank Indicators.

Available at https://data.worldbank.org/indicator

The countries of the Visegrad Group have followed the pattern, demonstrated by the Baltic States. However, the negative economic consequences of the crises survived were less harsh. They were not seriously harmed by the financial crisis of 1998. Additionally, a decline of the GDP was not as severe as in the Baltic states after the crisis of 2008. The countries have not yet managed to reach the pre-crisis pace of economic growth. On the other hand, their existing average rates of economic growth are higher, than in Estonia, Lithuania, and Latvia. It is important to account since these countries are mainly members of the Eurozone. not



Figure 2. The GDP growth rates for the countries from the Visegrad Group, %

Source: Calculated by the author, according to the World Bank Indicators.

Available at https://data.worldbank.org/indicator

It appears that the Slovak Republic has gained the most immediately after the entrance to the European Union. The Slovak Republic has lost some pace of development at the very beginning of the transition to the market economy but has managed to catch up till 2003-2004. It had become possible due to the radical economic reforms including single rate of VAT; elimination of all the tax exclusions; double taxation was canceled; fixed income tax was implemented; elimination of all the tax preferences. Nowadays Slovakia produces the biggest number of automobile vehicles per person thanks to foreign direct investments. It is only one of the many pieces of evidence of the current successful economic development of this country (Aslund 2013, p. 180).

Hungary had the most open and market economy among all the countries of the Visegrad Group at the beginning of the transition. At the very beginning of 1990s, Hungary accumulated more than half of all the foreign direct investments to the countries of Central and Eastern Europe. Changes in political conjuncture have initiated changes in economic policy, which have seriously affected economic reforms and economic growth in the state. Between 2000 and 2012 cumulative economic growth of Hungary was 21% - significantly lower than the average pace in the Czech Republic, Poland Slovak Republic, Estonia, Latvia, and Lithuania – 59% (Aslund 2013, p. 70).

Poland's way of transition to a market economy can be described with the term "shock therapy". The therapy included liberalization of prices, instant implementation of market principles in a national economy, and radical economic reforms. The Czech Republic followed quite a similar way. Radical economic reforms were implemented at the beginning stages of the transition. Those reforms included liberalization of prices, liberalization of international trade, minimization of the role of the government in a national economy, and broad privatization. The development of these two countries has followed one direction and demonstrated the smoothest character.

Comparing the indicators before and after joining the EU is the simplest way to conduct a brief analysis of the impact of accession to the Union on the national economies of the countries under consideration.

Comparison of the main macroeconomic indicators of the CEE							
countries before and after joining the European Union							
	Baltic states						
Indicator	Before	After 2004	Delta				
	2004						
The average pace of GDP	6,09	3,27	-2,82				
growth, %							
The average	13,68	9,60	-4,08				
unemployment level, %	-						
The average rate of	8,78	3,38	-5,40				
inflation, %		,					
The average GDP per	7 754,42	14 708,45	6 954,03				
capita, current US\$	-	-					
The average current	-7,10	-3,67	3,43				
account balance (% to							
GDP)							
The	e Visegrad Gi	oup					

Table 2

Indicator	Before 2004	After 2004	Delta
The average pace of GDP growth, %	3,60	3,25	-0,35
The average unemployment level, %	11,08	8,62	-2,46
The average rate of inflation, %	9,50	2,56	-6,94
The average GDP per capita, current US\$	10 785,09	16 340,93	5 555,84
The average current account balance (% to GDP)	-4,59	-2,42	2,17

Source: Calculated by the author, according to the World Bank Indicators. Available at https://data.worldbank.org/indicator

Joining the European Union has played a positive role for the countries' national economies, because of a number of reasons. They joined a free trade area inside the EU and got the chance to expand their export. They got access to centralized financing inside the Union. Membership in the EU opened the doors to constant flows of direct and portfolio foreign investments. The countries' businesses received an opportunity to enter solvent European markets. On the other hand, the European companies entered the markets of the CEE countries. Citizens of these countries got access to new products and services, and, also developed financial markets. It is possible to consider that generally the macroeconomic conditions of the selected groups of countries improved after the entrance to the EU. Entering the EU, the CEE countries have reached the higher level of their development with higher political standards, economic indicators, and degree of democracy. Joining the Euro area is following important step in the integration process.

3. The Eurozone as an Optimum Currency Area

As of today, the Eurozone consists of 19 countries with a total GDP of \$13 021.05 billion and a total population of 343 million as of 2020 (Eurozone Economic Outlook 2022). No country has joined the Eurozone for the last seven years, which is the longest period from the moment of establishment of the zone. Bulgaria and Croatia are going to join the Eurozone in 2023 since they respond to three out of four Maastricht criteria. Croatia has declared its final decision to abandon its own currency and go in with the Eurozone next year (Tamma 2022). All the European countries make their decision whether to join the Eurozone, based on the benefits they may receive and the price they have to pay. As it has been already mentioned, the overall success of the whole Eurozone and the economic well-being of every separate member depend on the economic conditions of all the other members. That is why potential members of the Eurozone must respond to the Maastricht criteria. Maastricht criteria are the criteria of convergence, which should be achieved by a country to become a member of the Eurozone.

		Table 3
	The	Maastricht (Convergence) Criteria
Criterion	Measure	Convergence criterion
Price stability	Harmonised	The average inflation over one
	consumer price	year before the examination
	inflation	not more than 1.5 percentage
		points above the rate of the
		three best-performing EU
		countries
Sound public	Government	The general government
finances	deficit and debt	budget deficit cannot generally
-		exceed 3 percent of GDP,
		while the government debt
		cannot exceed 60 percent of
		GDP
Exchange	Exchange rate	Participation in the Exchange
rate stability	developments in	Rate Mechanism (ERM II) for
	ERM II	two years
Durability of	Long-term	Not more than two percentage
convergence	interest rate	points above the rate of the
-		three best-performing EU
		countries in terms of price
		stability over one year before
		the examination

Source: Buti, Marco, and Vitor Gaspar. "Maastricht Values." *VoxEU*, 8 July 2021, voxeu.org/article/maastricht-values

The efficiency of the Euro area and its potential for expansion can be partially evaluated in the context of meeting these criteria by the current members and potential members. The Maastricht criteria have been not strictly followed by the European Union for the last years. Because of the global financial crisis and its consequences, fiscal discipline has been damaged among the European countries. The pandemic of 2020 has also played a crucial role since the governments were forced to conduct expansionary monetary and fiscal policies, which have led to the record levels of government debt and government deficit. Inflation has become a serious challenge for the monetary regulative bodies in Europe. It is going to be a serious case in the nearest future, because of the consequences of the global pandemic and the global trend of growing prices, due to the war in Ukraine, in particular. That is why it is difficult to talk about the execution of the criteria. The levels of inflation, government debt, and deficit/surplus in the Eurozone are provided in the table.

			1 4010 4					
	Inflation rate and the fiscal discipline in the European Union							
	Inflation, HICP	Government debt, % of GDP	Government deficit/surplus, % of GDP					
2012	2,2	90,972	-3,808					
2013	0,8	92,96	-3,074					

	Inflation, HICP	Government debt, % of GDP	Government deficit/surplus, % of GDP
2014	-0,2	93,117	-2,489
2015	0,3	91,216	-1,997
2016	1,1	90,365	-1,477
2017	1,3	87,858	-0,938
2018	1,5	85,845	-0,447
2019	1,3	83,823	-0,664
2020	-0,3	97,276	-7,075
2021	5	95,646	-5,106

Source: European Central Bank. *Statistical Data Warehouse*, https://sdw.ecb.europa.eu/browse.do?node=9689727

If the criteria are not followed by the current representatives, whether it is justified to demand their execution by potential members. If the criteria are not KPIs anymore – what indicators should be used to judge the degree of economic convergence between the countries inside the optimum currency area. Finally, the Maastricht criteria are the foundations of the currency area. Missing the criteria questions the essence of the Eurozone. In such conditions, the criteria should be revised or an appropriate policy to solve the situation must be implemented.

The Maastricht criteria are also hardly met by potential members of the Eurozone. A country's potential to join the Eurozone and its compliance with the Maastricht criteria are evaluated in the socalled annual convergence report. This convergence report is presented by two institutions - European Commission and European Central Bank. According to the European Convergence Report 2020, Hungary and the Czech Republic fulfill two out of the four economic criteria necessary for adopting the euro: the criteria relating to public finances and long-term interest rates. The countries do not fulfill the price stability and the exchange rate criteria. Also, legislation in these countries is not fully compatible with the Treaty. Poland responds to two out of four convergence criteria - price stability and the criteria relating to the public finances. It is essential to understand that the situation with the Maastricht criteria is going to worsen in the upcoming years due to overcoming the consequences of the global pandemic and other factors. In particular, it will be extremely difficult to maintain fiscal discipline in terms of government debt and deficit, and the pace of inflation is going to overrun all the reference values (European Commission 2020). As it can be noticed from the report, the biggest challenge for potential countries-member of the Eurozone is the exchange rate criterion. These countries are not yet ready to quit an independent exchange rate policy. On the

other hand, it can be possible that they simply do not plan to go in with the Zone in the nearest future. As a result, there is no need to join the ERM II immediately.

It is possible to compare the inflation rate and the degree of fiscal discipline in the analyzed groups of countries, accounting their presence in the Eurozone or not. The comparison will demonstrate how the difference in the exchange rate regimes is able to affect the inflation, and whether the membership in the Union guarantees higher level of fiscal discipline.

Table 5

	Inflatio	on rate an	d the fise	al discip	line in th	e CEE co	ountries
Inflation	2015	2016	2017	2018	2019	2020	
Czech							
Republi							
с	0,31	0,68	2,45	2,15	2,85	3,16	
Hungar							
у	-0,06	0,39	2,35	2,85	3,34	3,33	
Poland	-0,87	-0,66	2,08	1,81	2,23	3,37	
Slovak							
Republi							
с	-0,33	-0,52	1,31	2,51	2,66	1,94	
Estonia	-0,49	0,15	3,42	3,44	2,28	-0,44	
Latvia	0,17	0,14	2,93	2,53	2,81	0,22	
Lithuani							
а	-0,88	0,91	3,72	2,70	2,33	1,20	
Central							
govern							
ment							
debt, %	0015	2016	0015	2010	2010		
of GDP	2015	2016	2017	2018	2019	2020	
Czech	51,7	47,4	43,3	39,7	37,4	46,5	
Ilungar	1	3	3	4	0	4	
nungai	96,6	98,0	95,2	80,8 6	04,0 Q	97,5	
у	70.2	73.0	68.7	66.7	63.3	773	
Poland	1	1	2	6	7	3	
Slovak	-	-			,	-	
Republi	66,3	67.7	65,5	63,3	63,0	78,7	
c	9	7	2	3	3	4	
	12,7	13,7	13,1	13,0	13,6	24,8	
Estonia	3	0	4	3	1	2	
	46,5	50,3	47,6	46,3	47,5	55,3	
Latvia	9	0	1	0	1	9	
Lithuani	53,4	50,9	47,0	40,8	44,5	55,4	
a	1	4	/	2	4	5	
Govern							
deficit/s							
urnlue							
% of							
GDP	2015	2016	2017	2018	2019	2020	
Czech							
Republi							
c	-0,64	0,71	1,50	0,89	0,29	-5,78	
Hungar							
у	-2,00	-1,80	-2,46	-2,11	-2,09	-7,79	
Poland	-2.60	-2 39	-1 49	-0.24	-0.74	-6.91	
Slovak	2,00	2,57	1,77	0,27	0,74	0,71	
Republi							
c	-2,67	-2,58	-0,98	-1,01	-1,30	-5,47	
Estonia	0.11	0.41	0.40	0.54	0.12	5 40	1
Estonia	0,11	-0,41	-0,48	-0,30	0,12	-3,60	1

Latvia	-1,43	0,02	-0,77	-0,84	-0,57	-4,47
Lithuani						
а	-0,30	0,25	0,42	0,54	0,47	-7,28
C C	0.1	1.4.11		1	1. 4	41 XV 1

Source: Calculated by the author, according to the World Bank Indicators and OECD Data

The rates of inflation are comparable in both groups of countries despite the fact of membership of a country in the Eurozone or not. Therefore, the differences in the exchange rate regimes and conducted monetary policies do not impact inflation strongly. On the other hand, the countries of the Eurozone demonstrate a higher level of fiscal discipline. The average levels of central government debt and government deficit are lower in these states. The necessity to meet the Maastricht criteria and experience of the Eurozone debt crisis force these countries to be more restrained in their fiscal policies. As the experience of South European countries has shown, it is essential to show fiscal discipline before entrance to the Eurozone in order to avoid macroeconomic problems in the future.

There is no unanimous support for the implementation of the Euro among the analyzed countries. The only exception is Poland, which has declared its intention to join the Eurozone in the relatively nearest future. The representatives of the Czech Republic's government have declared that the implementation of the Euro is not among the country's priorities for the upcoming several years. A more categorical situation is in Hungary, where the government said that the plans to implement the Euro are not going to be realized in the upcoming 30 years. Moreover, Hungary has some problems with fiscal discipline. That is why it is a question of whether the Euro area is ready to invite Hungary.

The analyzed countries can be divided into two groups – members of the Eurozone and countries with their national currencies. The members of the Eurozone are Slovakia, Estonia, Latvia, and Lithuania. The Slovak Republic is the only country from the Visegrad Group, which joined the Eurozone in 2009. The Baltic states are currently the last countries, which joined the Eurozone (Estonia -2011, Latvia - 2014, Lithuania - 2015). Being a member of an optimum currency area means absence of ability to choose the exchange rate regime by a country. Only Slovakia was characterized by a floating exchange rate regime at the moment of joining the Eurozone. Estonia and Lithuania used the currency board, and Latvia - narrow band. A traditional way for the countries from Central and Eastern Europe was movement from the fixed exchange rate regimes at the beginning of transition (when the exchange rate was used as a nominal anchor policy) to the floating regimes. The reason for it was hyperinflation at the very beginning stages of the transition to the market economy. The Baltic states used the fixed exchange rates as an instrument to keep the inflation rates at moderate levels. Implementation of national currencies, usage of the currency boards, and special drawing rights allowed these countries to reallocate their trades to the western markets and receive the foreign direct investments from the European countries. Estonia implemented the currency board in 1992, Lithuania in 1995. Conventional fixed peg was introduced in Latvia in 1994. The following step was to link the national currencies to euro. Estonia did it in 1999, Lithuania in 2002, and Latvia in 2005. Respectively, the introduction of euro did not change a lot in these countries' national economies, since they had already been operating with fixed exchange rates against the euro (Staehr 2015).

The Slovak Republic had been characterized with a floating exchange rate regime before it joined the ERM II mechanism. After joining the mechanism its national currency continued nominal appreciation. Slovakia's national currency euro conversion rate was fixed in summer 2008 before the upcoming global financial crisis. The central European currencies were at historically high levels against the euro that times. Because of already fixed conversion rate to the euro, the Slovakian koruna managed to escape dramatic depreciation as in the case of the Czech koruna, Hungarian forint, and Polish zloty (Darvas 2019, p. 7).

If the exchange rates matter much, the Central European Euro non-members should have performed better economically than Slovakia after the global financial crisis of 2008, when the floating currencies depreciated massively, but this did not happen. In fact. Slovakia was one of the best performers in terms of economic growth after 2008, as its economy grew by 29.7 percent from 2008 to 2019. It outperformed the Czech Republic (19.4 percent growth in the same period), and Hungary (20.1 percent), though Poland grew even faster at 46.3 percent. The employment rate rose very rapidly in Slovakia after 2013, similarly to other central European countries, and the rate in 2019 is higher than in Poland and Romania, but lower than in the Czech Republic and Hungary. Apparently, the lack of a stand-alone exchange rate and monetary policy in Slovakia did not hinder positive economic developments. On the other hand, Hungary had a flexible exchange-rate regime both before and after 2008, yet there were unsustainable macroeconomic developments before 2008, and the growth record after 2008 was relatively weak compared to other countries in the region. A lot of problems in the countries of the CEE are associated

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with a weak fiscal discipline and overall fiscal problems. Independent currency and floating exchange rate were not inevitable solution to the economic problems. It means that the floating exchange rate of an own currency are not guarantee of a better answer to the global financial crisis and avoiding the crisis of the balance of payments (Darvas 2019, p. 9).

Balance of payments can be analyzed in a narrow understanding as the state of the current account or in a broad understanding as a sum of the current account, capital account and financial account. Primarily the Baltic states have faced a decline of the current account after their entrance to the EU in 2004. The decline of the current account has become possible because imports have grown faster than export after joining the European Union. The income of these countries has grown after their entrance into the EU, partially because of growth of foreign direct investments and portfolio the investments. It has increased demand for imports and led to falling current account of these countries. Therefore, the income effect has overcome growth of countries' export. The best situation was in Slovakia, where export exceeded imports after joining the EU, and the country's current account started to improve.



Figure 3. Export and imports in Slovakia, millions of USD Source: IMF Data Warehouse.





Figure 4. Export and imports in Lithuania, millions of USD Source: IMF Data Warehouse. Available at https://data.imf.org/regular.aspx?key=62805740



Figure 5. Export and imports in Estonia, millions of USD Source: IMF Data Warehouse.



Figure 6. Export and imports in Latvia, millions of USD Source: IMF Data Warehouse. Available at https://data.imf.org/regular.aspx?key=62805740

The rest countries from the Visegrad Group (Poland, Hungary and the Czech Republic) have not faced the problem similar to the one of the Baltic states. Revenues from export exceeded expenditures on imports. The state of the current account (as a % of GDP) of these countriesbegan to improve after expansion of the EU in 2004.







Figure 8. Export and imports in Hungary, millions of USD Source: IMF Data Warehouse.

Available at https://data.imf.org/regular.aspx?key=62805740



Source: IMF Data Warehouse. Available at https://data.imf.org/regular.aspx?key=62805740

Generally, all the countries of the Eurozone have shown steady growth of the current account balance after going in with the Eurozone. It was caused by overall growth of bilateral trade between the countries of the Eurozone as a result of existence of a single currency. As it has been already mentioned, presence of a single currency lowered the transaction costs of trade and boosted its overall turnover. However, it sounds not justified to claim that membership in the optimum currency area can improve a country's current account. The dynamics of the current account of the countries under consideration (as a % of GDP) are provided in the graphs below.



Figure 10. Dynamics of the current account (as a % of GDP) of the Baltic States

Source: Calculated by the author, according to the World Bank Indicators. Available at https://data.worldbank.org/indicator

The Baltic States have traditionally been net importers. Joining the European Union even worsened the conditions of their current account. The current account balance had been improving prior to the global financial crisis of 2008. It reached positive values after the crisis due to the falling imports of the countries because the economic recession. The recession led to falling consumption and investment, which resulted in improvement of the current account of the balance of payments. Such improvement can be hardly explained by the overall policy in the EU. There is no significant improvement of the current account balance after joining the Eurozone. The only exception from this rule is Lithuania. A similar situation is monitored among the countries of the Visegrad Group. Hungary, Poland, and the Czech Republic have demonstrated steady improvement in the current account balance since 2008. The last five vears have been again characterized by worsening of the current account balance.



Figure 11. Dynamics of the current account (as a % of GDP) of the Visegrad Group Countries

Source: Calculated by the author, according to the World Bank Indicators.

Available at https://data.worldbank.org/indicator

The balance of payments of a country in a narrow understanding (current account) may be reflected via savings-investment balance. The current account is equal to the difference between gross domestic savings and gross domestic investments (gross capital formation). Exceeding gross domestic savings over national investments results in a positive current account of a country's balance of payments. Such equation lets differ improvement of the current account, caused by macroeconomic policy, from improvements, defined by the overall economic factors, including recession.

Table 6

Difference	2015	2016	2017	2018	2019	2020
Carab Danablia	-	0.22	0.00	0.25	0.65	2.95
Czech Republic	0,89	0,33	0,90	-0,25	-0,65	2,85
Hungary	1,82	4,19	1,61	-0,07	-0,84	-1,69
	-	-	-			
Poland	1,09	0,50	0,41	-1,36	0,33	2,86
	-	-	-			
Slovak Republic	0,92	1,39	1,13	-0,68	-2,46	-1,18
Estonia	2,58	2,14	2,51	2,53	3,86	-0,38
	-	-				
Lithuania	2,44	1,07	0,56	0,29	3,48	7,33
	-					
Latvia	0,59	1,59	1,28	-0,21	-0,67	2,87
0 01141	1 .1 .		1		1 117 1	1 D 1

The difference between gross domestic savings and gross domestic investments (gross capital formation), % of GDP

Source: Calculated by the author, according to the World Bank Indicators. Available at https://data.worldbank.org/indicator

Experience of the analyzed countries proves the correlation of the difference between the gross domestic savings and investments and the conditions of the current account. Exceeding of the gross domestic savings over gross domestic investments, usually in the conditions of the economic recession, improves conditions of the current account. The governments are able to impact such processes via a proper monetary policy. For instance, growing interest rates can stimulate savings and harm investments, leading to improvement of the current account.

Balance of payments' crisis is defined not only by the current account, but also by its other components. Moreover, the negative current account can be even beneficial for a national economy at some particular stages of economic development. The fluctuations of the current account may be compensated by the capital account or financial account of the balance of payments. The experience of the CEE countries proves that influence of capital and financial account may be crucial for the overall balance of payments. Analysis of the countries' balance of payments for the last years is provided in the following tables.

						USI
Indicat or	2015	2016	2017	2018	2019	2020
Estonia						
ECA	403	301	622	280	616	-392
CapAc	471	258	257	402	382	455
FA	1030	287	928	314	454	-324
BOP	-156	272	-50	368	543	387
Latvia						
CA	-169	439	399	-99	-223	1005
CapAc	767	334	305	609	505	586
FA	332	848	-404	1155	470	1731
BOP	265	-75	1101	-645	-188	-140

Table 7 Balance of payments in the Eurozone countries, millions of

Lithuan]					
CA	-1014	-474	304	131	1817	4700
CapAc	1268	651	610	873	1015	1147
FA	2396	-1250	-911	-95	2747	4848
BOP	-2142	1426	1826	1099	85	999
Slovaki a						
CA	-1849	-2433	-1854	-2293	-2842	-294
CapAc	2854	1543	113	990	747	1217
FA	-778	-1725	-3630	-4273	-2793	-157
BOP	1783	835	1889	2970	698	1079

where: CA – current account, CapAc – capital account, FA – financial account, BOP – balance of payments

Source: IMF Data Warehouse. Available at https://data.imf.org/regular.aspx?key=62805740

The Eurozone countries are not characterized by the balance of payments crises in its narrow or broad understanding. The Slovak Republic is characterized by a steady negative current account. The situation is compensated by the growth of capital account and suitable financial account. The only exception is Latvia, where financial account plays a crucial role in the external imbalance. However, the trend to improvement of the situation is observed. The countries' balances of payments show that financial account, which is mainly defined by the foreign direct and portfolio investments, can play a crucial role. This factor is important, since presence in the EU or Eurozone means growing inflow of the foreign direct and portfolio investments into a national economy.

	Balance of	of payments	in the Non-	Eurozone c	countries, n	Table 8 nillions of USD
Indicator	2015	2016	2017	2018	2019	2020
The Czech Republic						
CA	845	3463	2961	1260	898	8845
CapAc	4012	2132	2016	565	1062	3056
FA	-7286	-18027	-44767	762	-4372	8579
BOP	12143	23622	49743	1063	6332	3322
Poland						
СА	-4347	-3719	-1960	-7530	2931	21067
CapAc	11331	4867	6795	12148	11757	14478
FA	-464	-21274	5118	-5923	-1423	6752
BOP	7448	22422	-283	10541	16111	28793
Hungary						
СА	2926	5855	2769	636	-620	167
CapAc	5686	-20	1203	3615	3007	3144
FA	12669	10765	1861	-3037	250	-6633

BOP	-4058	-4929	2111	7289	2137	9944				
where: CA - current account, CapAc - capital account, FA - financial										
account, BOP – balance of payments										
Source:	IMF	Data	Warehouse.		Available	at				
https://da	ta.imf.org/r	egular.aspx	?key=62805	5740						

The non-Eurozone countries also have not experienced the balance of payments crises in recent years. The Czech Republic has a dramatic surplus of the balance of payments due to positive current account and tremendous surplus in financial account. Poland is also characterized by serious surplus of the balance of payments. The current account has been volatile in recent years, while the capital account has been characterized by large surplus. The current account of Hungary is positive, but with a trend to decline. The capital account is stable and high. The balance of payments has been traditionally in surplus except of 2015 and 2016.

Therefore, both groups of countries are characterized by absence of balance of payments crises. The situation in the Visegrad Group seems to be even better. The question is whether it is due to the monetary policy and independent currency or due to other factors.



Graph 12. BOP in the Eurozone Countries, millions of USD Source: IMF Data Warehouse. Available at https://data.imf.org/regular.aspx?key=62805740



Graph 13. BOP in the Non-Eurozone Countries, millions of USD Source: IMF Data Warehouse.

Available at https://data.imf.org/regular.aspx?key=62805740

It has been mentioned that capital and financial accounts have played a crucial role in the countries' balance of payments. Foreign direct and portfolio investments occupy a dramatic share in these accounts. 2001-2008 years were characterized by a large inflow of foreign direct investments to the Baltic states as a result of economic reforms, economic disciplines, and perspectives of the EU membership. It resulted in the growth of GDP and internal consumption. On the other hand, it led to some overheating of the national economies and growth of the current account deficit. These countries also have not managed to avoid the inflow of speculative capital, which has made these countries vulnerable to external shocks. The fixed exchange rate regimes in these countries have not allowed the nominal exchange rates to become an absorbent of capital inflow and made the national economies vulnerable to the changes in international conjuncture. Using data, provided by the World Bank, it is possible to study the net inflows of the foreign investments into a country, which are divided up into two groups - foreign direct investments and foreign portfolio investments. The dynamics of the foreign direct investments (FDI) for the Baltic states are provided in the graphs below.



Graph 14. FDI in the Baltic States, millions of USD Source: The World Bank Indicators.

Available at https://data.worldbank.org/indicator



Graph 15. Allocation of FDI in the Baltic States, millions of USD Source: The World Bank Indicators. Available at https://data.worldbank.org/indicator The greatest amount of the foreign direct investments the Baltic states received immediately after joining the European Union. The overheating of a national economy has led to the deficit of the current account immediately after joining the European Union. The trend was harmed by the global financial crisis of 2008. The greatest share of foreign direct investments has been accumulated by Estonia. The dynamics of the foreign direct investments for the countries from the Visegrad Group are provided in the graphs below.



Graph 16. FDI in the Visegrad Countries, mln of USD Source: The World Bank Indicators. Available at https://data.worldbank.org/indicator



Graph 17. Allocation of FDI in the Visegrad Countries, mln of USD Source: The World Bank Indicators. Available at https://data.worldbank.org/indicator

The trend is quite similar to the Baltic states. A serious exception is the net outflow of the investments in 2018, caused by the significant net outflow of the FDI from Hungary, equal to almost \$65 billion. Allocation of the total FDI is relatively equal among the countries of the Group. Of course, the FDI have grown dramatically in both groups of countries after becoming members of the EU. The Baltic states received 238% more investments ten years after joining the EU then ten years before the EU membership (Estonia – 298%, Latvia – 248%, Lithuania – 165%). The Visegrad Group – 192% (Hungary – 424%, Poland – 132%, Slovakia – 109%, Czech Republic – 105%). However, the Visegrad Group has received significantly more investments

than the Baltic States. Only Czech Republic received twice more investments than all the Baltic states after becoming the members of the EU - \$88 billion against \$44 billion. It is essential to evaluate the average share of the FDI in the countries' GDP for the analyzed period to understand their significance for national economies.



Graph 18. The FDI share in a country's GDP Source: Calculated by the author, according to the World Bank

Indicators.

Available at https://data.worldbank.org/indicator

Definitely the foreign direct investments play a crucial role in national economies of Hungary and Estonia. The rest of the analyzed countries are less vulnerable to the fluctuations of the amounts of the foreign investments. The amounts of portfolio investments have not been crucial for national economies, compared to the foreign direct investments. It may be considered a positive fact since it lets avoid overheating of national economies due to the inflow of speculative capital in a form of portfolio investments. A comparison of portfolio investments and foreign investments for both groups of countries is graphically presented below.



Graph 19. Comparison of dynamics of FDI and portfolio investments in the analyzed countries, millions of USD

Available at https://data.worldbank.org/indicator

Source: Calculated by the author, according to the World Bank Indicators.

4. Perspectives of the Eurozone for Further Expansion

Generally, both groups of countries do not currently face the problem of the balance of payments crisis. Permutations of the current account are often compensated by the financial and capital accounts. The inflow of foreign direct and portfolio investments does not critically depend on a country's membership in a single currency area. It is rather defined by a state's production possibilities and the overall potential of a national economy. The non-Eurozone member the Czech Republic has received more investments than all the Baltic states, which adopted the Euro. The exchange rate regime also does not really matter in the context of the external equilibrium. It is possible to talk about more important role of the fiscal discipline, than the independent exchange rate regime. Experience of South European countries has proven this thesis.

Both groups of countries also were not seriously damaged by the Eurozone debt crisis, which started in 2009. However, the crisis was a serious problem for South European countries and became a challenge for the whole Eurozone, which allowed economists to claim about the crisis of the Eurozone as an optimum currency area. Experience of South European countries is very important to study by potentially new members of the Euro area. New potential members of the currency union will evaluate their intentions to join the union, based on the area's ability to overcome the crisis, and the ability of institutions to avoid such imbalances in the future. The Eurozone itself must study the lessons of the debt crisis to guarantee stable development and further expansion.

South European countries like Spain, Portugal, Italy, Greece, and Cyprus still experience negative economic consequences after the global financial crisis of 2008. Their experience has shown that compliance with the Maastricht criteria at the moment of joining the Eurozone does not exclude potential problems in the future. Fiscal discipline of the states is a crucial factor of macroeconomic stability in a separate country and in the whole Eurozone. Fiscal imbalances (high level of central government debt and government deficit) prior entrance to the Eurozone may eliminate all the positive effect of joining the area. Access to cheap financial resources after joining the Euro area may only strengthen the fiscal problems of some countries.

The experience of the Baltic states has proven the role of fiscal discipline in successful integration in the Eurozone. The current account deficit, the pace of inflation, and credit growth in the Baltic states before their membership in the Euro area were higher than in their South European peers. However, these countries have managed to avoid a deep debt crisis because of fiscal discipline. Gross public debt levels as a share of GDP in 2007 were very low in the Baltic countries – 4 percent in Estonia, 8 percent in Latvia, and 16 percent in Lithuania – which provided a fiscal buffer (Darvas 2019, p. 10).

Expectations of economic agents are also very important factor of successful integration into the Eurozone. Expectations in the Baltic states and the Slovak Republic had demonstrated belief in macroeconomic policy before entrance to the Eurozone. It allowed their governments to implement a proper fiscal and monetary policy, which realized the goals of financial stability and fiscal discipline. In turn, citizens of South European countries traditionally doubted the idea of joining the Euro area. As a result, the efficiency of the conducted macroeconomic policy was harmed.

Perspectives of the Eurozone as an optimum currency area is going to depend on its ability to guarantee stability inside the zone and, to a lesser extent, its possibilities to expand. The Eurozone institutions should follow that the Maastricht criteria are still met by the members, and, especially, it is related to fiscal discipline. Probably, the criteria should be more flexible in the conditions of economic volatility. Potential members must be strictly evaluated in the terms of fiscal discipline to avoid negative lessons of South Europe. For example, Hungary is characterized by a high central government debt of almost 90% of GDP. Also, the government's deficit reached almost 8% in 2020. If the country decides to enter the Eurozone, it must eliminate the factors, which lead to fiscal problems, and implement a proper macroeconomic policy.

The country's final decision to join the Eurozone will depend on the comparison of benefits and drawbacks. Potential benefits will include reduction of exchange rate risk, growth of trade, higher credibility of monetary policy, financial integration, a decline in interest rates, and broader access to financial markets for households and firms. In the end, all these factors will be reflected in the growth of the country's GDP. Potential negative effects and risks are loss of monetary policy independence, a decline of the role of the exchange rate as an instrument of adjustment policy, risk of a potential reduction in competitiveness, etc.

Loss of monetary policy independence is the greatest disadvantage of joining the Eurozone. According to some economists, the costs of abandoning an independent monetary policy may be potentially not very high in the case of developing countries. Such countries do not properly use monetary policy as a stabilization device. Usually, such policies bear pro-cyclical character. The countries under consideration, which are not members of the Eurozone (Poland, Hungary, and the Czech Republic) use the floating exchange rate regimes (Alessina 2003, p. 310).

5. Conclusions

In conclusion, presence in the currency union, which can be considered as an optimum currency area, brings more benefits for a country, than potential drawbacks. Abandoning an independent monetary policy is not a serious challenge for the developing countries, compared to potential benefits. Experience of the Slovak Republic has also shown that abandoning the independent floating exchange rate regime is not crucial. The greatest incentive for a state to join the Eurozone is growth of trade turnover and the so-called benefits of commitments. A potential and an actual member of the Eurozone has significant chances to reach a higher level of fiscal discipline. On the other hand, absence of fiscal discipline can harm potential benefits for a country from joining a single currency area. Moreover, an optimum currency area will also suffer because of this factor.

Both groups of the analyzed countries have not experienced the balance of payments' crises in recent years. It means the Eurozone is efficient enough to protect its members from fluctuations of the external conjuncture. Alongside with all the mentioned benefits this makes the currency area attractive for other potential members. Political factors and overall economic situation in the region may become obstacles on this way.

The Eurozone as an optimum currency area definitely has a potential for expansion. Such expansion must be favorable for both potential members and the Eurozone itself. As the lessons of South European countries have shown fiscal discipline is the most important Maastricht criterion before entrance to the currency union. The Maastricht criteria, in general, are not followed even by the current members of the union. It will be more difficult to do in the nearest future. Probably, they should be revised, accounting new conditions in international economy. Finally, it is vitally important to form proper expectations among national economic agents to make conducted monetary and fiscal policies more effective.

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