Suitability of Entry into the Euro Area:
An Excursion in Selected Economies

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Abstract—The current situation in the eurozone raises a number of topics for discussion and to help in finding an answer to the question of whether a common currency is a more suitable means of coping with the impact of the financial crisis or whether national currencies are better suited to this. The economic situation in the EU is now considerably volatile and, due to problems with the fulfilment of the Maastricht convergence criteria, it is now being considered whether, in their further development, new member states will decide to distance themselves from the euro or will, in an attempt to overcome the crisis, speed up the adoption of the euro. The Czech Republic is one country with little interest in adopting the euro, justified by the fact that a better alternative to dealing with this crisis is an independent monetary policy and its ability to respond flexibly to the economic situation not only in Europe, but around the world. One attribute of the crisis in the Czech Republic and its mitigation is the freely floating exchange rate of the national currency.

It is not only the Czech Republic that is attempting to alleviate the impact of the crisis, but also new EU member countries facing fresh questions to which theory have yet to provide wholly satisfactory answers. These questions undoubtedly include the problem of inflation targeting and the choice of appropriate instruments for achieving financial stability. The difficulty lies in the fact that these objectives may be contradictory and may require more than one means of achieving them. In this respect we may assume that membership of the euro zone might not in itself mitigate the development of the recession or protect the nation from future crises. We are of the opinion that the decisive factor in the development of any economy will continue to be the domestic economic policy and the operability of market economic mechanisms. We attempt to document this fact using selected countries as examples, these being the Czech Republic, Poland, Hungary, and Slovakia.

Keywords—Currency exchange rate, Maastricht convergence criteria, monetary union, public finances.

I. INTRODUCTION

THEORETICAL discussion concerning the benefits and risks that could result from the Czech Republic's membership of a monetary union is based predominantly on the theory of optimum currency areas (OCA). This theory explores the suitable form of a currency exchange rate while taking account of the pros and cons of a flexible and fixed exchange rate. One major step forward in this respect was Mundell's definition of a so-called optimum currency area [16]. Mundell considers an optimum currency area to be

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groups of two or more countries which would find it advantageous to give up their national currencies and set up a monetary union. According to Mundell, such an optimum monetary union would be particularly associated with workforce mobility and the integration of the financial markets. These theoretical conclusions regarding the anticipated prerequisites for an optimum currency area have been followed up by a number of other economists.

Additional attributes for the operation of the OCA have gradually been formulated. From our point of view, the most important of these are particularly the requirements put forward by P. Kenen [11], which make a country's entry into a monetary union conditional upon the existence of a similar diversified manufacturing base. No less important is the criterion given by R. McKinnon [13], stipulating an increase in trade openness between members of the monetary union, which also involves boosting their optimality. The Czech National Bank also takes other theoretical attributes of the OCA into consideration, such as cyclical adjustment, price and wage flexibility, sustainability of public finances [6], [7], flexibility of the labour market and the homogeneity of the preferences of members of the monetary union, amongst others [3].

For the Czech Republic and other countries which are preparing to adopt the euro [10], [12], the most topical issue is the internal economic cohesion of the euro zone countries and their ability to operate within a single currency area. In this regard, for the Czech Republic it is important to know not only to the domestic parameters of the Czech Republic's economic alignment with the euro zone, but also developments in the individual countries of the euro zone and in countries which are preparing for the adoption of the euro. The question is whether national currencies help economies to mitigate the impact of the crisis or whether the crisis will be deeper and more severe in countries which have ceased to use their national currency [1].

The theory of optimum currency areas [15] has been used in the Czech Republic in recent years particularly in analytical work carried out by the ČNB, the conclusions of which serve as the basis for the Czech Government's decision-making process concerning the readiness of the Czech economy for entry into the ERM II exchange rate mechanism and the subsequent adoption of a common European currency [14].

These analyses are based on the fact that the economic alignment of the euro zone countries is fundamentally essential if the monetary union is to operate smoothly. The advantages of being in the monetary zone are associated with

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the following principal characteristics:

- Openness of the economy and economic links with other countries within the monetary zone. Greater benefits from a common currency come with a higher level of integration. These are primarily down to the elimination of the exchange rate risk in economic relations, which could strengthen any such ties due to the reduction in the cost of foreign trade and foreign investment.
- Symmetry and flexibility.

These are the traditional criteria for an optimal monetary zone [4], which include similarity in economic structure and economic shocks, diversification of production and consumption, similar inflation rate, stable exchange relations, labour mobility and other production-related factors, price and wage flexibility, and fiscal and political integration [4]. The ability to eliminate or mitigate the adverse impact of asymmetric development in the absence of an autonomous monetary policy requires a sufficiently flexible economy with adequate adaptive mechanisms. Fiscal policy and consolidated public finance play a crucial role here. Other important adaptive mechanisms involve the labour market (flexibility is monitored using the workforce mobility indicator and the level of long-term unemployment), as well as price and wage flexibility, the stability of the banking sector, etc

Tests carried out by the ČNB [3] imply that the problems involved in achieving long-term balanced development can be derived from the synthetic indicators showing the degree of real economic convergence attained. Differences can be indicated in annual growth rates [17] (there is no major change in the alignment of economic cycles), in the level of unemployment (it has risen more sharply in some countries, leading to divergent development in this area), inflation trends (inconsistencies occur particularly in crisis years) and in long-term interest rates. Inconsistencies in interest rates reflect differing degrees of debt problems. The growing inconsistency in this regard is also apparent in the stance taken by the European Central Bank. Since 2011 this has partially tightened up its monetary policy by increasing the main interest rate, while on the other hand has continued to take emergency measures.

II. FORMULATION OF THE PROBLEM

Discussion concerning the Czech Republic's accession to the monetary union is based on the results of analyses intended to provide an answer to the question of whether the adoption of a single monetary policy has benefited the countries in question and to what extent it has alleviated the impact of the crisis. Despite compliance with the Maastricht convergence criteria (only partially in the case of Greece, merely due to imprecise statistics [8]), before the adoption of the euro the eurozone countries are currently heterogeneous. Some differences have become even wider recently. It is wholly logical that in countries which are preparing to enter the eurozone, including the Czech Republic, discussions and recommendations regarding the monetary policy and its autonomy are combined with the formulation of standpoints

concerning those opinions which claim that the creation of a monetary union as it stands now, comprising economies that greatly vary in terms of performance, is not such a good idea and that the final decision on the date of entry into the eurozone should be postponed. Although various recommendations have been made, they are generally based on the shared idea that adopting a single monetary policy requires the relevant economic cycles to be aligned. This alignment is dependent on the similarity between the structural variables of their economies [5]. Convergence of their nominal values reflects the success of the single monetary policy in the context of other economic policies. The importance of structural differences in the monetary union is emphasised in the EEA [5]. Differences in long-term interest rates and inflation indicate structural variances and also lead to differences in real interest rates, including their inherent impact on the real economy.

III. CONVERGENCE INDICATORS

We will now focus on selected alignment indicators. On the basis of statistical data of macroeconomic indicators we will trace the alignment of the Czech Republic, Poland, Hungary and Slovakia. These countries have not been chosen at random. These are countries which have signed up to the commitment to meet the convergence criteria for the adoption of the euro. As Slovakia has already adopted the euro, at least approximate conclusions can be drawn regarding the effects of entry into the monetary union in comparison with countries which have so far preferred to keep to an autonomous monetary policy.

A. Debt to GDP

The real convergence process tends to be associated with bringing price levels and structures to approximate those of more developed countries [3].

TABLE I
DEBT TO GDP (%)

	2008	2009	2010	211	2012
Value criteria	**60**	**60**	**60**	**60**	**60**
Czech Republic	29	34	38	41	43
Hungary	73	80	81	81	74
Poland	47	51	55	56	55
Slovakia	28	36	41	43	46

Source: IMF [22]

In general, this convergence criterion is the weakest point of the absolute majority of the member countries of the European Union. Except for Hungary, the required criterion is met by all followed countries during the monitored period. The state of the Czech Republic, Poland and Slovakia, in particular, is very pleasing in this regard, compared not only to members of the European Union but – and this is very serious – also to the euro zone.

B. Price Level

The inflation rate is one of the indicators with a lower level of disharmony compared to other macroeconomic indicators of harmonisation within the euro zone [9].

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TABLE II
INFLATION - HICP (%)

	2008	2009	2010	211	2012
Average of 3 EU lowest rate	2.6	0.0	0.9	1.6	1.2
Value criteria	**4.1**	**1.5**	**2.4**	**3.1**	**2.7**
Czech Republic	6.3	1.0	1.5	1.9	3.4
Hungary	6.1	4.2	4.9	3.9	5.6
Poland	4.2	3.5	2.5	4.3	3.9
Slovakia	3.9	0.9	0.7	4.1	3.6

Source: OECD [23]

The price level stability and its development is mainly a result of an efficient work of the central bank of the given economy. The available data suggest that this indicator was only achieved by two of the followed countries in the period of three years. By Slovakia the criterion was achieved from 2008 to 2010. This healthy development was surely positively influenced by the convergence criterion. However, it is clear from the later years that the National Bank of Slovakia was no longer able or "motivated" to control the price level development in a stricter manner. The Czech Republic succeeded in this criterion, from 2009 to 2011.

C. Long Term Interest Rate

The biggest and fastest growing disharmony can be seen in the long term interest rates, reflecting differentially intense debt problems across the euro zone countries [3]

TABLE III
LONG TERM INTEREST RATE (ANNUALLY IN %)

	2008	2009	2010	211	2012
Average of 3 EU lowest rate	4.2	3.9	4	3.3	1.8
Value criteria	**6.2**	**5.9**	**6**	**5.3**	**3.8**
Czech Republic	4.17	3.91	3.91	3.39	1.84
Hungary	5.39	6.26	6.06	5.89	3.74
Poland	8.15	7.92	7.95	9.75	6.11
Slovakia	4.72	4.63	4.18	4.82	2.25

Source: Bloomberg [20]

The long term interest rate indicator is important for the financial stability that has a strong role in the policy of central banks, in addition to inflation targeting. The Czech Republic was meeting this criterion throughout the monitored period, the same as Slovakia that already was in ERM II and subsequently in the euro zone. The conditions in the Czech Republic are better than in Slovakia in terms of the interest rates. This is obviously given by the higher rating of the Czech Republic.

D. Government Deficit

The sustainable level of indebtedness of the public sector is a pillar of the entire euro zone. The given fiscal criteria were analysed by e.g. Blanchard [2] and Wyplosz [18] who used dynamic models to learn the sustainable level of indebtedness of the public sector. The fiscal imbalance has been gradually growing and currently represents the main source of the present problems of the euro zone. Most of the EMU members are now facing problems connected with the hypertrophy of the public debts.

TABLE IV
GOVERNMENT DEFICIT/SURPLUS (IN % OF GDP)

	2008	2009	2010	211	2012
Value criteria	**-3**	**-3**	**-3**	**-3**	**-3**
Czech Republic	-2.2	-5.8	-4.8	-3.2	-3.3
Hungary	-3.7	-4.5	-4.5	4.3	-3.0
Poland	-3.7	-7.4	-7.9	-5.0	-3.5
Slovakia	-2.1	-8.0	-7.7	-4.9	-4.6

Source: OECD [23]

This criterion seems to be the most difficult for the followed countries to achieve from all of the convergence criteria. The situation is certainly given by the post-crisis development as the drop in the economic output results in lower budget revenues while on the other hand, the government stimuli are sometimes supported just for the purpose of starting the economic growth.

E. Unemployment Rate

During the financial crisis, unemployment grew in almost all countries. The rate in the most affected countries started to diverge from other countries, which has led to an increased disharmony between individual countries [3].

As to the labour market flexibility, it is important to focus primarily on the long term unemployment and regional differences in the unemployment rate. High long term unemployment means a high structural element of unemployment. Regional differences in unemployment can be connected with a low regional mobility of the work force [11], [19].
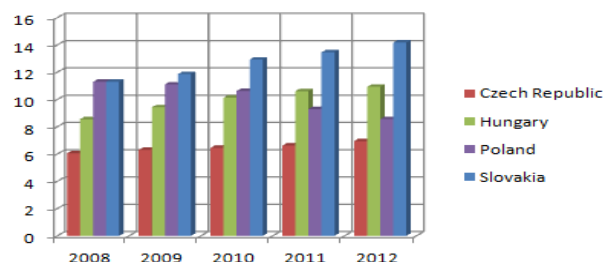

Fig. 1 Unemployment rate (%)
Source: Ameco – EU Commission [18]

The best results in respect of this indicator are reported for the Czech Republic. Moreover, this country keeps a stable unemployment rate throughout the period. Slovakia, on the other hand, is behind all of the followed countries in this indicator, with unemployment rising in the period under review. So we can derive that the exchange rate straitjacket did not allow relieving the economy and encouraging the labour market by devaluation. An interesting development can be seen in Poland where the rate of unemployment has been decreasing throughout the monitored period.

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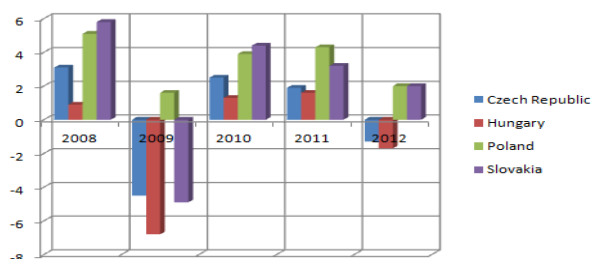Vol:7, No:5, 2013

F. Gross Domestic Product

Fig. 2 GDP growth (%)
Source: Eurostat [21]

The picture shows the impact of the crisis. It is Slovakia where the biggest slump as a result of the crisis is reported. It can be expected that other countries were able to suppress the impact of the crisis thanks to the exchange rate pillow. Nevertheless, the highest level of "improvement" between 2009 and 2010 is recoded for Slovakia. This can lead to a hypothesis that the euro has a positive influence on national economy at a time of a stable growth period but can contribute to a much worse fluctuation at a time of turbulences as impacts of external shocks cannot be reduced due to the exchange rate.
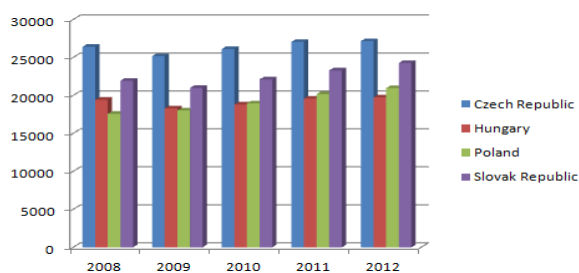
G. GDP per Head

Fig. 3 GDP per capita (USD)
Source: World Bank [25]

The graph suggests the Czech Republic, followed by Slovakia, has the highest level of this indicator throughout the monitored period. So the euro does not seem to help increase the living standard of the Slovak population in this regard. The development in Poland is interesting in terms of the impacts of the financial crisis. Unlike other followed countries, Poland did not see any drop between 2008 and 2009.
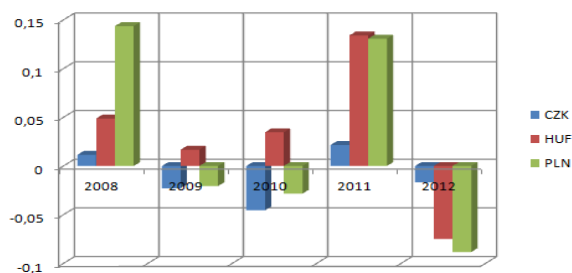
H. Exchange Rate

Fig. 4 Change in the exchange rate (%)
Source: Data was used from Patria [24]

I. Exchange Rate Volatility

TABLE V
STANDARD DEVIATION OF EXCHANGE RATE

	2008	2009	2010	2011	2012
CZK	0.795	0.896	0.535	0.478	0.343
HUF	12.053	12.298	6.668	15.474	8.421
PLN	0.217	0.195	0.081	0.215	0.099

Source: Patria [24]

The statistical behaviour suggests that it is the Hungarian forint that responds the most to a specific market situation. It is surely given by the certain level of uncertainty of investors and the credit situation abroad. Hungary was not in a good economic condition throughout the monitored period, which is why the impact of the crisis on this country was more striking. Therefore, this currency cannot be regarded as the optimum benchmark. A comparison of the currency of the Czech Republic and the currency of Poland seems to be more appropriate. As the GDP macroeconomic development and unemployment graph suggests, Poland was in a better position during the period under review. That would correspond to a standard deviation of the Polish zloty that is the lowest across all the periods. On the other hand, it can be derived that that exchange rate of the Czech crown responded more flexibly to the market situation, enabling the economy of the Czech Republic to utilise more the currency instrument for the control of its development.

IV. CONCLUSIONS

In our article, we have examined the suitability of the monetary union for a country when its economy is in decline. We followed a period that was hit by the consequences of the crisis since 2008. In our example, we have examined the comparison of three countries with their own currency and one country that was during the reference period in euro zone. The selected countries are similar not only for their territorial location, but also they have a higher degree of similarity in economically point of view. We could observe the benefit of a membership in euro zone in the time of an economic stability and a steady growth. It can be assumed that the positive effects can be assigned to the removal of currency risk and the reduction of transaction costs. On the other hand, in times of economic downturn and in a turbulent period the usefulness of the mechanism of exchange rate to support the economy was demonstrated. We believe that at a time of strong economic fluctuations the effect of currency bondage will be rather negative. The result will be worse if there is a different performance of the economies across euro area countries.

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