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INADEQUACY OF THE ECB'S MONETARY POLICY IN THE EU ECONOMIES OUTSIDE THE EUROZONE

NIEADEKWATNOŚĆ POLITYKI PIENIĘŻNEJ EBC W UNIJNYCH GOSPODARKACH SPOZA STREFY EURO

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Summary: The aim of the article is to estimate the extent of the inadequacy of the European Central Bank's (ECB's) monetary policy to the economies of those EU member states which have not joined the euro area so far. The assessment of the extent of maladjustment of the single monetary policy is based upon a counterfactual analysis and is carried out for the economies with the so-called derogation from the Economic and Monetary Union (EMU) since the ECB started to operate. The status of a derogation means that a member state is formally obliged to adopt the single currency euro and must face the consequences resulting from the single monetary policy in the context of economic macro-stabilization. The results obtained may be useful in a discussion on the moment of accession to the eurozone.

Keywords: inadequacy, ECB, monetary policy, eurozone, EU economies.

Streszczenie: Celem artykułu jest oszacowanie stopnia nieadekwatności polityki pieniężnej Europejskiego Banku Centralnego (EBC) w unijnych gospodarkach państw, które jak dotąd nie przystąpiły do strefy euro. Ocena tego niedopasowania zostanie dokonana na podstawie kontrfaktycznej analizy polityki EBC oraz wewnętrznych uwarunkowań gospodarek z tzw.

derogacją Unii Gospodarczej i Walutowej (UGiW) od początku funkcjonowania EBC. Status z derogacją oznacza formalne zobowiązanie kraju członkowskiego do przyjęcia wspólnej waluty euro i konieczność stawienia czoła konsekwencjom wynikającym z jednolitej polityki pieniężnej w kontekście stabilizacji makroekonomicznej. Uzyskane rezultaty mogą okazać się przydatne w dyskusji nad momentem przystąpienia do strefy euro.

Słowa kluczowe: nieadekwatność, EBC, polityka pieniężna, strefa euro, gospodarki UE.

1. Introduction

The phenomenon of the inadequacy of the single monetary policy is connected with the fact that a centralized monetary policy, effective at the level of the whole currency area, does not have to be 'optimal' from the viewpoint of individual member states.[1] The reason why the single monetary policy does not match the individual requirements of each economy are the discrepancies of a structural and cyclical nature existing between the economies of the member states.[2] A consequence of those discrepancies is a different level of economic development and an imperfect synchronization of the business cycles [Urbanowicz 2016, p. 666].[3] As results from a review of the ECB research, the discrepancies are reflected in the persistence of inflation which is a primary reason for the differentiation of inflation rates in the eurozone and, consequently, interest rates as well [Paluszak 2006, pp. 67-70]. Thus the ECB is trying to reduce the differences in inflation rates, aiming to stabilize the average inflation rate in the eurozone, especially by means of the base interest rate. Due to this fact, the problem of inadequacy of the single monetary policy is still a very important and current issue for the euro area, for the EU member states connected with the EU economically and financially and also for the effectiveness of stabilization activities undertaken by the ECB. In the related literature one may find some efforts to measure the phenomenon of the inadequacy of the single monetary policy, referring first of all to the members of the eurozone. The first analyses of this type had appeared even before the eurozone was established [Eichengreen 1992; Cecchetti 1999]. A motivation for those studies came from the doubts of economists as regards plans to create a monetary union consisting of significantly different economies. Studies on the extent of the inadequacy of the ECB's policy in individual member states continued in the subsequent years [Hayo 2006; Blanchard 2006; Flaig, Wollmershäuser 2007; Sturm, Wollmershäuser 2008; Lee, Crowley 2009; 2010; Van Poeck 2010; Reichenbachas 2013; Barigozzi, Conti, Luciani 2014; Quint 2014;

[1] The problems of asymmetric impact exerted by the centralized monetary policy in the monetary union were dealt with already in 1977 by H.G. Grubel. See: Grubel [1977].

[2] It is difficult to completely level out those discrepancies by means of fiscal instruments due to dilemmas connected with the budget and the EU's multiannual financial frameworks in the period 2014-2020. For more on this subject see: Paluszak, Sapała [2013, pp. 8-13].

[3] For more on this subject see: Urbanowicz [2014; 2015].

Quint 2016; Gajewski 2016]. Due to a different time and spatial range, as well as the methodology of individual research, the conclusions differ too and are not fully comparable. Nevertheless, all the articles emphasize the fact that the monetary policy run by the ECB was not equally matched to the needs of individual member states of the eurozone [Urbanowicz 2015, pp. 14-15].

The aim of this article is to conduct a simulation analysis of the extent of the inadequacy of the ECB's monetary policy to the needs of the EU economy of the countries which have not joined the eurozone so far, i.e. Sweden (in the EU from 1995), the Czech Republic, Poland and Hungary (in the EU from 2004), Bulgaria and Romania (in the EU from 2007) and Croatia (in the EU from 2013). The chosen countries have the status of a state with a derogation. This status means that they are formally obliged to adopt the euro. Therefore, each of the above-mentioned economies will have to face the consequences resulting from the single monetary policy in the sphere of macroeconomic stability. The results of the conducted simulations may prove useful in a discussion about the moment of joining the euro area.

The aim of the article and the main areas of analysis connected with it determined its structure and empirical character. The article consists of two main parts. The first one defines the scope of subject matter, time range of the study and research method. The second part presents the results of analyses concerning the extent of the inadequacy of the ECB's monetary policy, providing the grounds for an assessment of the costs connected with the phenomenon of inadequacy in the economies outside the eurozone. The most important conclusions are formulated in the final remarks.

2. The subject matter of analyses, time range and research method

The conducted studies comprised a counterfactual analysis concerning the extent of inadequacy of the ECB's monetary policy to the economic situation of those EU countries which have not joined the eurozone so far, i.e. Bulgaria, Croatia, the Czech Republic, Poland, Romania, Sweden and Hungary. In the analysis the so-called stress indicator was used. It was defined by R. Clarida et al. [1998] as the difference between the ECB's base interest rate for the eurozone as a whole and the 'optimal' interest rate for a given country belonging to the single currency area. The ECB's base interest rate is the interest rate on the main refinancing operations.[4] An assessment of the 'optimal' interest rate is usually performed by means of Taylor's rule for each of the analyzed economies.[5] As regards the countries under analysis, it was assumed that the 'optimal' interest rates, analogous to the ECB's base rate, were those set by their independent central banks: Bulgaria (base interest rate), Croatia (CNB discount rate), Czech Republic (Czech: diskontní sazba ČNB; English:

[4] The main refinancing operations are the most important operations of the open market conducted by the Eurosystem. They play a fundamental role in controlling interest rates, liquidity management on the market and signalling the stance of monetary policy [ECB 2011, chapter 3, section 3.1.2].

[5] For more about Taylor's rule see: Taylor [1993].

2W repo rate), Poland (Polish: stopa referencyjna NBP; English: NBP reference rate[6]), Romania (Romanian: dobânda de politică monetară; English: policy rate;), Sweden (repo rate) and Hungary (Hungarian: jegybanki alapkamat mértéke; English: base rate). A lower absolute value of the difference between the ECB's base interest rate and the interest rate 'optimal' for a given economy shows a better match of the ECB's policy to the needs of that country's economy.

In the analysis the historical series of daily data for the period of 1 January 1999 to 31 March 2019 were used. The beginning of the analysis is the day on which the single European currency was introduced into non-cash circulation and the day on which the ECB started implementation of the single monetary policy. On the basis of the obtained results an attempt was made to assess the risk of occurrence of the single policy's inadequacy in the analyzed economies in the future. The data used in the research come from the websites of the central banks.[7]

3. The phenomenon of the inadequacy of the ECB's policy in individual EU countries – results of the simulation

The scope of the inadequacy of the ECB's single policy in individual countries is presented in the graphs where the same scale is applied in order to compare the obtained results. The countries were divided into subgroups distinguished on the basis of the date of accession to the EU. The first one was Sweden which joined the

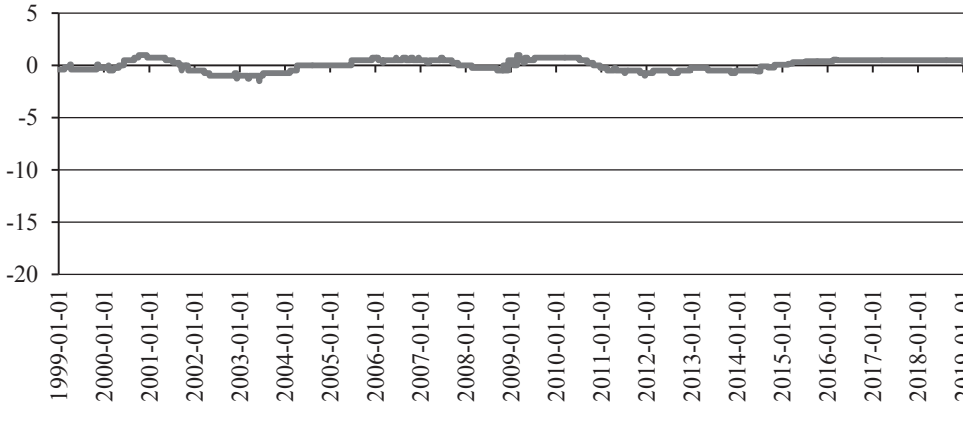

Fig. 1. The stress indicator in Sweden in the period 01.01.1999-31.03.2019

Source: the authors' own calculations.

[6] This rate defines the profitability of the main NBP's refinancing operations conducted within the frameworks of the open market operations [NBP 2003, p. 20].

[7] Websites of the central banks: euro area (www.ecb.eu), Bulgaria (www.bnb.bg), Croatia (www.hnb.hr), Czech Republic (www.cnb.cz), Poland (www.nbp.pl), Romania (www.bnr.ro), Sweden (www.riksbank.se), Hungary (www.mnb.hu).

EU on 1 January 1995 (Figure 1). Next, on 1 May 2004 the Czech Republic, Poland and Hungary were accepted as members of the EU (Figure 2), followed by Bulgaria and Romania which acceded to the Union on 1 January 2007 (Figure 3). Croatia was the last country to join the block on 1 July 2013 (Figure 4). In order to compare the extent of maladjustment of the ECB's policy to the conditions in individual countries, the graphic analysis of inadequacy is supplemented by the table which shows the

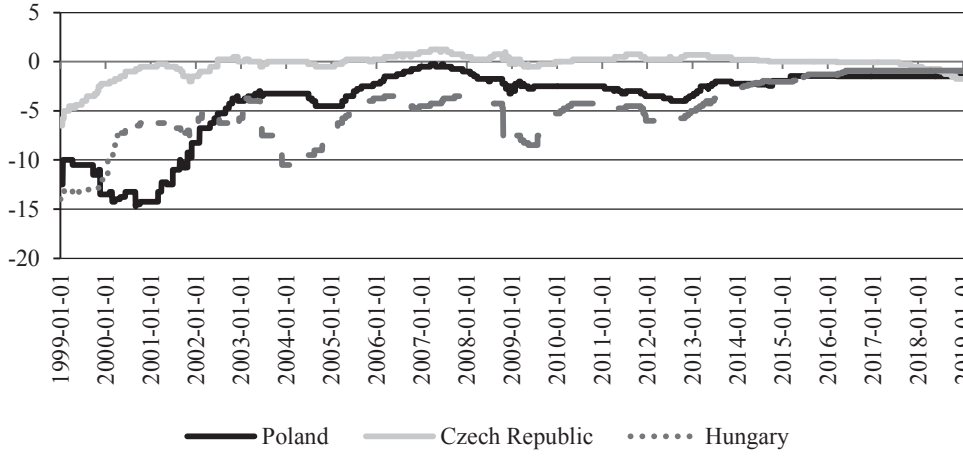

Fig. 2. The stress indicators in Poland, the Czech Republic and Hungary in the period 01.01.1999-31.03.2019

Source: the authors' own calculations.

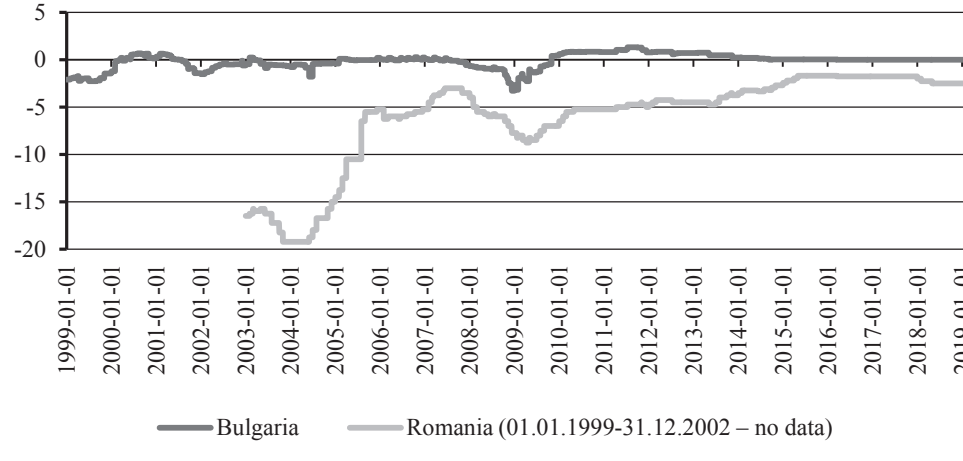

Fig. 3. The stress indicators in Bulgaria and Romania in the period 01.01.1999-31.03.2019

Source: the authors' own calculations.

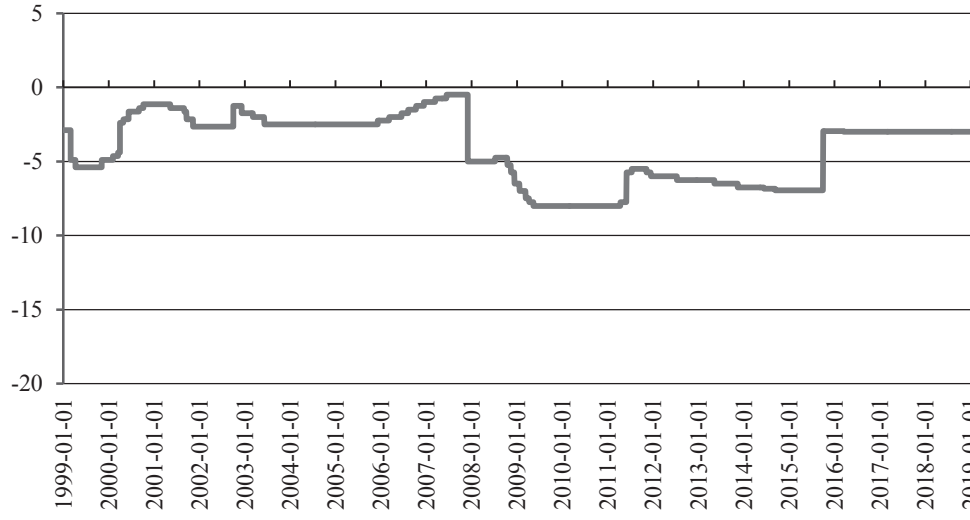

Fig. 4. The stress indicator in Croatia in the period 01.01.1999-31.03.2019

Source: the authors' own calculations.

Table 1. Average values of stress indicator in individual countries in the period of analysis broken down into the pre and post-crisis periods

	Average value of stress indicator throughout the whole period of analysis	Average value of stress indicator before crisis (01.01.1999- -08.08.2007)	Average value of stress indicator after the beginning of crisis (09.08.2007- -31.03.2019)	General assessment
Sweden	0.03	0.05	0.38	ECB's monetary policy too restrictive
Czech Republic	–0.24	–0.61	–0.38	ECB's monetary policy too expansive
Poland	–3.90	–6.50	–1.00	ECB's monetary policy too expansive
Hungary	–4.92	–8.89	–2.33	ECB's monetary policy too expansive
Bulgaria	–0.14	–1.09	–0.05	ECB's monetary policy too expansive
Romania	–6.01	–3.00	–2.75	ECB's monetary policy too expansive
Croatia	–4.13	–1.70	–1.75	ECB's monetary policy too expansive

Source: the authors' own calculations.

average values of stress indicator throughout the whole period of analysis, as well as those in the pre and post-crisis period for each of the analyzed economies[8] (Table 1).

The results obtained for Sweden's economy stand out clearly against the background of the countries under analysis. The stress indicator went up and down alternately but – which is really significant – fluctuated around 0. This means that the ECB's policy very closely approximated the stabilization needs of Sweden's economy throughout the whole studied period. This is confirmed by the value of the stress indicator for Sweden which reached the closest value to 0 as compared with the analyzed group of countries. It should be emphasized that only in Sweden the mean values of stress indicator were positive for the whole period and for both sub-periods. This means that despite a great similarity in the sphere of interest rates, the ECB's policy turned out to be more restrictive as compared to the policy run by Sweden's Riksbank.

In the Czech Republic the stress indicator also oscillated around 0, which proves a relatively high degree of adjustment of the ECB's policy to the needs of the Czech economy. However, in contrast to Sweden, the average values of the stress indicator for the Czech Republic were negative, which indicates a too expansive character of the ECB's policy for the internal conditions of the Czech economy in a major part of the research period.

Poland and Hungary were characterized by a very similar tendency in the development of the stress indicator. In both cases, throughout the whole period of analysis, the stress indicator was negative and not even once did it exceed the level of 0. Negative values of the stress indicator show the excessively expansive character of the ECB's monetary policy compared with the Polish and Hungarian economic needs. The average values of the stress indicators in these countries show the relatively high degree of inadequacy of the ECB's policy throughout the whole period of analysis. The graphic analysis, however, indicates clearly that the degree of mismatch significantly decreases over time. The Romanian stress indicator is characterized by a very similar development trend to that of Poland and Hungary but the degree of the EBC's policy mismatch turned out to be much higher. Bulgaria joined the EU together with Romania, and its case is very interesting. Despite a relatively short 'internship' in the EU, it is Bulgaria which has the second lowest stress indicator over the whole period of analysis. This means that the ECB's policy to a large extent matched the needs of the Bulgarian economy. The reason for such a situation is the currency regime, the so-called *currency board* introduced on January 1, 1997. The Bulgarian lev is linked to the euro and has a full coverage in foreign currency. An advantage of this system is a higher confidence in the Bulgarian currency, which results in low interest rates.[9]

[8] 9 August 2007 was assumed to be the beginning of the crisis, after ECB [2010, p. 64].

[9] In 2018 the Bulgarian government officially declared the country's intention to join the eurozone as soon as 2022. However, due to an insufficient level of economic development of this country and weak state institutions, this plan seems to be too optimistic [Pieńkowski 2018, p. 2].

The last of the analyzed cases is Croatia where the degree of inadequacy of the ECB's policy should be assessed as relatively high. During the whole period under analysis this policy was too expansive as compared to the needs of Croatia's economy. In the case of Croatia it is difficult to clearly determine whether the extent of inadequacy of the ECB's policy was decreasing in the course of time. This situation may be explained by the length of the period of the country's functioning in the EU, as Croatia is its 'youngest' member.

The occurrence of the crisis did not affect diametrically the assessment of the adequacy of the ECB's policy to the needs of each of the analyzed economies. The calculated mean value of stress indicator in the pre and post-crisis period does not change from positive to negative (or vice versa) in any of them. Nevertheless, it is noticeable that in the majority of the countries under analysis, i.e. in the Czech Republic, Poland, Hungary, Bulgaria and Romania, the mean value of the stress indicator in the post-crisis period approximated 0. As regards expansiveness, this means a diminished mismatch of the ECB's monetary policy to their internal conditions. This results from the fact that those economies, in a similar way to the eurozone, witnessed a cycle of reductions of interest rates in response to the crisis. An exception was Sweden and Croatia. In the former the mean value of the stress indicator increased, and in the latter it decreased (moving away from 0). In both cases this should be interpreted as an increased mismatch of the ECB's monetary policy. Responding to the crisis, both economies also reduced interest rates but Sweden's economy needed lower rates than those set for the euro area. Croatia, in turn, required much higher rates than those set by the ECB for the EU when the crisis started.

4. Conclusion

A correct assessment of the costs caused by the phenomenon of the inadequacy of the single monetary policy is an important component in the balance of benefits and costs resulting from the accession of a given country to the eurozone. The results of the conducted simulation show that from the beginning of 1999 the ECB's policy has not been fully adjusted to stabilization needs of all the economies. The results obtained from the analysis provide the grounds for the conclusion that over the course of time, when a given country's economy functions in the EU for a longer period, the extent of mismatch of the single policy becomes smaller. This policy turned out to be most appropriate to the conditions in Sweden, Bulgaria and the Czech Republic. In the case of Poland, Hungary, Croatia and Romania, the extent of the mismatch was larger. The potential accession of those countries to the eurozone earlier, would probably involve relatively high costs caused by the phenomenon of the inadequacy of the ECB's single policy. However, judging by the obtained results, it may be assumed that in the future the costs of this phenomenon will be relatively small in all of the analyzed countries except Croatia. This assumption is justified by

the development of the stress indicators over time because in the majority of the analyzed economies those indicators are moving towards 0. An already mentioned exception is Croatia for which (due to its relatively short period of functioning in the EU) it is difficult to draw a clear conclusion whether the extent of the mismatch will decrease in the course of time.

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