THE IMPACT OF THE APPLIED EXCHANGE RATE REGIMES ON THE EXTERNAL BALANCE OF EUROPEAN TRANSITION COUNTRIES

Vlado Vujanic[1] MSc

The Republic of Srpska, Ministry of Finance, Bosnia and Herzegovina

Professor Vasilj Zarkovic[2] PhD

University of Banja Luka, Faculty of Economics Banja Luka,

Dragan Gligoric[3] PhD

University of Banja Luka, Faculty of Economics Banja Luka, Bosnia and Herzegovina

Abstract*: The applied exchange rate regime, through the influence on the movement of the exchange rate, the volume of money supply and the level of interest rates, significantly affects the achievement of the internal and external balance of every country. In the later stages, European transition countries, despite their similar initial problems and final objectives, applied different exchange rate regimes adapted to the economic circumstances and needs of the country. The paper aims to determine to what extent the applied exchange rate regimes influenced the external balance of these countries in the period from 2000 to 2014. The research encompasses ten transition countries grouped according to the exchange rate regime and the level of development. The results of the research, obtained by the econometric analysis and the Student's t-test, show that the effects of floating regimes vary depending on the level of development of the countries. It was determined that floating exchange rate regimes, in the long run, lead to significantly lower current account deficit compared to fixed exchange rate regimes, in more developed, but not in less developed European transition countries.*

Key words: *transition countries, exchange rate regime, current account balance*

INTRODUCTION

Achieving internal and external balance, along with continuous economic growth, presents the key economic goal of every country. The country maintains the state of internal balance when its production

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[1] MSc in Economics, e-mail: vladoo1888@gmail.com

[2] PhD in Economics, e-mail: vasilj.zarkovic@efbl.org

[3] PhD in Economics, e-mail: dragan.gligoric@ef.unibl.org

resources are fully engaged and the price level is stable.External balance represents a certain target state of the current account towards which economic policy makers aspire, and which may imply a lower deficit, namely, a current account surplus.[4]The exchange rate regime, as a manner of establishing and managing changes in the exchange rate, influences how and to what extent the monetary authority will control not only the movement of the exchange rate, but also the volume of money and the level of interest rates, and thus how and how much it can affect international flows of goods and capital flows, price stability, production and employment. In that context, one of the key assignments of the monetary authorities is to choose an appropriate exchange rate regime, in line with the conditions of the national economy, and in accordance with defined macroeconomic goals.In general, the exchange rate policy must correspond to the requirements of foreign trade competitiveness of the national economy, but also to the requirements of internal macroeconomic stability.

The most common classification of the exchange rate regimes is into fixed and floating regimes within which there are numerous regimes that a country may apply, depending on the intervention policy of the monetary authorities on the foreign exchange market. The IMF exchange rate classification from 1998, based on *de facto* exchange rate policies, distinguishes eight exchange rate regimes, grouped according to the increasing degree of flexibility: no separate legal tender, currency board arrangements, conventional fixed peg, pegged exchange rates within horizontal bands, crawling pegs, crawling bands, managed floating and independently floating. In order to enable greater coherence and objectivity and improve transparency, the aforementioned system of the exchange rate regimes was modified in 2009.[5]

Despite similar initial economic problems and ultimate goals, the experience has shown, especially in the period after solving initial transition difficulties, that the choice of exchange rate regimes among European transition countries was significantly different - from independently floating to currency board arrangements, and acceptance of the euro as a common currency. An important aspect of the exchange rate regime is the manner it affects the balance of payments[6]. The paper aims to determine whether the differences in the applied exchange rate regimes, after the period of macroeconomic stabilization and in the circumstances

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[4] Krugman, R. P. i Obstfeld, M. (2009). *Međunarodna ekonomija*. Beograd: Datastatus.

[5] Habermeier, K., Kokenyne, A., Veyrune, R. and Anderson, H. (2009). *Revised System for the Classification of Exchange Rate Arrangements*. International Monetary Fund. WP/09/211.

[6] When talking about the balance of payments, it usually refers to the balance of current transactions.

characterized by the European transition countries, led to differences in their foreign economic performance, observed through the current account balance.

The basic guideline in the research process is the question *to what extent the applied exchange rate regimes affect the external balance of transition countries*. A possible answer to the research question is that the use of floating regimes in transition countries allows faster establishment of external balance in relation to the application of the fixed exchange rate regimes. Namely, by the application of floating exchange rate regimes, a country gains an important adjustment mechanism of the balance of payments which facilitates its balancing based on the principles of market laws, and through automatic changes in the nominal level of the exchange rate. Furthermore, in the circumstances of maintaining the nominal exchange rate unchanged and due to the increasing openness of the national economy, there is a real danger that the inflow of foreign capital, as the inevitable accompanying phenomenon of the transition process, would lead to the appreciation of the real exchange rate through the creation of inflationary differentials (a higher level of inflation in relation to the country of anchor), in the long run. This affects the reduction of the competitiveness of the domestic economy on the world market, with negative consequences on the current account balance.

In addition to the *Introduction* and *Conclusion,* the paper consists of four interconnected segments.*The first part* of the paper discusses general experiences in the application of exchange rate regimes in the European transition countries that are on their path to the EU or have become its members. *The second part of the paper* provides an overview of the main results of the previous empirical research of the effects of the applied exchange rate regime on the current account balance. *The third segment of the paper* describes research methods, used data sources and samples. *The fourth part* is an empirical part determining the effect of the applied exchange rate regime on the external balance of the European transition countries, by the use of an appropriate statistical tool. Ultimately, the key results of the conducted research are summarized in the *Conclusion.*

1.   GENERAL EXPERIENCES IN THE APPLICATION OF EXCHANGE RATE REGIMES IN EUROPEAN TRANSITION COUNTRIES

The beginning of the transition process has been characterized by the pronounced disorders of internal and external balance, as well as the need for faster economic development and integration into the regional and global economy. The choice of an adequate exchange rate regime was one of the significant dilemmas of transition countries in circumstances where internal stabilization (reducing inflation) requires a more stable exchange rate, while external stabilization requires a more competitive and more flexible peg of domestic currency.Given that the inflation was the biggest

problem and the greatest concern at the beginning of the transition process, many European transition countries, which entered the transition process relatively early, such as Poland, the Czech Republic, Hungary, Slovakia, Estonia, Croatia, and Macedonia, opted for some form of fixed exchange rate in providing support to the disinflation process[7],and giving the exchange rate the role of a nominal "anchor".Countries such as Albania, Bulgaria, Latvia, Lithuania, Romania and Slovenia have targeted a certain monetary aggregate, often insufficiently transparent, in order to stabilize prices, while the exchange rate is fundamentally determined by market forces. Due to the insufficient level of exchange rate reserves necessary to maintain the peg, or due to the belief that in the circumstances of the increasing openness of national economies, the exchange rate market formation will prevent larger oscillations of economic activity, these countries opted for more flexible exchange rate regimes, mostly for independently floating. However, after a relatively short period, Lithuania, Latvia and Bulgaria, having failed to achieve the expected progress in fighting inflation and putting it under control, were forced to carry out monetary reform and move to the fixed exchange rate regime. Bosnia and Herzegovina, Serbia[8] andMontenegro are countries where, due to expressed political instability and war events, the transition process was discontinued, with a delay of almost a decade, and was continued with the application of fixed exchange rate regimes. Therefore, in the initial transition phase, given that the inflation was the biggest problem of most European transition countries in creating and establishing a framework of monetary stability, as one of the priorities for the successful implementation of the transition process, the priority was given to a fixed exchange rate regime which as a nominal "anchor" of the monetary but also the overall macroeconomic policy was to support the disinflation process.

The experience of many transition countries has confirmed that the fixed exchange rate policy, as part of the anti-inflation strategy, has contributed to macroeconomic stabilization reflected in a relatively rapid reduction of the inflation rate to single digits, creating thus conditions for the improvement of structural reforms.Price stabilization and the continuation of structural reforms are followed by the inflow of foreign capital, as an accompanying phenomenon of the transition process. Nonetheless, capital inflow in the circumstances of maintaining the

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[7] Fischer, S. and Sahay, R. (2000). *The Transition Economies After Ten Years.* National Bureau Of Economic Research. Working Paper 7664.

[8] Although the monetary authorities of Serbia, after political changes in October 2000, announced the use of the managed floating regime, Emilija Beker Pucar, in her unpublished dissertation "*Upravljano fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju*", finds that the fixed rate regime was applied in conventional form until January 2003.

nominal exchange rate unchanged created inflationary pressure. This led to the appreciation of the real exchange rate and deterioration in the international competitiveness of the national economy, and consequently to the increased risk of rapid devaluation. Due to the increasing openness of national economies, the appreciation trend of the real exchange rate caused some transition countries to abandon fixed and accept more flexible forms of the exchange rate and monetary policy regime, with a view to stimulating competitiveness of the economy[9].

On the basis of the study by Carmen Reinhart and Kenneth Rogoff[10]"The Modern History of Exchange Rate Arrangements: a Reinterpretation" and the study "The Evolution of Exchange Rate Regimes Since 1990: Evidence from De facto Policies" conducted by Andrea Bubula and Inci Ötker-Robe[11]and the IMF publication, primarily the report on exchange regimes and limitations, but also based on my own research, it has been determined that Poland, the Czech Republic, Slovakia, Hungary and Serbia, following the initial macroeconomic stabilization established with the help of the fixed exchange rate and most often under the influence of capital inflows, gradually moved to more flexible forms of exchange rate regimes (horizontal bands, crawling peg and crawling band), in order to finally adopt the regime of managed/independently floating exchange rate. This practically means that the floating exchange rate regimes in these countries are still in use, except in the case of Slovakia, which, at first with the acceptance of the ERM II mechanism, and then the single currency - the euro, returned to fixed exchange rate regimes.

The European transition countries, which, after the initial macroeconomic stabilization, decided to apply some form of fixed exchange rate regimes, given the state of internal and external balance, include: Estonia, Lithuania, Latvia, Bosnia and Herzegovina, Bulgaria, Montenegro and Croatia. Estonia, Lithuania (until entry into the Eurozone), Bulgaria and Bosnia and Herzegovina apply the currency board arrangements. Before the entry into the Eurozone, Latvia applied conventional fixed peg. Montenegro uses the euro as the official means of payment and, accordingly, a fixed regime in the form of official euroisation, while Croatia and Macedonia, by linking their currencies to the euro, apply the classic form of a fixed regime with the possibility of peg adjustment. It can be concluded that countries such as Albania,

[9] Beker–Pucar, E. (2010). *Upravljano fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju*. Unpublished dissertation. Subotica: Faculty of Economics. University of Novi Sad.

[10] Reinhart, C. M. and Rogoff, K. S. (2002). *The Modern History of Exchange Rate Arrangements: a Reinterpretation*. National Bureau Of Economic Research.Working Paper 8963.

[11] Bubula, A. and Ötker-Robe, I. (2002). *The Evolution of Exchange Rate Regimes Since 1990: Evidence from De facto Policies*. International Monetary Fund. WP/02/155.

Romania and Slovenia, both in the initial and in the next stages of the transition process, applied floating exchange rate regimes and/or some form of so-called soft peg (usually in the form of crawling bands), although the exchange rate did not play the role of a nominal "anchor". Unlike Slovenia, which, like Slovakia first accepted the ERM II mechanism and then the single currency - the euro, returned to the fixed exchange rate regime, Albania and Romania today apply floating exchange rate regimes.

2.   AN OVERVIEW OF PREVIOUS RESEARCH

Many empirical studies find the connection between fixed exchange rate regimes and and bilateral trade, confirming its positive effects on the volume of foreign trade flows. In the study entitled "National Money as a Barrier to International Trade: The Real Case for Currency Union", based on a gravity model, Andrew Rose and Eric van Wincoop[12] analyze the influence of the currency union on international trade in the 1970-1995 period. They conclude that the elimination of national money, as a significant obstacle to international trade, through a currency union reduces trade barriers and in that way leads to a significant increase in trade. Furthermore, the authors estimate that EMU can lead to an increase in Eurozone trade by more than 50%.

Analyzing the effects of various *de facto* exchange rate regimes (according to the Reinhart & Rogoff classification, 2004) on bilateral trade during 1973-1998, Adam Christopher and David Cobham[13] in the study "Exchange rate regimes and trade" obtained the results indicating that, in addition to the currency union, other fixed exchange rate regimes may also be significantly more favorable to trade compared to floating exchange rates, since they reduce the costs of uncertainty and transactions.

While some studies confirm the positive effect of fixed exchange rate regimes on bilateral trade, numerous studies on the other hand find empirical evidence supporting the view that more flexible exchange rate regimes facilitate the balancing of the current account. On the basis of descriptive analysis of the sample encompassing 24 transition countries divided into three groups of exchange rate regimes (fixed, intermediate fixed and floating) during 1991-1998, Ilker Domac, Kyle Peters and Yevgeny Yuzefovich[14] in the paper "Does the Exchange Rate affect   Macroeconomic   Performances?   Evidence   from   Transition

[12] Rose, A. K. and Wincoop, E. (2001). *National Money as a Barrier to International Trade: The Real Case for Currency Union*. Retrieved 25.07.2017 from http://www.people.virginia.edu/~ev4n/papers/CU.PDF

[13] Christopher, A. and Cobham, D. (2005). *Exchange rate regimes and trade*. Centre For Economic Reform And Transformation. Edinburgh: Heriot-Watt University. Discussion Paper 2005/05.

[14] Domaç, I., Peters, K. and Yuzefovich, Y. (2001). *Does the Exchange Rate Regime affect Macroeconomic Performances? Evidence from Transition Economies*. Policy Research. World Bank. WP 2642, pp. 1-76.

Economies" note that countries with fixed exchange rate regimes recorded a higher average value of the current account deficit (-5.2% of GDP) compared to the countries that applied intermediate (-4.7% of GDP) and floating regimes (-3.9% of GDP). The analysis showed that the share of the current account deficit in GDP in the observed period has a declining trend from fixed - through intermediate to floating exchange rate regimes.

Examining the relationship between the exchange rate regime and the rate of the current account adjustment on a sample of 11 countries from Central, Eastern and Southeastern Europe, from 1994 to 2007, Sabine Herrmann[15] in her paper "Do we really know that flexible exchange rates facilitate current account adjustment? Some new empirical evidence for CEE countries", obtains empirical results confirming that there is a significant connection between the exchange rate regime and the adjustment rate of the current account balance. The author concludes that if the exchange rate regime is more flexible, policy makers, at least briefly, can expect an increase in the dynamics of the current account adjustment process.

Using Serbia as an example, Dijana Dragutinović[16] in her paper "Moć i nemoć monetarne politike u uspostavljanju ravnoteže između platnobilansnih ciljeva i ciljeva inflacije", (*eng. Power and weakness of monetary policy in strikinga balance between balance–of-payments and inflation-related objectives*) concludes that the changes in the nominal exchange rate are not a powerful tool in fighting deficit of the foreign trade balance, based on the sum of long-term coefficients of demand elasticity for import and export of 0.72 (0.24 + 0.48), indicating that the Marshall-Lerner condition is not satisfied. Therefore, it can be concluded that the exchange rate regime does not have an impact on the external balance.

Emilija Beker – Pucar[17] in her unpublished dissertation "Upravljano fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju (eng. *Managed floating in the regime of inflation targeting in transition economies with an emphasis on Serbia")* used also Serbia as an example which in the 2000-2009 period moved towards greater flexibility of exchange rate (according to the author: conventional fixed peg – crawling peg– managed floating). The metioned author concludes that that the external imbalance, observed

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[15] Herrmann, S., (2009). *Do we really know that flexible exchange rates facilitate current account adjustment? Some new empirical evidence for CEE countries*. Discussion Paper Series 1: Economic Studies, 22/2009. Deutsche Bundesbank.

[16] Dragutinović, D. (2008). *Moć i nemoć monetarne politike u uspostavljanju ravnoteže između platnobilansnih ciljeva i ciljeva inflacije*. National Bank of Serbia. Working Papers 12. Retrieved 29.01.2013 fromhttps://www.nbs.rs/internet/latinica/90/90_0/2008_12_DD.pdf

[17] Beker–Pucar, E. (2010). *Upravljano fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju*. Unpublished dissertation. Subotica: Faculty of Economics. University of Novi Sad.

through the current account balance, is growing independently of the applied exchange rate and monetary policy regime, pointing to the fact that the same structural problem may be solved by the finalization of restructuring and privatization, and the FDI inflow (strengthening of the export and import-substitution sector), with a considerably more restrictive fiscal policy.

Marius Tippkötter[18] in his paper „Global Imbalances and the Current Account Adjustment Process: An Empirical Analysis" examines the influence of the flexibility of the exchange rate regime on the current account adjustment process, encompassing 171 countries, in the period from 1970 to 2008. The author finds empirical evidence that supports the prevailing position according to which floating exchange rate regimes, or regimes of greater flexibility, facilitate the current account adjustment. The author has also confirmed that there is a strong and significant link between the flexibility of the exchange rate regime and the rate of the current account adjustment, which indicates faster convergence of the current account with more flexible regimes.

The research presented in the paper "A Faith-Based Initiative Meets The Evidence: Does a Flexible Exchange Rate Regime Really Facilitate Current Account Adjustment?" by Menzie Chinn and Shang-Jin Wei[19] encompassed a sample of 170 countries in the period from 1971-2005. The research reveals that there is no strong, significant or unambiguous connection between the exchange rate regime and the rate of the current account change. The research determined the complete absence of any significant correlation between the *de facto* nominal exchange rate regime and the rate of the current account adjustment.

The research conducted by a respectable group of researchers led by Artish Ghos, in a study titled "Friedman Redux: External Adjustment and Exchange Rate Flexibility",confirmed Milton Friedman's claim from the mid-20th century that flexible regimes facilitate the external balance adjustment. Analyzing the influence of the application of the exchange rate regime on the external balance on a sample of 181 countries for the 1980-2011period, the authors have determined statistically and empirically significant relationship between the flexibility of the exchange rate applied in the country and the rate of the external balance adjustment.

A recent study entitled "Exchange rate regimes and current account adjustment", in which Fernando Eguren-Martín[20] analyzed separately the industrial and non-industrial countries,

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[18] Tippkötter, M. (2010). *Global Imbalances and the Current Account Adjustment Process: An Empirical Analysis*. Berlin: German Institute for Economic Research. DIW Discussion Paper, No.1011.

[19] Chinn, M. D. and Wei, S-J. (2013). *A Faith-Based Initiative Meets The Evidence: Does a Flexible Exchange Rate Regime Really Facilitate Current Account Adjustment?* The Review of Economics and Statistics 95(1). pp 168–184.

[20] Eguren-Martín, F. (2015). *Exchange rate regimes and current account adjustment: an empirical investigation*. Staff Working Paper No. 544. Bank of England.

found that more rigid regimes were associated with greater and more durable external imbalances in non-industrial countries, while the current balance in industrial countries did not differ significantly depending on the chosen exchange rate regime. The reason for the faster achievement of balance in more flexible regimes is the redistribution mechanism (expenditure-switching), or the shifting of expenditures from import to domestic products in conditions where consumers face a change in relative prices.

3.   RESEARCH METHODS, DATA AND SAMPLES

The paper provides a comparison of different exchange rate regimes according to their impact on the external balance between two groups of European transition countries - countries that apply fixed and countries that apply floating exchange rate regimes, after a period of macroeconomic stabilization.The grouping of countries according to the exchange rate regimes that were applied by monetary authorities was carried out on the basis of a database prepared by Andrea Bubula and Inci Ötker-Robe for the 1990-2001 period, and on the basis of the IMF publication - reports on exchange regimes and limitations. In order to get a sufficiently long period characterized by the predominant application of fixed, namely, floating exchange rate regimes, the focus was placed on the period from 2000 to 2014.The econometric analysis encompasses 10 European transition countries that are on their path to the EU or have become its members, namely four countries that during the defined period mainly applied fixed regimes and 6 countries that mainly applied floating exchange rate regimes. In order to appreciate the differences in the level of development that exist between the countries with floating regimes, and to some extent limit the influence of the level of economic development on the results of the research, two samples each with three countries were taken from this group. The sample structure is shown in Table 1.

Table 1: Sample structure of European transition countries

Countries with fixed exchange rate regimes	Countries with floating exchange rate regimes
	Less developed countries
	Albania
Bosnia and Herzegovina	Romania
Bulgaria	Serbia
Estonia	*More developed countries*
Latvia	Poland
	The Czech Republic
	Slovakia

Source: Author's presentation

Retrieved   06.08.2017   from http://www.bankofengland.co.uk/research/Documents/workingpapers/2015/swp544.pdf

The classification of transition countries with floating exchange rate regimes into less developed and more developed countries requires the empirical analysis of the impact of the applied exchange rate regime on external balance consisting of two parts. The first part of the empirical analysis includes countries with fixed exchange rate regimes and less developed countries with floating exchange rate regimes. In the second part, the same analysis is done between countries with fixed regimes and more developed countries with floating exchange rate regimes.

The share of the current account balance in GDP, as a dependent variable, was taken from the set of basic macroeconomic indicators pointing to the state of external balance of the country. Data on the share of the current account balance in GDP of annual frequency for the period from 2000 to 2014 were taken from the publication IMF - *World Economic Outlook, April 2016*.

The comparative analysis and impact assessment of the applied exchange rate regime (independent variable) on the external balance, in the period from 2000 to 2014, is carried out by the graphic comparison of the annual value movement of the share of the current account balance in GDP, and by the comparison of its movement and its long-term average value between European transition countries with fixed and countries with floating exchange rate regimes, using the measure of variability (variation interval and standard deviation). The examination of the statistical significance of the observed differences in the long-term average values of the current account balance is done by a two-way Student's t-test for testing the equality of arithmetic means of two basic sets based on two independent samples for a level of significance of 5% (corresponding to $\alpha = 0.05$), using the EXCEL statistical tool *(XLSTAT 2016).*

4. RESEARCH RESULTS

4.1. Countries with fixed and less developed countries with floating exchange rate regimes

The graphical presentation of the annual share of the current account deficit in GDP reveals that the observed samples have similar paths of its movement during 2000-2014. (Chart 1. However, unlike countries with fixed regimes which, at least in the period after the recession, recorded annual deficits below 5% of GDP on average, less developed countries with floating regimes had a deficit above the level of 5% of GDP, almost throughout the entire observed period.

By comparing the descriptive sample statistics (variation interval, standard deviation and mean value) shown in Table 2, it can be noted that during 2000-2014 at the level of the sample of countries with fixed exchange rate regimes, the lower average value of deficit was achieved, despite the higher variability of the annual values of the current account deficit, in the amount of 7.6% of GDP, in relation to 8.3% of GDP

achieved at the sample level of less developed countries with floating regimes.

Chart 1: The value of the current account balance (% of GDP) at the sample level of countries with fixed and the sample level of less developed countries with floating exchange rate regimes
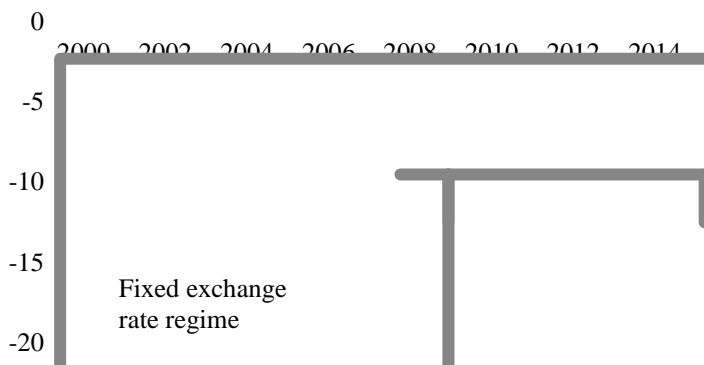
Source: The authors' analysis based on the IMF data (2016).

Table 2: The difference in the current account balance between the sample of countries with fixed and sample of less developed countries with floating exchange rate regimes

An overview of statistics:

Variable	Observations	Minimum	Maximum	**Mean**	Std. deviation
Fixed regimes	15	-17,215	-0,696	**-7,555**	5,596
Floating regimes	15	-16,201	-4,629	**-8,333**	3,148

Results of a two-way Student's t-test for two independent samples:	
Difference	0,779
t (Observed value)	0,470
|t| (Critical value)	2,048
DF	28
95% confidence interval on the difference between the means:	(-2,617) to (4,174)
p-value (Two-tailed)	**0,642**
alpha	0,05

Source: The result of data analysis using the Excel statistical tool - XLSTAT2016.

Contrary to the expectations, the results of the comparative analysis suggest that floating exchange rate regimes in less developed European transition countries are accompanied by a slightly larger current account deficit, in the long run, compared to fixed exchange rate regimes. Nonetheless, similar movement paths of the current account deficit over

the observed period and a relatively small difference in their long-term average values achieved at the sample level make it difficult to find a clear empirical relationship between the applied exchange rate regime and the current account balance.

The **p** value of 0.642 bigger than α, obtained through the t-test, indicates that the observed difference in the average values of the current account deficit, which exists between the sample of countries with fixed and sample of less developed countries with floating exchange rate regimes, is not statistically significant, implying that it is not the consequence of the application of different exchange rate regimes. This practically means that both samples behave as if belonging to the same basic set, i.e. to the same group of countries in terms of the exchange rate regime. Therefore, the t-test results did not confirm the starting assumption according to which floating regimes, in the long run, lead to a lower current account deficit, compared to fixed exchange rate regimes. In other words, contrary to the expectations, the conducted econometric analysis did not confirm the advantage of floating regimes over the fixed exchange rate regimes, from the aspect of the influence of the exchange rate regime on the current account balance.

The reasons for the absence of statistically significant influence of the chosen exchange rate regime on the external balance of transition countries are numerous. Due to the high level of euroisation caused by a high proportion of loans denominated in foreign currency, less developed countries face a fear of floating. Although it implements the floating regime, the nominal exchange rate in highly euroized countries is not the subject of frequent changes, as reduction in the value of domestic currency would cause an increase of the indebtedness of economic entities and the population in the country, and threaten to jeopardize the stability of the banking system. The second reason relates to the fact that high import dependence and undeveloped domestic production imply the lack of the fulfillment of the Marshall-Lerner conditions, even when there is the weakening of the domestic currency. If the Marshall-Lerner condition is not met, that is, if imports and exports do not respond adequately to changes in relative prices, then the weakening of the domestic currency cannot facilitate exports, and it discourages imports.

4.2. Countries with fixed and more developed countries with floating exchange rate regimes

Based on the time series of data on the share of the current account balance in GDP, illustrated in the Chart 2, it can be noted that during 2000-2014 its negative values are continuously recorded even at the sample level of countries with fixed and sample of countries with floating exchange rate regimes. However, differences in the path of deficit movement are more than obvious, especially in the pre-recession period. In the pre-recession period, the current account deficit achieved at the level of the sample with

fixed regimes had a strong tendency of deterioration and removal from the balance level. Hence, in 2007 it was 17%. At the same time, the deficit at the sample level of countries with floating regimes continued to be around the level of 5% of GDP.

Chart 2: The value ofcurrent account balance (% of GDP) at the sample level of fixed and sample level of more developed countries with floating exchange rate regimes
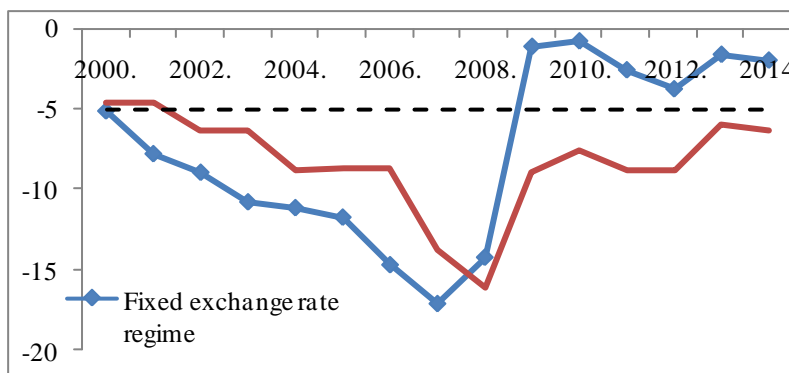
Source: The authors' analysis based on the IMF data (2016).

Decline in domestic demand which relies heavily on imported goods, caused by the global economic crisis and the slow recovery of the world economy, has led to the reduction in the current account deficit in both groups of countries. Higher decline in demand in countries with fixed exchange rate regimes consequently meant higher deficit reduction, so that during 2009-2014 it was reduced to about 2% of GDP, on average annually. At the same time, at the sample level of more developed countries with floating exchange rate regimes, there was a slight tendency of declining deficit, so that at the end of the observed period it was reduced under the level of 1% of GDP. Significantly smaller share of the current account deficit in GDP in more developed countries with floating regimes over the observed period, in relation to countries with fixed regimes but also in relation to less developed countries with floating exchange rate regimes, shows that the balance of payments adjustment mechanism with the help of floating exchange rate functions satisfactorily and much more efficiently than in less developed countries, despite certain limitations.

According to the chart, descriptive analysis also indicates the existence of significant differences in the values of the current account deficit at the level of observed samples. By comparing the sample parameters given in Table 3, it can be noted that the sample with fixed regimes, in addition to the significantly higher variation intervals and higher standard deviation, is characterized by a higher average value of the share of the deficit in GDP, which at the level of this sample amounts to 7.6% in relation to 3,9% achieved at the sample level with floating exchange rate regimes.

The results of the comparative analysis lead to a conclusion that floating exchange rate regimes in more developed European transition countries were followed by a lower current account deficit in the long run, compared with countries with fixed regimes. Nevertheless, the difference in the average values of the current account deficit which exists between the observed samples, regardless of its size, is not sufficient to derive a final conclusion about positive and significant effects of floating exchange rate regimes on the external balance, based solely on algebraic reasoning. The results of the t-test confirm that the observed difference in the average values of the current account deficit is related to the applied exchange rate regimes. The obtained *p* value ($p = 0.021 < \alpha$) shows that the difference is statistically significant, which means that it is a consequence of the application of different exchange rate regimes.

Table 3: *Difference in the share of the current account balance in GDP between the sample of countries with fixed and sample of more developed countries with floating exchange rate regimes*

An overview of statisics:

Variable	Observations	Minimum	Maximum	**Mean**	Std. deviation
Fixed regimes	15	-17,215	-0,696	**-7,555**	5,596
Floating regimes	15	-5,349	-0,909	**-3,917**	1,452
Results of a two-way Student's t-test for two independent samples:					
Difference			-3,637		
t (Observed value)			-2,437		
|t| (Critical value)			2,048		
DF			28		
95% confidenceinterval on the difference between the means:			(-6,695) to (-0,580)		
p-value (Two-tailed)			**0,021**		
alpha			0,05		

Source: The result of data analysis using the Excel statistical tool - XLSTAT2016.

In a nutshell, in this part of the analysis involving European transition countries with fixed and more developed countries with floating exchange rate regimes, it can be concluded that exchange rate regimes affect the current account balance, so that, in the long run, floating regimes lead to a smaller deficit of the current account in comparison with fixed exchange rate regimes, thus empirically confirming the initial assumption of the conducted research.

CONCLUSION

Based on the research results, the advantage of floating regimes in relation to fixed exchange rate regimes from the aspect of the influence on the balancing of the current account in the 2000-2014 period has not been proved in all cases where European transition countries with floating regimes are grouped according to the level of development. The conducted research reveals that, in relation to the application of fixed exchange rate regimes, the application of floating regimes enables faster achievement of the external balance at the level of more developed countries, in the long run, but not at the level of less developed European transition countries. Namely, the results of the comparative analysis of the movements of the share of the current account deficit in GDP, as well as the results of the t-test, provide empirical evidence on the statistically significant and positive effect of floating exchange rate regimes on the current account balancing process, but only at the level of more developed European transition countries. When considering European transition countries with fixed regimes and less developed countries with floating exchange rate regimes, there is no empirical evidence that there is a significant correlation between applied exchange rate regimes and the current account balance, which is contrary to the expectations. Moreover, these two groups of countries are characterized by the existence of relatively high long-term external imbalance observed through the current account balance, irrespective of the applied exchange rate regime.

The existence of a relatively high current account deficit at the level of less developed countries with floating regimes for a longer period and statistically negligible differences in its average value in relation to countries with fixed exchange rate regimes indicates that the adjustment mechanism of the balance of payments through floating exchange rate does not function satisfactorily in less developed transition countries. One of the reasons for the limited positive effects of the application of floating exchange rate regimes on the current account balancing process may be in likely high import dependence of these countries, followed by the inelasticity of imports on exchange rate changes, as a characteristic of many less developed countries. In the case of highly import-dependent economies, there is a high degree of connection between the movement of the exchange rate and prices, the so-called *pass-through effect*, with some psychological factors further enhancing this connection. In such circumstances, depreciation fosters inflation through the price increase of imported products. In that way, the effect of the depreciation of nominal exchange rate on the real exchange rate and the competitiveness of the national economy is canceled in a relatively short period of time. Surely, one should not disregard the fact that the price which can be influenced by changes in the nominal level of the exchange rate is only one of the factors of the competitiveness of the national economy on the international market.

UTICAJ PRIMIJENJENOG REŽIMA DEVIZNOG KURSA NA SPOLJNU RAVNOTEŽU EVROPSKIH TRANZICIONIH ZEMALJA

Mr Vlado Vujanić, prof. dr Vasilj Žarković, doc. dr Dragan Gligorić

Apstrakt: Primijenjeni režim deviznog kursa, preko uticaja na kretanje deviznog kursa, obim novčane mase i nivo kamatnih stopa, u značajnoj mjeri utiče na uspostavljanje unutrašnje i spoljne ravnoteže svake zemlje. Evropske tranzicione zemlje su, i pored sličnih početnih problema i krajnjih ciljeva, u kasnijim fazama primjenjivale različite režime deviznih kurseva prilagođene ekonomskim okolnostima i potrebama zemlje. U ovom radu se pokušava utvrditi u kojoj mjeri su primijenjeni režimi deviznog kursa uticali na spoljnu ravnotežu ovih zemalja, u periodu od 2000. do 2014. godine. Istraživanjem je obuhvaćeno 10 tranzicionih zemalja, grupisanih prema režimu deviznog kursa i nivou razvijenosti. Ekonometrijskom analizom, uz pomoć Studentovog t-testa, došlo se do rezultata istraživanja koji su pokazali da se efekti primjene fluktuirajućih režima deviznog kursa razlikuju u zavisnosti od nivoa razvijenosti zemalja. Utvrđeno je da fluktuirajući režimi, u dugom roku, dovode do značajno manjeg deficita tekućeg bilansa u poređenju sa fiksnim režimima deviznog kursa, kod razvijenijih, ali ne i kod manje razvijenih evropskih tranzicionih zemalja.

Ključne riječi: *tranzicione zemlje, režim deviznog kursa, tekući bilans*

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