EXTERNAL ADJUSTMENT AND FLEXIBILITY OF THE EXCHANGE RATE REGIME: THE CASE OF TRANSITION COUNTRIES

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ABSTRACT

Milton Friedman's traditional claim is that flexible exchange rates facilitate external adjustment by means of their corrective movements before the balance of payments crisis occurs. In order to test this hypothesis, we employ the first order autoregression based on the panel data on exchange rate regime and external balance expressed as the share of balance of goods and services in GDP. The sample covers 16 Central and Eastern European (CEE) and 12 Commonwealth of Independent States (CIS) transition countries over the period 2000-2019. The results, which are based on the sample of all transition countries, failed to prove that more flexible exchange rate regimes facilitate external adjustment. When the analysis was performed on two groups of countries separately, the results showed that the deficit of balance of goods and services in CIS countries has a higher persistence compared to CEE countries. However, a more flexible exchange rate regime does not facilitate external adjustment. On the other hand, in CEE countries, the relationship between exchange rate regime flexibility and the rate of balance of goods and services reversion exists, proving that Friedman's hypothesis does hold.

1. INTRODUCTION

The type and application of an exchange rate regime and its impact on the internal-external balance of the economy are one of the most important issues faced by policymakers. According to the official International Monetary Fund (IMF)'s

de facto classification of exchange rate regimes, the country could implement one of ten exchange rate regimes divided into three coarse groups: hard pegs, soft pegs and floating regimes (IMF, 2020). The literature, which focuses on the impact of the exchange rate regimes on macroeconomic performances, is based on two broad types of the exchange rate regimes: fixed and flexible.

There is no consensus in the literature on the macroeconomic effects of the exchange rate regime. Proponents of the fixed regimes argue that stable exchange rates have positive effects on inflation, interest rates, investment, and thus on the economic growth rates. On the other hand, opponents of the fixed exchange rates state that these regimes invoke speculative attacks, so policymakers are forced to increase the real interest rate in order to defend the particular exchange rate. Therefore, a positive effect on economic growth through lower interest rates is not the rule. Authors who favor flexible exchange rate regimes argue that the inability to adjust the nominal exchange rate in the fixed exchange rate regimes when the country faces external shock leads to slower adjustment of the real exchange rate, and thus price distortions, and inefficient resources allocation (Žarković, Gligorić & Tešić, 2012; Levy-Yeyati & Sturzenegger, 2002).

The traditional argument of advocates of flexible exchange rate regimes is that these regimes promote balance of payment adjustment. During the Bretton Woods era, the fixed exchange rates have prevailed in almost all countries with belief that these regimes would be able to provide the stability of international monetary system and promote international trade and economic growth. Although the Bretton Woods system and fixed exchange rate regimes were very popular in the early years of its operation, Milton Friedman, in his article published in 1953, stood firm in favor of flexible regimes. He argues that volatility of exchange rates is misinterpreted by those who are in favor of fixed exchange rates. According to Friedman, the volatility of exchange rates is not a symptom, but a cause of economic imbalances. Fixing the exchange rates would not resolve the economic imbalance problems, but rather suppress them, until they become unsustainable and cause a currency crisis. On the other hand, flexible exchange rates provide exchange rate adjustments on the ongoing basis (Ghosh et al., 2008). Instead of sudden changes of exchange rate in fixed exchange rate regime, when it becomes unsustainable, choosing the flexible exchange rates provides smooth adjustment according to the change in the economic fundaments. Moving to more flexible exchange rates is also often suggested to countries by the IMF as a solution for large current account imbalances (Chinn & Wei, 2008).

The exchange rate regime has a significant impact on the external balance, primarily through the movement of the real exchange rate (RER). The RER is equal

to the nominal exchange rate, adjusted for the inflation difference in the country and abroad. If the domestic inflation is higher than weighted inflation in the major trading partners, the RER appreciates, and competitiveness is deteriorating.

Numerous studies find empirical evidence to support the view that more flexible exchange rate regimes facilitate external adjustment. Chinn and Wei conducted research on the sample that contained about 170 countries over the period 1971-2005, based on exchange rate regime classifications by Levy-Yeyati and Sturzenegger (2004, a,b) and Reinhart and Rogoff (2004). They did not find a strong, robust relationship between exchange rate regime flexibility and the rate of current account reversion, even after accounting for the degree of economic development, the degree of trade, and capital account openness (Chinn & Wei, 2008). According to Chinn and Wei, the absence of a strong relationship between the flexibility of nominal exchange regime and the speed of convergence in real exchange rates is stated as the main reason for the lack of faster external adjustment in the more flexible exchange rate regimes compared to the fixed ones. The analysis that covered period 1970-2008 and the sample of 171 countries used different econometrics methods. The results regarding the impact of exchange rate regime on the current account adjustment process were different, depending on the econometric method that was used. Regardless of the econometric techniques, the overall conclusion supports the positive impact of exchange rate flexibility on the external adjustment (Tippkötter, 2010). Clower and Ito (2012) tried to examine the statistical nature of the persistency of current account balances and its determinants using the panel of 70 countries. They find, generally, that exchange rate regime is not a robust determinant of current account persistence. In addition, using the sample of emerging market countries, they found that fixed exchange rate regime can increase the probability of entering the random walk regime. The random walk regime represents periods during which a country runs an "explosive", or non-mean reverting (nonstationary) current account balance.

A study conducted by a respectable group of researchers led by Artish Ghosh, has confirmed Milton Friedman's claim from the mid-20th century that flexible regimes facilitate external adjustment. Analyzing the sample of 181 countries for the period 1980-2011, the authors have found a statistically significant relationship between the exchange rate regime flexibility and the speed of current account adjustment (Ghosh Qureshi & Tsangarides, 2014). But this study is specific in determining exchange rate regimes that operate within the particular country. The authors detected bilateral exchange rate regime between a country and each country's trade partner. If a country, for example, implements a currency board but the anchor currency fluctuates regarding to the currency of the particular trading partners, the bilateral exchange rate regime is labeled as float-

ing regimes, and an association between bilateral regime and bilateral current account balance is examined.

In the recent study, using a panel of 180 countries over the 1960–2007 period, Eguren-Martín (2016) analyzed external adjustment in industrial and non-industrial countries separately. He founds that in non-industrial countries, more rigid exchange rate regimes were associated with larger and more persistent current account imbalances, while the external adjustment of the industrialized countries did not differ significantly regarding the degree of exchange rate regime flexibility. Faster external adjustment under more flexible regimes exists thanks to expenditure-switching behavior of consumers when faced with changes in international relative prices.

The transition process which began in 1990 was very challenging for socialistic countries in Central and Eastern Europe (CEE), and other socialist countries which were formed following the dissolution of the Soviet Union. The transition process requires an economic liberalization, deregulation, ownership transformation through the privatization process, as well as reforms which are related to the macroeconomic stabilization. The main objective and the main concern of the economic policy at the beginning of the transition process was to achieve macroeconomic stabilization. It implied an inflation reduction and exchange rate stabilization.

The introduction of a fixed exchange rate regime of the domestic currency against a strong currency, was a characteristic of numerous anti-inflation programs in transition countries. The appreciation of the RER is a phenomenon characteristic for the transition countries. The RER appreciation is the consequence of the increase in prices of non-tradable goods (Balassa-Samuelson effect) on the one hand, and the inflows of capital from abroad on the other hand. The fixed exchange rates are associated with higher appreciation, because flexible exchange rates allow mitigating the impact of the capital inflows on RER appreciation (Combes, Kinda & Plane, 2011). The RER appreciation means reduced competitiveness of the domestic production and thus higher external deficits. This could cause the balance of payments crises and force monetary authorities to devalue. Even though the internal balance (economic growth, employment and price stability) is the priority for the policymakers in transition countries, the external balance (sustainable current account) should not be neglected.

The experience of many transition countries has confirmed that the policy of a fixed exchange rate, as a part of an anti-inflation strategy, has contributed to macroeconomic stabilization, which is reflected in the relatively rapid reduction of the inflation to single digits, thus creating conditions for structural reforms

(Beker-Pucar, 2010). The RER appreciation and accumulation of current account deficits have led to external debt accumulation and increased the risk of devaluation. Some of the European transition countries, like Poland, Hungary, Romania, Serbia and the Czech Republic, after archiving the macroeconomic stabilization, introduced more flexible exchange rate regimes. Other countries (Bosnia and Herzegovina (B&H), Bulgaria, North Macedonia and Baltic states (now Eurozone members)), have retained the fixed exchange rate regimes even in the later stages of transition. Therefore, for the countries which have continued the application of fixed exchange rate regimes, monetary policy is aimed at achieving low inflation rather than external balance equilibrium. On the other hand, CIS countries generally did not use the exchange rate as the declared nominal anchor. For some countries, including Kazakhstan and Ukraine, exchange rate has been a de facto anchor. In the case of Belarus, the nominal anchor was Russian ruble, but de facto nominal anchor was US dollar (Keller and Richardson, 2003). According to the IMF extended exchange rate regime classification for the period 1990-2001, composed by Bubula and Ötker-Robe (2002), during the 1990s all CIS countries except for Russia implemented some form of a fixed exchange rate regime, at least in one year. Jeffrey Sachs (1996) also argues that most transition countries, undertook stabilization programs to end high inflation. Sachs advises CIS and CEE countries to adopt a pegged exchange regime as a part of the initial policy of macroeconomic stabilization. After one or two years of stabilization and liberalization, the CIS and CEE countries should move to flexible exchange rate regimes. Even though some countries have achieved stabilization under floating exchange rate regimes, Sachs emphasizes that these costs of stabilization, the costs under the floating exchange rate regime, seem to be much higher than in the pegged-exchange rate stabilization. The literature which analyzed the impact of exchange rate regime flexibility on the external balance in transition countries is not as abundant as for the developed countries. Domaç, Peters, and Yuzefovich (2001) based their analysis on the sample of 24 transition countries for the period 1991-1998. The analysis reveals that countries which implemented fixed exchange rate regime experienced the largest current account imbalances (5.4% of GDP) compared to countries with intermediate and flexible exchange rate regimes, whose current account imbalances were lower, 4.7% and 3.9% of GDP respectively. Sabine Herrmann (2009) used panel data set which included 11 catching-up countries from Central, Eastern and South-eastern Europe between 1994 and 2007. According to Sabine, the flexible exchange rate regime really facilitates current account adjustment, at least in the short run.

Dragutinović (2008) estimated price elasticity of export and import for Serbia and revealed that the sum of these two elasticities is lower than 1, therefore

Marshall-Lerner conditions are not satisfied. This implies that depreciation of exchange rate cannot decrease the current account deficit. Beker-Pucar (2010) investigated whether the policy of greater exchange rate flexibility implemented in Serbia over the period 2000-2009 had an impact on the external balance. The results showed that current account deficits grew regardless of the implemented policy of greater exchange rate regime policy. Vujanić, Žarković and Gligorić (2017) analyzed the impact of exchange rate regime flexibility on the current account imbalance for the European transition countries during the period 2000-2014. The authors concluded that the policy of greater exchange rate regime flexibility facilitated current account adjustment only in more developed transition countries. The results also implied that the fixed exchange rate regimes are more appropriate for less developed transition countries.

In this research, we will investigate the impact of the exchange rate regime flexibility on the external balance in the CEE and the CIS countries over the period 2000-2019. Our assumption is that a more flexible exchange rate regime does facilitate external adjustment in the transition countries. This paper is organized as follows. After the Introduction, we describe the data and methodology which will be used to test our hypothesis. The results contain the descriptive statistic of the main variables which we use in our regression, regression results of the impact of exchange rate regime flexibility on the external adjustment in the transition countries, and the comments. In the discussion, we analyze the obtained results, compare them with similar research, conclude the research, and derive the policy implications regarding the available instruments to deal with external imbalances in the transition countries.

2. MATERIALS AND METHODS

The sample consists of 16 CEE transition countries (Albania, Bosnia and Herzegovina, the Czech Republic, Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovak Republic, Slovenia) and 12 CIS transition countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine). The analysis is based on the annual data for the period 2000-2019, except for Montenegro for which the analysis covers the period 2007-2019.

In this paper we estimate the rate at which external balance reverts to its mean value, following the methodology used in the similar studies, (Chin & Wei, 2008; Ghosh, Terrones & Zettelmeyer, 2008; Herman, 2009; Ghosh Qureshi &

Tsangarides, 2014), but with certain modifications, due to specificity of transition countries. For this purpose, we use a basic first-order autoregression:

$$BGS_{it} = \rho_0 + \rho_1 BGS_{it-1} + \rho_2 XRR_{it} + \rho_3 (BGS_{it-1} \times XRR_{it}) + \mu_i + \lambda_t + \varepsilon_{it}$$

where,

- BGS_{it} denotes balance of goods and services in country i in year t, expressed a as a percent of GDP. This indicator is taken from World Development Indicators (World Bank, 2020);
- BGS_{it-1} denotes balance of goods and services expressed in country i in the year $t-1$, expressed a as a percent of GDP, i.e. lagged balance of good and services;
- ρ_1 is autoregressive parameter, whose value closer to 1 denotes a more persistent trade balance. The coefficient indicates to what extent the trade balance in current year is caused by trade balance from the previous year;
- XRR_{it} is the degree of the flexibility of exchange rate regime in country i in year t according to the IMF methodology of the exchange rate regime classification (Bubula & Ötker-Robe, 2002; IMF, 2021). The more flexible exchange rate regime, the higher value of XRR_{it} is, so hard peg regime takes value 1, conventional peg and stabilized agreement 2, intermediate regime 3, managed floating/floating regimes 4 and independent/free floating regimes take value 5;
- BGS_{it-1} *x* XRR_{it} *is the interaction term between the exchange rate regime flexibility and lagged trade balance;*
- ρ_3, coefficient next to the interaction term between the exchange rate regime flexibility and lagged trade balance, is the coefficient of key importance for testing whether the exchange rate regime flexibility facilitates external adjustment. If flexible exchange rate regimes imply faster convergence of the trade balance, then the coefficient ρ_3 should be statistically significant and negative (Ghosh Qureshi & Tsangarides, 2014);
- μ_i is country specific effect while *and* λ_t is time specific effect to capture common shock across all countries in the model.
- ε_{it} is standard error and it should be robust.

The expression reversion of the external balance means the adjustment of the balance of goods and services from any default value to a mean value which depends on the underlying equation. It is assumed that this mean value of the balance of goods and services corresponds to its long-run equilibrium, which is country specific. This approach implies that there is a long-run equilibrium, but

it does imply that the long-run value of the balance of goods and services to GDP ratio will be zero (Herman, 2009).

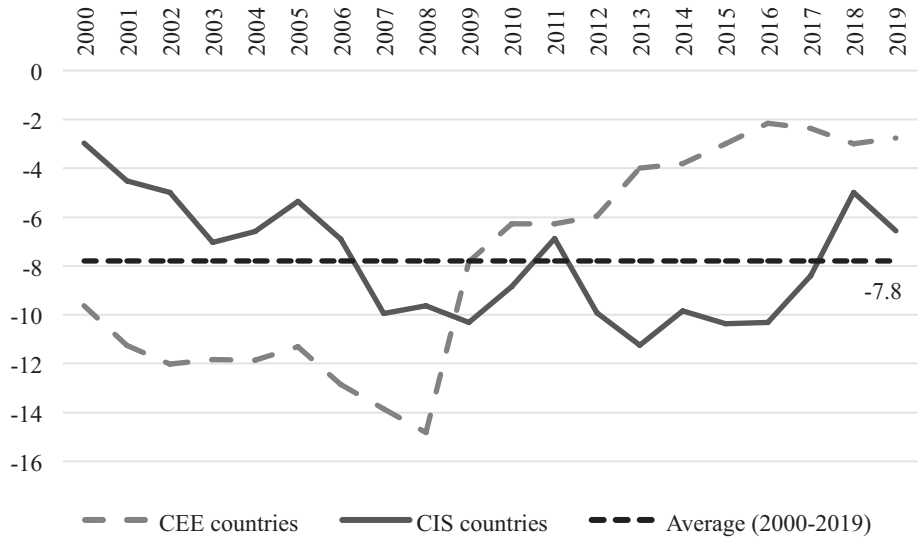
Most previous studies used balance of current account as an indicator for the external balance. In this research, we will use balance of goods and services for this purpose, for two reasons. The first is the specificity of the structure of the current account in the transition countries. Most transition countries are emigrant countries due to economic reasons, and in the previous period transition countries experienced high inflow of workers remittances and pensions. Very high amounts of such inflows are not sustainable in the long run because the second generation of migrant workers often decide to change residence and stay abroad without a plan to return home. Thus, the transition countries cannot rely on this type of inflow for relatively high balance of goods and services deficit in the long run and should improve competitiveness. Second reason for using balance of goods and services as a proxy for external balance lies in the economic theory. The postulated relationship between exchange rate flexibility and external balances refers mainly to trade rather than to personal transfers and factor incomes.

Also, we made some changes in the exchange rate regime classification compared to the IMF classification regarding the classification of the transition countries which have joined Eurozone (Slovenia, Slovakia, Estonia, Latvia, Lithuania). After the 2007, the IMF classifies countries which belongs to the currency unions, according to the classification of the exchange rate regime of the mutual currency. Due to the fact that exchange rate of the euro fluctuates freely on the foreign exchange, all transition countries which have joined the eurozone have been classified as countries which implement a free floating exchange rate regime, according to the IMF classification. However, if we analyze the impact of the balance of payments of these countries on the euro exchange rate, it is quite certain that, due to the relatively low economic capacity, the balance of payments deficit in these countries would not by itself cause an adequate weakening of the euro exchange rate sufficient to restore the equilibrium. Also, if an asymmetric and negative external shock hits some of these countries, the euro exchange rate would not act as a shock absorber. Therefore, the central banks of these countries do not have the possibility of conducting an "independent" monetary policy. Hence, for the purpose of this research, we reclassified these countries as a hard peg regime after joining eurozone. This classification is consistent with the earlier (before 2007) IMF classification rule when countries which are a part of the currency union are classified as "exchange rate regime with no separate legal tender".

Here, we will apply the panel (data) analysis, which is the most appropriate statistical method to analyze two-dimensional, typically cross sectional and longitudinal. The previously specificized model will be estimated with country-specific fixed effect (CFE) and country-specific fixed and time effect (CFE/TE).

3. RESULTS

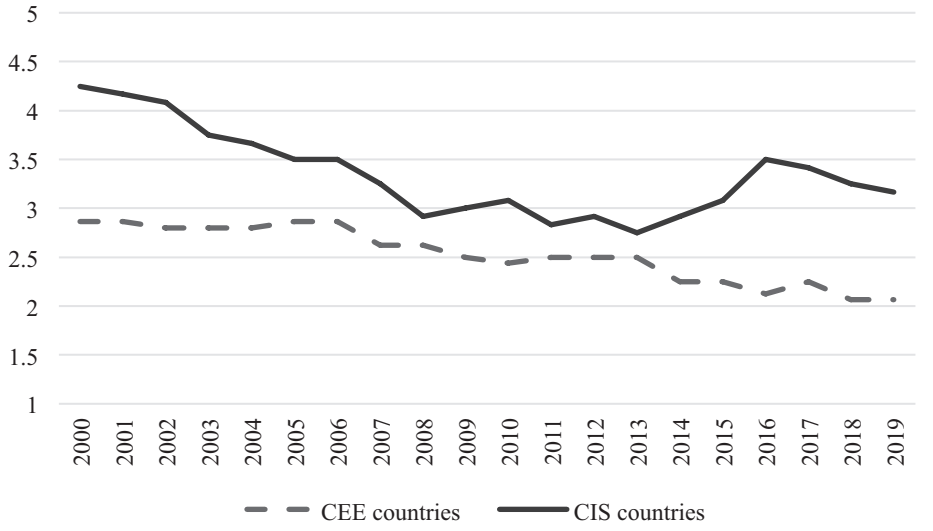
The data presented on the Graph 1 shows that the average value of the balance of goods and services in both CEE and CIS transition countries over the period 2000-2019 was -7,8% of GDP. If we compare the trends for two groups of countries separately, the analysis reveals that the trends were different in the years before and after the Global economic crisis in 2008. In the period before the crisis, the CEE countries experienced, on average, significantly higher deficit of balance of goods and services compared to CIS countries, but in both group of countries, deficits increased, primarily led by the high global economic growth rates. In the years after the global economic crisis, the CEE countries have experienced a decrease in the deficit. The deficit for the CIS countries remained very high, but with decreasing trend after 2016.



Graph 1. Balance of goods and services in transition countries (% of GDP)
Source: Author's calculation based on the World Bank, 2021.

Graph 2 shows the average value of the degree of the exchange rate regime flexibility. As we have described above in the methodology, the exchange rate

regime is represented by the absolute number which takes values from 1 to 5, depending on its flexibility in the particular country/year. More flexible exchange rate regime is represented by a higher number. As we can see, CIS countries applied a more flexible exchange rate regime compared to CEE countries, but the trend of transition toward a less flexible exchange rate regime was obvious only in the years preceding the Global economic crisis in 2008. On the other hand, in CEE countries, the trend toward less flexible exchange rate regimes became visible after 2006, but this trend is mainly the consequence of the accession of some countries to the eurozone. Namely, some countries, such as Slovenia, Slovakia and Latvia applied a more flexible exchange rate before joining the eurozone, but Estonia and Lithuania retained the same degree of the flexibility due to applying currency board during the participation in the European Exchange Rate Mechanism. Also, some CEE countries, such as Serbia and Romania, transited to a more rigid exchange rate regime during the last few years of the analyzed period (IMF, 2021).



Graph 2. Exchange rate regime flexibility in transition countries
Source: Author's calculation based on the IMF, 2021.

A simple comparation of the trends in external balance and applied exchange rate regime could not reliably reveal the relationship between these two trends, due to the impact of other country-specific and time-specific factors which could also determine external balance, and of course the specifics of the panel data. The results of the previously specified model are presented in the Table 1.

The Model 1 refers to the model specification with only country-specific effect, while other model contains both country-specific and time (year) specific effect. Also, the first two models contain estimated results for all countries, while the Model 3 and 4 contain the estimated result for CEE and CIS countries separately.

As we can see from the Table 1, the coefficient on the AR term (BGS_{t-1}), which shows degree of external balance persistence, is statistically significant at 1% of significance in all estimated models. However, the estimated coefficient of interaction term is not significant in the models which include all transition countries, regardless of whether or not the model is estimated with only time effect (Model 1) or both, time and country fixed effect (Model 2). Therefore, our findings are contrary to Friedman's hypothesis if we estimate the model with both group of transition countries – CEE and CIS.

Table 1. Estimation results: Exchange Rate Regime Flexibility and External Adjustment

VARIABLES	All countries		CEE countries	CIS countries
	Model 1	Model 2	Model 3	Model 4
BGS_{t-1}	0.635***	0.629***	0.464***	0.680***
	(0.067)	(0.066)	(0.058)	(0.116)
XRR_t	-0.427	0.109	0.311	-0.915*
	(0.326)	(0.353)	(0.283)	(0.445)
BGS_{t-1} x XRR_t	0.011	0.010	-0.036*	-0.003
	(0.031)	(0.032)	(0.018)	(0.053)
Constant	-1.321	-5.327*	-8.381**	-0.443
	(0.979)	(2.998)	(3.259)	(3.853)
Observations	547	547	312	235
R-squared	0.538	0.567	0.708	0.565
Number of countries	28	28	16	12
Country-fixed effects	No	Yes	Yes	Yes
Time (year) effects	Yes	Yes	Yes	Yes

Source: Author's calculation in STATA 15/SE based on World Bank, 2021; IMF, 2021
Notes: Robust standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

Because of the problem of a high level of the heterogeneity in the full sample, which arises from the difference between CEE and CIS countries, we have estimated the separate models for CEE countries (Model 3) and for CIS countries (Model 4). In the Model 3, which contains estimated coefficients for CEE countries, the coefficient of interaction term between exchange rate flexibility is statistically significant at 10% and negative, which implies that flexible exchange rate regimes do facilitate balance of goods and services adjustment in CEE countries. This shows that our results are in line with conventional wisdom and Friedman's hypothesis. In the Model 4, which represents CIS countries,

the coefficient of interaction term is not statistically significant, so the choice of exchange rate regime is not important for the external adjustment. From the estimated Models 3 and 4, we can notice that the coefficient on the AR term (BGS_{t-1}) is higher for CIS compared to CEE countries. This coefficient shows to what extent the current year's deficit is conditioned by the deficit in the previous year. If this coefficient is higher, the level of persistence of balance of goods and services deficit is higher too. Therefore, based on our findings, higher external imbalances persistence is observed in CIS countries. These results are in line with the trend in the balance of goods and services, which we have shown in the Graph 1. The deficit of balance of goods and services in CEE countries has a greater tendence to decrease, while in CIS countries, the deficit does show less clear tendency to decrease.

4. DISCUSSIONS AND CONCLUSION

In this research we have used the IMF exchange rate regime classification to analyze the impact of exchange rate regime flexibility on the external adjustment in CEE and CIS transition countries for the period 2000-2019. Unlike other research, which used current account balance, we used balance of goods and services as a measure of external imbalances due to the specifics of transition countries. The common characteristic for most transition countries are the implementation of stabilization of programs based on a fixed exchange rate regime at the beginning of transition. In the latter stages of transition, some countries decided to transit to a more flexible exchange rate regime, while others continued implementing a fixed exchange rate regime. The choice of an exchange rate regime is one of the most important decision for the policymakers due to its impact on both internal and external balance of the economy which is often in conflict. Therefore, some countries opted for continual implementation of a fixed exchange rate regime due to fear that transition to more flexible regimes would cause significant costs such as higher inflation, higher risk and uncertainty associated with exchange rate risk, especially in the case of high external debt and high import dependence. Analysis showed that it is not uncommon for countries to transit to more flexible regimes, and, after a certain period, they will again apply the fixed ones. However, persistent implementation of more rigid exchange rate regime could have a consequence in the higher and more persistent external imbalances, according to the Friedman's hypothesis that flexible exchange rates would facilitate external adjustment.

Our panel analysis, based on a group of 16 CEE transition countries and 12 CIS countries, failed to prove that more flexible exchange rate regimes facilitate ex-

ternal adjustment. When the analysis was performed on two groups of countries separately, the estimation results showed that the deficit of balance of goods and services in CIS countries has a higher persistence compared to CEE countries, but a more flexible exchange rate regime does not facilitate external adjustment. However, in CEE countries, the relationship between exchange rate regime flexibility and the rate of balance of goods and services reversion exists, proving that Friedman's hypothesis does hold. Taking into account that, in general, CEE countries are more developed than CIS countries, the results are in line with the statement that conducting efficient independent monetary policy requires adequate institutional and economic capacity.

Our findings for CEE countries are in line with the results of Herrman (2009) which relate to 11 catching-up countries from Central, Eastern and South-Eastern Europe between 1994 and 2007. The policy of greater exchange flexibility is an efficient tool for reducing external imbalances in CEE transition countries, but it is not solution for the problems of external imbalances in CIS countries. This research has some limitations which are related to relatively short time series data. However, research in this field could be improved in the future by using bilateral data on balance of goods and services and bilateral exchange rate regime according to the methodology proposed by Ghosh Qureshi & Tsangarides (2014). The biggest challenge in conducting such research is the availability of reliable data on the bilateral balance of goods and services.

REFERENCES

Bubula A. & Ötker- Robe, I.(2002). *The evolution of exchange rate regimes since 1990: evidence from de facto policies*. IMF Working Paper, WP/02/155. Retrieved from https://www.imf.org/external/pubs/ft/wp/2002/wp02155.pdf

Chinn, M. D. & Wei, S-J.(2008). 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),168–184. doi.org/10.1162/REST_a_00244

Clower, E. & Ito, H. (2012). *The Persistence of Current Account Balances and its Determinants: The Implications for Global Rebalancing*. ADBI Working Papers 400. Asian Development Bank Institute. Retrieved from https://www.adb.org/sites/default/files/publication/156255/adbi-wp400.pdf

Combes, J-L., Kinda, T.& Plane, P. (2011). Capital Flows, Exchange Rate Flexibility, and the Real Exchange Rate. *Journal of macroeconomics*, *34*(4), 1034-1043. doi.org/10.1016/j.jmacro.2012.08.001

Domaç, I., Peters, K.& YuzefovichY.(2001). *Does the Exchange Rate Regime affect Macroeconomic Performance*. Policy Research Working Papers Series 2642. The World Bank. Retrieved from: https://ideas.repec.org/p/wbk/wbrwps/2642.html

Eguren-Martín, F. (2016). Exchange rate regimes and current account adjustment: an empirical investigation. *Journal of International Money and Finance*, *65*, 69-93. doi.org/10.1016/j.jimonfin.2016.03.006

Ghosh, A., Qureshi, M. & Tsangarides, C. (2014). *Friedman Redux: External Adjustment and Exchange Rate Flexibility*. Working Paper, WP/14/146. IMF. Retrieved from: https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Friedman-Redux-External-Adjustment-and-Exchange-Rate-Flexibility-41836

Ghosh, A., Terrones, M.E. & Zettelmeyer, J. (2008). Exchange Rate Regimes and External Adjustment: New Answers to an Old Debate. In C. Wyplosz (ed.), *The New International Monetary System: Essays in Honor of Alexander Swoboda*. London, UK: Routledge. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1969998

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. Retrieved from: https://ideas.repec.org/p/zbw/bubdp1/200922.html

IMF. (2020). *Annual Report on Exchange Arrangements and Exchange Restrictions. Washington.* Retrieved from: https://www.imf.org/en/Publications/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions/Issues/2020/08/10/Annual-Report-on-Exchange-Arrangements-and-Exchange-Restrictions-2019-47102

IMF. (2021). *AREAER ONLINE*. Retrieved form: https://www.elibrary-areaer.imf.org/

Levy-Yeyati E.& Sturzenegger, F. (2002). Classifying Exchange Rate Regimes: Deeds vs. Words. *European Economic Review, 49*(6), 1603-1635. doi.org/10.1016/j.euroecorev.2004.01.001

Levy-Yeyati, E., & Sturzenegger, F. (2003a). *A de facto Classification of Exchange Rate Regimes: A Methodological Note*, unpublished manuscript. Retrieved form https://fsturzenegger.com.ar/pdf/A-de-facto-Classification-of-Exchange-Rate-Regimes1.pdf.

Levy-Yeyati, E., & Sturzenegger, F. (2003b). To Float or to Fix: Evidence on the Impact of Exchange Rate Regimes on Growth. American Economic Review, 93, 1173–1193. DOI: 10.1257/000282803769206250

Reinhart, C.M. & Rogoff, K. (2004). The Modern History of Exchange Rate Arrangements: A Reinterpretation. *Quarterly Journal of Economics, 119* (1), 1-48. DOI 10.3386/w8963

Sachs, J. (1996). Economic Transition and the Exchange-Rate Regime. *American Economic Review, 86*(2), 147-152. Retrieved from: https://www.jstor.org/stable/2118113?origin=JSTOR-pdf&seq=1

Tippkötter, M. (2010). *Global Imbalances and the Current Account Adjustment Process: An Empirical Analysis*. DIW Discussion Paper, 1011. Retrieved from: https://www.diw.de/documents/publikationen/73/diw_01.c.357637.de/dp1011.pdf

World Bank. (2021). *World Development Indicators*. Retrieved form: https://databank.worldbank.org/home.aspx.

Zarković,V., Gligorić, D. & Tešić, J. (2012). Exchange Rate Regimes and Real Exchange Rate in the Western Balkan Countries. *Proceedings of the 2nd International Scientific Conference "Economics Business Management 2012"*, Kragujevac, Serbia.

Beker-Pucar, E. (2010). *Upravljano fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju*. Doctoral dissertation. Subotica; Serbia: University of Novi Sad, Faculty of Economic Subotica.

Vujanić, V., Žarković, V. & Gligorić, D. (2017). The Impact of Applied Exchange Rate Regimes on the External Balance of European Transition countries. *Svarog, 15,* 150-167. doi.org/10.7251/SVR1715150V

Dragutinovic, D. (2008). *Moć i nemoć monetarne politike u uspostavljanju ravnoteže između platnobilansnih ciljeva i ciljeva inflacije*. Radne Studije. Beograd, Srbija: Narodna Banka Srbije. Retrieved from: https://nbs.rs/export/sites/NBS_site/documents/publikacije/strucni-radovi/2008_12_DD.pdf

Keller, P.M. & Richardson, M. (2003). *Nominal Anchors in the CIS*. IMF working paper, WP/07/179. Retrieved from: https://www.imf.org/en/Publications/WP/Issues/2016/12/30/Nominal-Anchors-in-the-CIS-16784

СПОЉНО ПРИЛАГОЂАВАЊЕ И ФЛЕКСИБИЛНОСТ РЕЖИМА ДЕВИЗНОГ КУРСА: СЛУЧАЈ ТРАНЗИЦИОНИХ ЗЕМАЉА

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САЖЕТАК

Традиционална тврдња Милтона Фридмана је да флексибилни девизни курс олакшава спољно прилагођавање својим корективним кретањима, прије него што дође до платнобиланске кризе. Да бисмо тестирали ову хипотезу, користимо ауторегресију првог реда засновану на панел подацима који се односе на примијењене режиме девизног курса и спољнотрговинском билансу израженим као удио биланса роба и услуга у БДП-у. Узорак обухвата 16 транзиционих земаља Централне и Источне Европе (ЦИЕ) и 12 земаља Заједнице независних држава (ЗНД) током периода 2000-2019. Резултати базирани на узорку свих земаља у транзицији нису успели да

докажу да флексибилнији режими девизног курса олакшавају спољно прилагођавање. Када је анализа извршена на двије групе земаља одвојено, резултати показују да дефицит биланса роба и услуга у земљама ЗНД има већу истрајност у поређењу са земљама ЦИЕ, али флексибилнији режими девизног курса о овим земљама не олакшавају спољно прилагођавање. Међутим, у земљама ЦИЕ постоји веза између флексибилности режима девизног курса и спољнотрговинског биланса, тако да Фридманова хипотеза ипак вриједи.

Кључне ријечи: *режим девизног курса, спољно прилагођавање, земље у транзицији, ауторегресија првог реда*