

MONETARY TRANSMISSION CHANNELS IN FLEXIBLE MONETARY AND EXCHANGE RATE REGIMES: THE CASE OF SELECTED TRANSITION ECONOMIES

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Abstract

The paper explores selected monetary transmission channels in the case of transition economies. Namely, an exchange rate channel, an interest rate channel, direct and indirect influence to an exchange rate, are focused. Specific (former) transition economies are differentiated according to the combination of implemented monetary and exchange rate regimes: exchange rate as a nominal anchor and rigid exchange rate regimes, exchange rate as a nominal anchor and intermediate exchange rate regimes, and implicit/explicit inflation targeting monetary regime and floating (managed/free) exchange rate regime. The monetary transmission is tracked during different phases in a transition process towards the EU and compared between different nominal anchors and exchange rate regimes. In order to track the influence of a monetary policy instruments (impulses) to different goals of a monetary policy (responses) during the period from 6-24 months, we use VAR and VEC models. Monthly frequency of following time series are used in the models: nominal exchange rates, consumer price indexes, foreign exchange reserves, and reference interest rates. The aim of the paper is to point to the distinction between de jure and de facto exchange rate regimes, and to the adequacy of used combination of monetary and exchange rate regimes having in mind revealed features of investigated monetary transmission channels.

Key Words: *Exchange rate regimes, Monetary regimes, Nominal anchor, Monetary transmission channels.*

JEL Classification: E42, E52, F41

1. INTRODUCTION

Former transition economies, now members of the EU, have practised different monetary strategies in a transition process on the road towards the EU (EMU). Concerning the combination of exchange rate and monetary regimes, three groups of transition economies could be identified (Josifidis, Allegret and Beker 2009b). The first group which has used an exchange rate as a

nominal anchor in a rigid form since the beginning of the transition. This group is consisted from Estonia, Lithuania and Latvia. The second group at the beginning of a transition process used an exchange rate as a nominal anchor, but during different phases switched towards intermediate exchange rate regime and finally managed/free floating exchange rate regime. The raising exchange rate flexibility has been also followed with the compatible change of a monetary regime: from exchange rate as a nominal anchor towards the inflation targeting framework. The second group is consisted from Poland, Czech Republic, Slovakia, and Hungary. There is also the third group of a transition economies which couldn't be placed in previously mentioned groups because they didn't practised mentioned monetary paths. Bulgaria, Romania and Slovenia either practised non-transparent monetary strategy, or hybrid regime with more nominal anchors, or they changed nominal anchors but without clear path like the second group. Since Serbia, as a current transition economy, has also passed the monetary path like the second group of countries, the idea of the paper is to draw some conclusions for conducting Serbian monetary policy on the base of comparison with the experiences of Poland, Czech Republic, Slovakia and Hungary. Josifidis, Allegret and Beker Pucar (2009a) emphasized three identified subperiods of combining different monetary and exchange rate regimes in the mentioned economies. The first subperiod of conventional fixed parity with the exchange rate as nominal anchor policy; the second subperiod of intermediate exchange rate regime with transitional, non-transparent monetary strategy; and the third subperiod of managed/free floating with inflation targeting monetary regime. In this paper is focused the third subperiod of flexible monetary and exchange rate regimes.

2. CHANGES IN SELECTED MONETARY TRANSMISSION CHANNELS

In order to draw some conclusions concerning the appropriateness of the combination of managed floating and inflation targeting regimes, selected monetary transmission have been chosen to be empirically investigated: exchange rate pass-through (impulse NER, response CPI), the level of financial euroization (impulse Euribor, response DOMCR), indirect influence to the exchange rates via reference interest rates (impulse NER, response IR), as well as direct influence to the exchange rate via foreign exchange reserves (impulse NER, response FER). The monetary transmission channels are investigated via variance decomposition results from the estimated VAR or VEC models¹. The economy with dominant exchange rate channel (high exchange rate pass-through) and inferior interest rate channel (beside other indicators, it could be reflected through high financial euroization) has the necessity to strongly manage the exchange rate fluctuations. Otherwise, without limiting exchange rate fluctuations, significant exchange pass-through would prevent hitting the inflation target and create negative balance sheet effects. The economies with

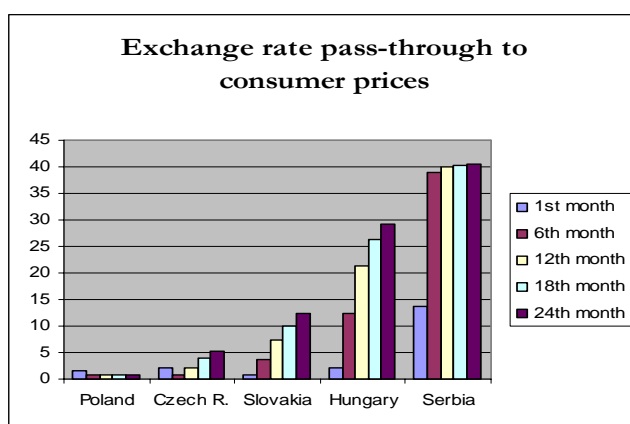
¹ NER – nominal exchange rate, CPI – consumer price index, IR – reference interest rate, FER – foreign exchange reserves, Euribor – euro-zone three-month repo rate, DOMCR – domestic credit activities. Before estimation of the VAR or VEC model the monthly time series (International Financial Statistics from International Monetary Fund, 2009) were logarithmed and deseasonalized, then ADF stationarity test was performed. If time series are non-stationary, Johansen's cointegration test was performed in order to test the existence of a long-run equilibrium relation. If cointegration is confirmed, VEC model is estimated, if not, VAR model. From estimated VAR/VEC models are derived variance decomposition results with different variable ordering depending from concrete monetary channel. In the case of Poland investigated period is 2000:04-2009:01, for Czech Republic 1997:12-2009:01, Slovakia 1998:10-2005:11, Hungary 2001:05-2009:01, and for Serbia 2006:09-2009:01.

unfavorable macroeconomic indicators², here stated high exchange rate pass-through and financial euroization, usually practise hard or dirty managed floating subregime which is compatible with light inflation targeting subregime. From the other side, economies with more favorable macroeconomics circumstances could practise soft managed floating subregime in the combination with full-fledged, classic, strict inflation targeting subregime³.

2.1. Exchange rate pass-through

Observing the results of exchange rate pass-through to consumer prices in the period of inflation targeting (see Figure 1), the highest pass-through is evident in the case of Serbia, then Hungary, Slovakia, Czech Republic and, at the end, Poland. This empirical finding is expected to be related with the (in)direct managing the exchange rate fluctuations. The economy with the high level pass-through (Serbia) is expected to have expressed indirect and direct influence to exchange rate fluctuations because it has to limit exchange rate depreciation in order to hit the inflation target. From the other side, the economy with the lowest exchange rate pass-through is expected to have relatively low direct and the lowest indirect influence to exchange rate fluctuations (Poland).

Figure-1 Exchange rate pass-through to consumer prices in inflation targeting monetary regime in the cases of Poland, Czech Republic, Slovakia, Hungary and Serbia



Source: Josifidis, Allegret and Beker Pucar:2009a.

2.2. Financial euroization

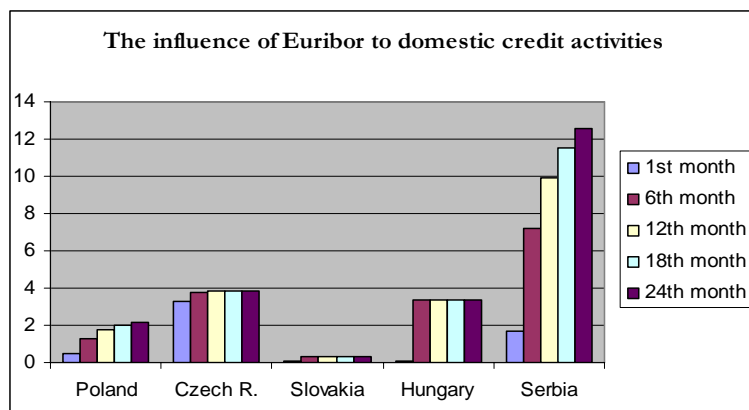
The necessity to limit exchange rate fluctuations is primarily connected to exchange rate pass-through indicator. If exchange rate transmission is relatively strong, depreciations have to be confined in order to attain the inflation target. Besides this crucial reason, exchange rate

² For more details concerning the difficulties with which are confronted emerging and transition economies in practising inflation targeting monetary regime, see in Jonas and Mishkin (2003) and Mishkin (2004).

³ For more details concerning the inflation targeting subregimes see in: Calvo and Reinhart (2002), Carare and Stone (2005), Genberg (2002), Ball and Reyes (2004), Orlowski (2005), Svensson (2007), Roger, Restrepo and Garcia (2009), Habermeier et al. (2009). See in Bofinger and Wollmershäuser (2001) for identification of managed floating subregimes.

depreciations are limited due to emphasized financial euroization. Therefore, there is considerable pressure to dampen exchange rate depreciations because of the negative balance sheet effects. Figure 2 shows the effect of Euribor changes (shock) to changes in domestic credit activities. Higher influence of euro-zone interest rate points to higher financial euroization. In the case of Serbia is evident the highest indicator of financial euroization, follows Czech Republic, Hungary, Poland and Slovakia.

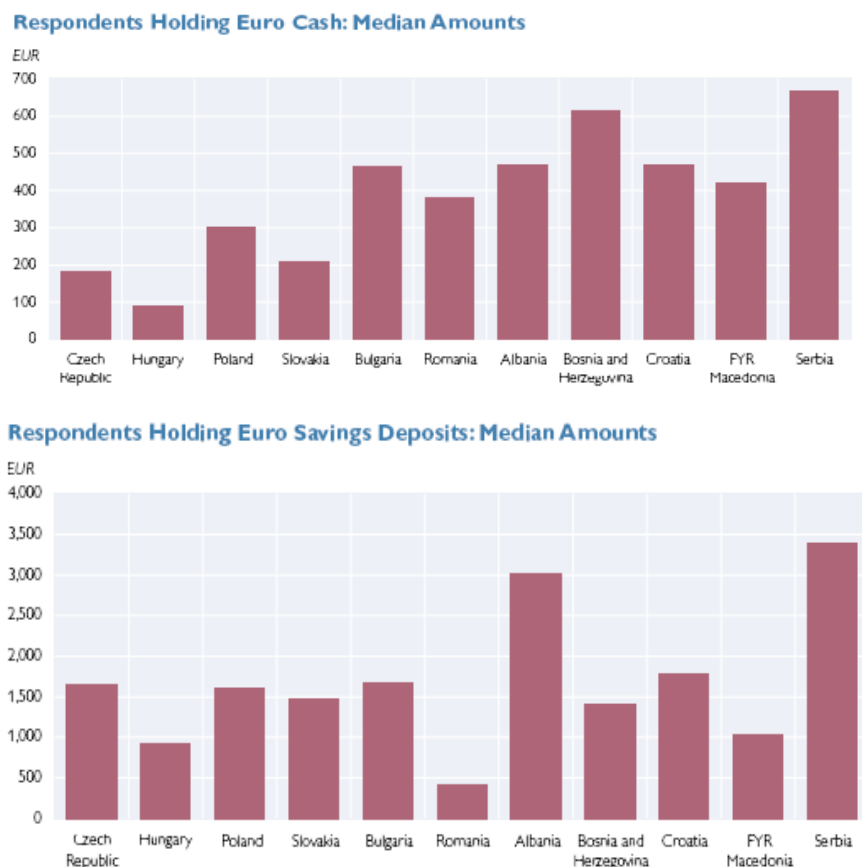
Figure-2 The influence of Euribor to domestic credit activities in the cases of Poland, Czech Republic, Slovakia, Hungary and Serbia in the period of inflation targeting



Source: The authors' calculations.

The highest level of financial euroization in the case of Serbia is also confirmed in Dvorsky, Scheiber and Stix (2008) who analyse the cash and saving deposits denominated in euro as *per capita* indicator in selected former (Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria) and current (Serbia, Croatia, Bosnia and Hercegovina, Albania) transition economies. Serbia has the highest *per capita* level of financial euroization with above 650 euro cash *per capita* and 3400 euro *per capita* saving deposits. Poland, Czech Republic, Slovakia and Hungary as a former transition economies have significantly lower indicators of financial euroization, while countries in the region have higher levels of the indicator, although on a lower level compared to Serbia. Figure 3 presents the indicators of financial euroization according to the mentioned empirical findings of Dvorsky, Scheiber and Stix (2008).

Figure-3 The indicators of financial euroization

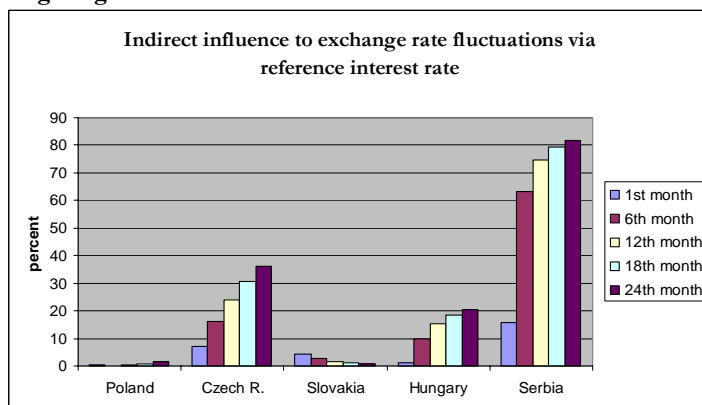


Source: Dvorsky, Scheiber and Stix: 2008: 52, 54.

2.3 Indirect and direct influence to the exchange rates

The Figure 4 shows the results of indirect influence to exchange rate fluctuations via reference interest rate in observed (former) transition economies. On the base of empirical results, it is evident that the highest level of indirect influence to exchange rate via interest rate in the period of inflation targeting regime is recorded in the case of Serbia. Namely, the percent of reference interest rate variations determined with the variations of a nominal exchange rate is 30% after 6 months, 33% after 12 months, 35% after 18 months, and close to 40% after 24 months. The level of indirect influence is on significantly lower level in other observed economies. The highest percent of reference interest rate variations explained with the changes of a nominal exchange rate in Poland is 8% after two years, 8% in Slovak Republic after 12 months, and 13% in Czech Republic after two years.

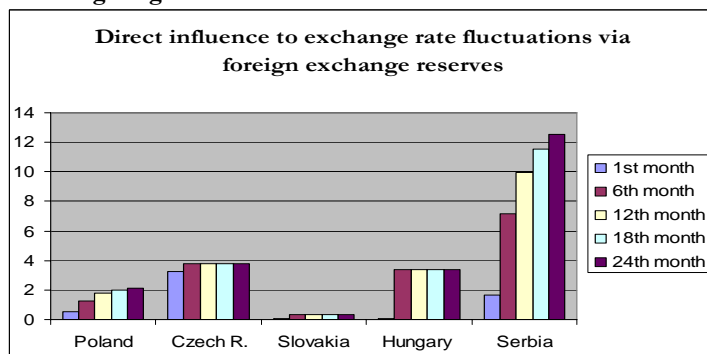
Figure-4 Indirect influence to exchange rate fluctuations via interest rate in the cases of Poland, Czech Republic, Slovakia, Hungary and Serbia in the period of the inflation targeting



Source: Josifidis, Allegret and Beker Pucar:2009a.

Figure 5 shows the percent of foreign exchange reserves variations explained with the changes of nominal exchange rate. By exploring direct influence to exchange rate fluctuations, the conclusion has been made that Republic of Serbia in the highest extent (compared to other cases) directly manages exchange rate fluctuations within inflation targeting regime. After six months, percent of foreign exchange reserves variations explained with the changes of a nominal exchange rate is 17% in the first month of the intervention, after 12 months 63%, 18 months 75%, and after two years 82%. Compared to other former transition economies which also changed a nominal anchor by accepting inflation targeting, the level of a direct influence is significantly higher. For example, in the case of Czech Republic (which is the second according to direct influencing the exchange rate movements, but significantly below Serbia), foreign exchange interventions affect exchange rate fluctuations with 37% 24 months after the intervention, Hungary with 20%, while direct influence in the case of Poland and Slovakia is inconsiderable.

Figure-5 Direct influence to exchange rate fluctuations via foreign exchange interventions in the cases of Poland, Czech Republic, Slovakia, Hungary and Serbia in the period of the inflation targeting



Source: Josifidis, Allegret and Beker Pucar: 2009a.

3. CONCLUSION

Successful practising the combination of flexible exchange rate regime and inflation targeting framework assumes that exchange rate shouldn't be the nominal anchor, hence, it is not favorable to have expressed exchange rate pass-through and financial euroization as a main factor for limiting fluctuations. If the economy has significant exchange rate pass-through and dominant exchange rate channel in a monetary transmission mechanism, exchange rate movements have to be prevented in order to attain the inflation target. Similarly, monetary authority of the economy with strong financial euroization and consequently weak interest rate channel has to limit the fluctuations in order to avoid negative balance sheet effects. Having in mind the investigated monetary channels, Polish case is most adequate for the combination of managed floating exchange rate regime and inflation targeting framework. In the case of Poland, exchange rate pass-through is relatively low, financial euroization relatively weak, and the results confirm weak (in)direct influence to the exchange rate. Since the fluctuations are relatively free, without heavily limiting the exchange rate fluctuations, it could be assumed that Poland *de facto* practise soft managed floating regime with full-fledged inflation targeting framework. The cases of Czech Republic, Slovakia and Hungary are not so obvious as Polish and Serbian cases. In the case of other observed (ex) transition economies, exchange rate pass-through is higher, asymmetric, financial euroization stronger, thus the higher (in)direct influence to exchange rates. The other extreme is the Serbian case which presents the least suitable case for combining managed floating regime in inflation targeting framework. Exchange rate pass-through is the most emphasized in the case of Serbia, financial euroization most dominant, thus, the direct influence via foreign exchange interventions and indirect via reference interest rates is the strongest, as has been expected. In less favorable and vulnerable macroeconomic circumstances, Serbian monetary authorities could practise only hard, dirty or manipulative managed floating in the combination with light inflation targeting subregime. Further improvements concerning strengthening an interest rate channel (connected with weakening of financial euroization) and weakening an exchange rate channel, would decrease the necessity for hard managing the exchange rate fluctuations with the possibility to practise soft managed floating within light inflation targeting framework.

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