IMPACT OF THE MACROECONOMIC VARIABLES ON MOLDOVAN LEU EXCHANGE RATE

PhD in Economics, Associated Professor Viorica Lopotenco
Republic of Moldova, Chişinău, Academy of Economic Studies of Moldova
PhD in Economics, Associated Professor Ana Cîrlan
Republic of Moldova, Chişinău, Academy of Economic Studies of Moldova

Abstract

The main objective of this study is to determine the interconnections between the exchange rate of the Moldovan leu and macroeconomic variables.

To determine the links between the exchange rate and macroeconomic variables, it was proposed to test so-called major puzzles in the international economy in the Moldovan financial system. Therefore, the interdependence between the exchange rate of the Moldovan leu and the following macroeconomic variables was established: the real interest rate, the annual inflation rate, and the current account balance. At the same time, the efficiency of the intervention from the Republic of Moldova foreign exchange reserves was also determined.

As a result of this study, it was highlighted that in the Republic of Moldova, the international economy's major puzzles are manifested in the way they are described in the specialized literature.

Thus, in the Republic of Moldova, in managing the exchange rate, it is essential to evaluate the impact it can generate on macroeconomic variables.

Keywords: *REER; macroeconomic variables; foreign exchange reserves; major puzzles in the international economy.*

Introduction

In modern financial systems, for the most part, exchange rates are a parallel or secondary correctable macroeconomic policy target. At the same time, due to the systemic impact on other economic variables, they can also act as monetary policy instruments. At the same time, it should be noted that the choice of a monetary framework is closely related to the currency regime. A practical inflation targeting framework can be supported in this context, especially by a flexible exchange rate regime. At the microeconomic level, the exchange rate in developing economies is one of the essential factors which have a significant impact on the motivation of economic entities, through the formation of relative international competitive advantages, in international trade.

In the Republic of Moldova, the Moldovan leu regime was established as an independent floating after the transition of the inflation-targeting strategy. However, even under these conditions, this type of currency regime classification is characterized by the increased attention of central banks to the dynamics of nominal and real exchange rates.

Purpose of the study: This publication aims to analyze the interdependencies between the evolution of the exchange rate of the Moldovan leu and macroeconomic variables, but also to test how the so-called major puzzles from the international economy manifest themselves in the Moldovan financial system.

2. Literature review

Discussions of fixed versus flexible exchange rates in the 1960s, proponents of a system of flexible exchange rates had an evident vision of how such a system would work (Bofinger, 2011). According to Harry G. Johnson, flexible rates would allow each country to simultaneously pursue unemployment and price trend objectives consistent with international equilibrium. According to Harry G. Johnson, flexible rates would allow each country to simultaneously pursue unemployment and price trend objectives consistent with international equilibrium (Johnson, 1969).

The following theoretical assumption: exchange rates are at least in the medium term determined by the relative version of purchasing power parity theory (PPP). According to PPP, differences between national inflation rates are the primary determinant of flexible exchange rates, so the real exchange rate remains constant over time. In this situation, interventions on the foreign exchange market were not necessary because exchange rates, according to theorists, are determined by the market and provide an adjustment to imbalances in national macroeconomic developments. On the other hand, an equilibrium level of the exchange rate is formed on the market, and any attempt to influence it will not be successful because the volumes of transactions on the foreign exchange market far exceed the limits of the foreign reserves of the central banks.

The evolution of nearly 50 years under the regime of flexible exchange rates has shown us that reality is difficult to reconcile with this idealized image. Therefore, the specialized literature states that bilateral nominal exchange rates cannot be satisfactorily explained by any kind of macroeconomic foundation. Maurice Obstfeld and Kenneth Rogoff discuss a “purchasing power puzzle” and a more general “disconnection puzzle” as one of six major puzzles in the international economy. The first puzzle “highlights the weak link between exchange rates and national price levels” (Obstfeld and Rogoff, 2000).

The second puzzle "largely alludes to the fragile relationship (except perhaps in the long run) between the exchange rate and virtually any macroeconomic aggregate." Finally, regarding the uncovered interest rate parity relationship, Kenneth Froot and Richard Thaler identified the anomaly of a "forward premium puzzle," which indicates that currencies that have a positive interest rate differential appreciate rather than depreciate. All this proves that to present; researchers address the exchange rates topic and stay many questions that still need to be answered (Froot and Thaler, 1990).

Materials and Methods

In the context of significant puzzles in the international economy, the interdependence between the exchange rate and the current account balance is also joined. High volatilities in exchange rates are generally associated with significant changes in current account balances. However, after the financial crisis, exchange rates have played a more limited role in adjusting current account balances. Strong movements in aggregate demand, especially investment, led to the adjustment of current account balances. According to IMF analyses, the relationship between current account imbalances and exchange rate changes was weak, reflecting the underlying shock's global nature (IMF, 2016). Moreover, even in countries where real exchange rates changed, current account adjustments were modest (right panel).

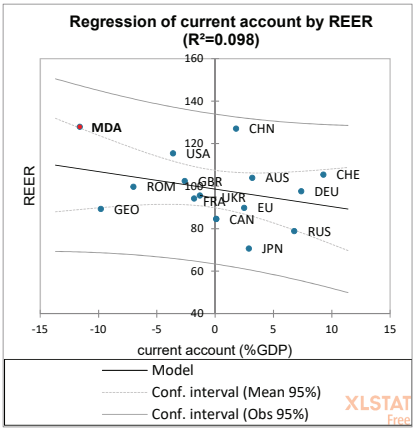


Figure 1. Real Effective Exchange Rate and Current Account, 2021

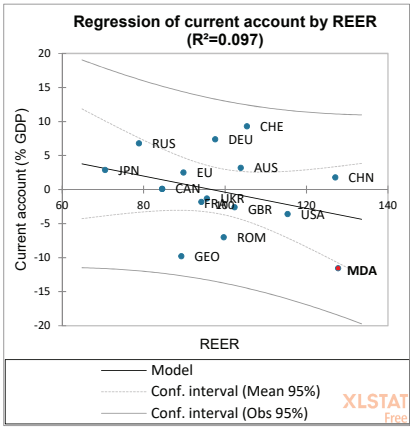


Figure 2. Current Account and Real Effective Exchange Rate, 2021

IMF experts determined the interdependence between the current account balance and exchange rate fluctuations during two periods: 1995–

2007 and 2008–2019. Thus, for the two sub-periods, there is no systematic relationship between current account balances and changes in exchange rates (IMF, 2020). The situation was identical in 2021 (figure1 and figure 2). This does not mean that exchange rate fluctuations cannot have an impact on countries with large external creditor positions, such as Switzerland. However, when calculated over long periods of time, these valuation effects are not systematically related to the current account balance. This result suggests that valuation effects are driven by bonds and assets, price differentials, debt restructuring, and debt write-offs.

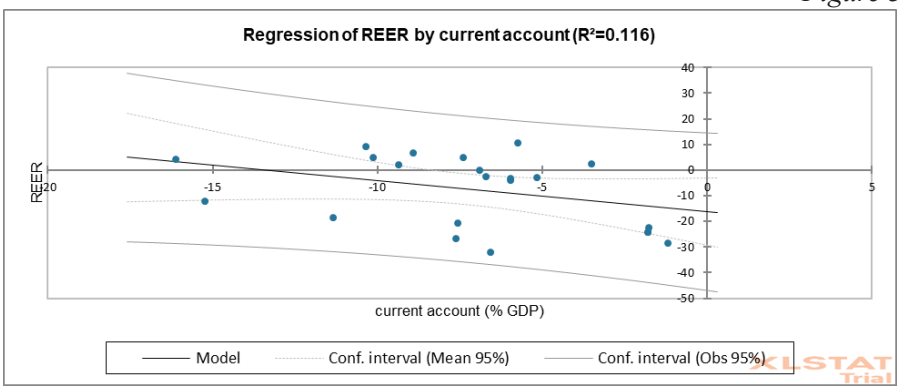
According to the External Sector Report, 2022, global imbalances (the sum of surpluses and absolute surplus deficits) represented approximately 3.5% of world GDP in 2021 (IMF, 2022). Expectations for global current account balances, according to the same report, were headed for a gradual narrowing as a result of the gradual overcoming of the consequences of the pandemic. But this prospect has proven to be uncertain and subject to several risks, especially in the wake of the war in Ukraine. In this situation, the policies of external rebalancing differed depending on the effects caused by COVID-19, amplified by the war in Ukraine on individual economies.

Results and discussion

The Republic of Moldova situation shows us the same thing. However, from figure 1 and figure 2, a classic interdependence results - in 2021, REER in our country increased the most from the group of countries analyzed, and, therefore, the current account balance in GDP had the worst value -11.6% in GDP. However, if we construct a linear regression for 2000-2021, we can see that this interdependence is small (figure 3).

Real Effective Exchange Rate and Current Account, 2000-2021

Figure 3



Another major puzzle in the international economy, which also manifests itself in the Republic of Moldova financial system, can be seen in figure 4 namely the weak relationship between the exchange rate and the real interest rate and between the exchange rate and the annual inflation rate in figure 5.

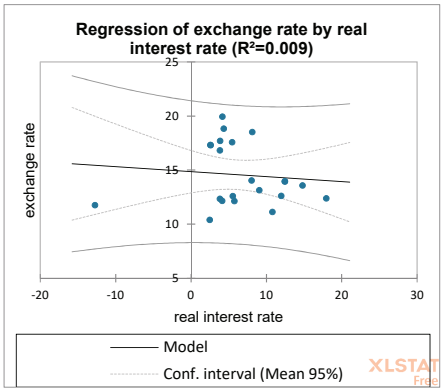


Figure 4. The relationship between the official exchange rate USD/MDL and the real interest rate, 2001-2021

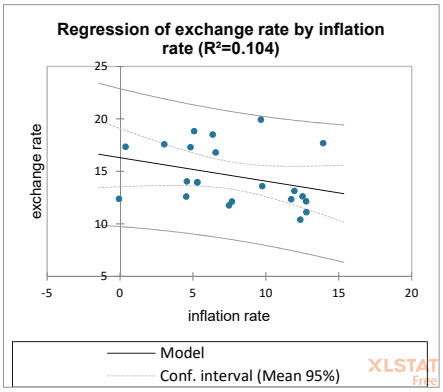


Figure 5. The relationship between the official exchange rate USD/MDL and the annual inflation rate, 2001-2021

At the same time, it shows interest and interdependence between foreign exchange interventions and exchange rates.

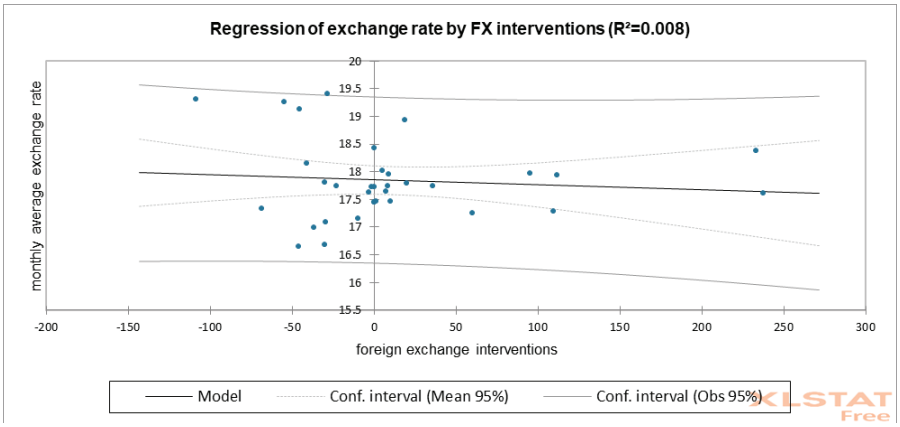
IMF staff regularly assess whether the frequency of currency interventions by central banks is consistent with de facto floating arrangements. These assessments are based on publicly available information, information reported to the IMF by member countries, market reports, and other sources, including information obtained during official visits by its staff to member countries. Central banks generally intervene to increase reserves or reduce excessive market volatility. However, they can also intervene in the foreign exchange market to combat depreciation pressure on the country's currency, which may have contributed to reduced reserves in emerging markets and developing economies.

As for intervention techniques, they are mainly carried out in the spot foreign exchange market, either by directly contacting market participants (all or only a selection - for example, market makers) or in some countries through foreign exchange auctions. However, currency interventions can also be made in the futures markets. In addition, buy/sell schedules may be announced in advance. The intervention program should indicate the nature, frequency, and

size of the central bank's foreign exchange transactions to avoid influencing foreign exchange market expectations. According to information presented by the IMF, some countries accumulate reserves following a pre-announced auction calendar (Albania) or may make foreign exchange purchases and sales for the government pension fund (Norway). Russia bases its intervention volume on oil and gas revenues (IMF, 2019).

The link between FX interventions and monthly average exchange rate

Figure 6



The link between foreign exchange interventions and the evolution of the exchange rate in the Republic of Moldova is presented in figure 6. In this case, we can use linear regression to understand how effective the currency interventions were. In our case $R^2 = 0.008$, which indicates a lack of efficiency of foreign exchange market interventions from/for the foreign exchange reserve.

Foreign exchange reserves are significant macroeconomic categories, especially for developing countries, because, simultaneously with its consolidation, confidence in the country's financial system becomes greater. Given that developing countries are exposed to external shocks, it is helpful to have some "pillar" (foreign exchange reserves) to defend their macroeconomic position. The importance of foreign reserves results from the purpose of their use (Borio et all, 2008). The IMF has developed a guide stipulating all possible uses of a country's international foreign exchange reserves (IMF, 2013). In this context, within from foreign exchange reserve intervention mechanism, it is essential to respect the exchange rate regime, the payment capacity of a country, the degree of vulnerability of the economy to external shocks the

country, as well as the internal instruments available to the country's monetary policy.

Conclusions

The theoretical and empirical literature analysis on the correlations between the exchange rate and other macroeconomic variables demonstrates that there is no consensus on these variables' impact. There is a significant variety of empirical approaches/methodologies applied to different sets of countries. The Republic of Moldova is a country with a small and open economy, with an extremely high share of remittances in GDP, a current account deficit, and a growing dependence on international financial inflows, making the country's financial system vulnerable to global economic and financial trends. The aftermath of the global economic crisis, induced by COVID-19, and exacerbated by the war in Ukraine, further increased the exposure of the Republic of Moldova to external developments. In these circumstances, it is imperative to follow the evolution of the exchange rate and its interconnections with different macroeconomic variables, given that the exchange rate in the economy of the Republic of Moldova has a significant impact on the motivation of economic entities.

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