Advances in Social Science, Education and Humanities Research, volume 486
Proceedings of the Research Technologies of Pandemic Coronavirus Impact (RTCOV 2020)

Estimated Exchange Rate Opportunities Generated by the COVID-19 Pandemic in Romania in 2020

Ţălu S.[1,*] Nazarov A.D.[2]

[1]*Technical University of Cluj-Napoca, The Directorate of Research, Development and Innovation Management (DMCDI), Cluj-Napoca 400020, Romania*
[2]*Institute of management and information technologies, Ural State University of Economics, Ekaterinburg 620144, Russian Federation*
[*]*Corresponding author. Email: stefan_ta@yahoo.com*

ABSTRACT
The purpose of this study is to evaluate the impact of COVID-19 pandemic in Romania in 2020 over the estimated exchange rate and also identifies the magnitude of the depreciation of the national currency at the end of 2020. Appreciating the economic impact of this epidemic, as well as a worsening of the macroeconomic situation in Romania, accelerated starting with October 10, 2020, it is estimated that these negative effects will be felt until the end of 2020, when the EUR / RON exchange rate can reach the threshold of 4.9295 RON. In this fiscal context, international investors began to prefer investments in safer assets, such as gold, which recorded the highest price in the last 7 years.
Keywords: *COVID-19 pandemic, exchange rate Euro (EUR) to Romanian Leu (RON), Exchange Rate Mechanism II (ERM II), Exchange rate stability*

1. INTRODUCTION

In late December 2019, the World Health Organization (WHO) received reports of an outbreak of a severe respiratory infectious disease in Wuhan, China. The WHO officially announced on January 7, 2020, that the pathogen virus genome has been identified as a new coronavirus (COVID-19 / SARS-CoV-2).
The global COVID-19 crisis has a strong regional and local impact at all levels operating in a context of radical, heterogeneous uncertainty, and given multilateral health, economic, fiscal, and social challenges, it is forcing governments to make difficult trade-offs with strong scope and implications for the crisis management and national and international policy responses.
Beyond the human tragedy and the loss of health, the COVID-19 pandemic triggered the worst economic crisis in a century. Although there is no concrete way to assess exactly what the general economic damage caused by the new global coronavirus pandemic COVID-19 will be, the severe negative impact on the global economy is clearly felt on all levels: social, economic, human and financial.
Although the COVID-19 epidemic creates real difficulties for national administrations, uncertainty about the evolution and duration of the coronavirus crisis makes it difficult to predict, as well as losses in gross domestic product (GDP) growth or to propose concrete, appropriate and feasible solutions for economic recovery.
The COVID-19 pandemic will have short-, medium- and long-term effects on government fiscal policies and in establishing the right economic policy measures.
The first case of coronavirus (COVID-19) in Romania was confirmed on February 26, 2020. However, as of March 31, 2020, a minimum of 200 cases per day was confirmed. Currently, on October 10, 2020, a minimum of 3,517 cases per day was confirmed, being another absolute record since the beginning of the COVID-19 pandemic (fig. 1) [1].

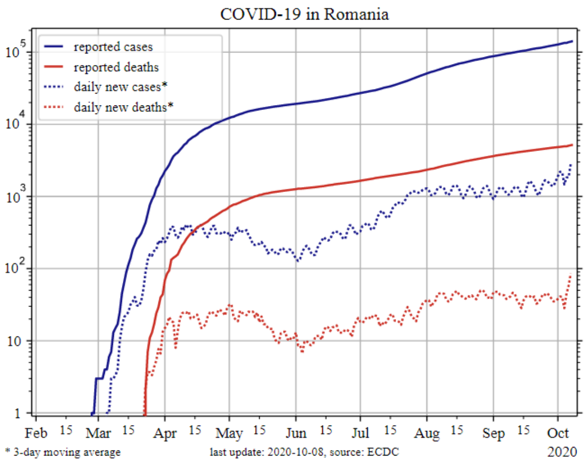

Figure 1 Diagram showing the number of COVID-19 cases using the logarithmic scale in Romania [1]

The spread of the coronavirus epidemic caused great disturbances in the financial market, especially since most companies in Romania did not have a risk strategy plan prepared for this kind of situation.
From an economic perspective, the Romanian GDP is expected to decrease by 2.1 percent by the end of 2020. The inflation rate is also likely to increase from 3.3 percent to 3.5 percent in 2021. Moreover, by March 15, the

Bucharest Stock Exchange registered one of its lowest drops in the last thirteen years. In this regard, the Romanian government and the National Bank of Romania (NBR) are expected to implement additional measures in the following days to support not only the companies and their employees but also the very high number of people left unemployed because of the COVID-19 epidemic.

.It is known that the exchange rate plays an important role as a public indicator of the stability and general economic situation in a country. Exchange rate stability is one of the convergence criteria that Romania must meet in order to join the euro area.

It is known that the convergence criteria ensure that a Member State is prepared to introduce the euro and that its accession to the euro area will not cause economic risks for that Member State or for the euro area as a whole. The criteria are set out in Article 140 (1) of the Treaty on the Functioning of the European Union [2].

Economic convergence criteria are the obligatory economic conditions for joining the euro area and ensure that a country is ready for integration into the monetary regime of the euro area. There are four economic convergence criteria:

1. Price stability

The inflation rate may not exceed 1.5 percentage points above the rate of the three best performing Member States.

2. Correct and sustainable public finances

The country should not be subject to the excessive deficit procedure.

3. Exchange rate stability

The country must participate in the exchange rate mechanism (MCS II) for at least two years without significant deviations from the central MCS II exchange rate and without a devaluation of the bilateral central exchange rate of its currency against the euro over the same period.

4. Long-term interest rates

The long-term interest rate should not be more than two percentage points above the rate of the three Member States with the best results in terms of price stability.

Legal convergence

Applicants for accession to the euro area must also ensure that their national legislation is compatible with the Treaty and the Statute of the European System of Central Banks (ESCB) and of the European Central Bank (ECB).

The treaty and the statute provide for the independence of central banks.

The purpose of the Exchange Rate Mechanism (MCS II) is to demonstrate that a country's economy can function properly without resorting to excessive monetary fluctuations. When a non-euro area country enters ERM II, its national currency is pegged to the euro at a central exchange rate agreed with euro area Member States, non-euro area countries already participating in ERM II and ECB, with the involvement of the Commission. A currency fluctuation within the standard limit of 15% above or below this agreed central exchange rate is then permitted. Participation in ERM II is voluntary but is a mandatory step towards joining the euro area.

In this international context generated by the global, deep, and accelerated health crisis, the exchange rate must be monitored and, if necessary, measures taken so that the economic shocks caused by COVID-19 do not affect the stability of the exchange rate in Romania.

The exchange rate is the expression of a generalized balance on the real market, the money market, and the capital market. The evolution of the exchange rate is influenced by a multitude of factors, such as the degree of economic growth, the dynamics of prices on the market of goods and services (inflation), the branch structure of the national economy, international competitiveness, and the degree of external openness, the evolution of domestic policy or the performance of governments to manage and resolve the internal crises of the economy at a given time.

This complex of factors that directly or indirectly influence the exchange rate makes the modeling process complex and difficult to estimate, primarily due to the special dynamism, which records continuous daily changes and even from one transaction to another, due to economic, financial, political (political stability, social movements), social, military, medical factors, psychological factors (political or economic events, statements, electoral programs), etc. At the same time, the connections between the foreign exchange market, the real market, the money market, and the capital markets make the evolution of the short, medium, or long term exchange rate influence the general economic balance [3, 4].

Iyke [5] proposed a new channel of exchange rate return predictability, namely the disease outbreak channel, due to COVID-19 tends. He explored the impact of COVID-19 on return volatility by introducing an indicator of COVID-19 in the variance equation.

Different researchers confirmed that anomalies in the foreign exchange market can be exploited to develop exchange rate frameworks/strategies that outperform a random walk framework [6].

Eichenbaum et al. [7] presented a study on the macroeconomics of epidemics and propose a complex macroeconomic model simulating certain scenarios of the impact of the COVID-19 pandemic. Other researchers evaluated the dynamics and impact of the COVID-19 pandemic on the entire macroeconomic framework [8-12].

According to the National Bank of Romania, the current regime of the RON exchange rate is that of controlled floating, which is in line with the use of inflation targets as a nominal anchor of monetary policy and allowing a flexible response of this policy to unforeseen shocks that can affect the economy.

This paper analyzes the impact of the COVID-19 pandemic in Romania on the EUR / RON exchange rate and provides a correct forecast of the exchange rate for the end of the year 2020 in Romania, based on a multivariate method that takes into account the main factors that affect the EUR / RON exchange rate. Our empirical study simulates a connection between disease outbreaks and exchange rate determination.

2. RESEARCH METHODOLOGY

In this study, a set of questions was proposed:
1. Assumptions regarding the evolution of the EUR / RON exchange rate.
2. The forecast of the depreciation of the RON by the end of 2020 in correlation with on developments in public health.
3. The forecast on future measures taken by the National Bank of Romania (NBR), in the context of the crisis caused by the COVID-19 pandemic, towards providing the necessary liquidity and maintaining financial stability.

3. DISCUSSION

In general, the risks that influence this year's growth projections regarding the evolution of the EUR / RON exchange rate are severe and interconnected, doubled by the appearance of a second pandemic wave, the lack of a recognized vaccine, the speed of recovery of the main trading partners, changes in consumer behavior, etc.
It is known that the forecast for the Romanian economy is based on a series of hypotheses that take into account the pandemic in Europe and in the country, the measures to slow down the rate of contagion that have been taken by as well as the effect of macroeconomic stabilization measures in relation to what is estimated the pace and duration of economic recovery.
By having relatively effective control over short-term interest rates, the central bank can also influence the motivation of economic agents to hold national currency compared to that of holding foreign currency and thus the exchange rate. However, the evolution of the exchange rate is the result of the action of a much larger number of factors (eg risk aversion of foreign investors, internal and external macroeconomic imbalances (interest rate differential), political factors, etc.). Monetary policy cannot act on some of these factors, and on others, it has a limited and strictly influenced influence by the coherence of other macroeconomic policies (fiscal, income, structural reforms). In the conditions of increasing the transparency and credibility of the central bank's approaches, anchoring inflationary expectations to a trajectory compatible with its inflation objectives becomes one of the strongest and most efficient channels for transmitting monetary policy.
The NBR quickly adopted at the beginning of the 2020 year, given the exceptional nature of the pandemic situation, a package of measures to support the Romanian economy, and collaborated with the Romanian Government to avoid a possible conflict between the measures taken and the fiscal ones.
In this international monetary context, the NBR applied significantly pro-cyclical fiscal policies, as well as a more restrictive monetary policy, by keeping at a relatively high level both the monetary policy interest rate, respectively 2.5%, and the minimum reserve rates. obligations of credit institutions for liabilities in RON and those in foreign currency (respectively at 8%).
Furthermore, the NBR maintained the controlled floating regime and decided to provide liquidity, in order to prevent excessive volatility of the nominal exchange rate and to prevent an unnecessary major depreciation of the national currency. However, in the face of the complexity of the context of the COVID-19 pandemic, the NBR had to accept, in March 2020, a depreciation substantial change in the national currency RON, which materialized in a sharp rise in the EUR /RON exchange rate (fig. 2). This attitude can be interpreted as a manifestation of a policy prudent, saving forces for possible future critical situations [13].
The National Strategy and Forecast Commission forecast in 2020 an average exchange rate of 1 EUR = 4.84 RON, the forecast being published in April 2020.
With the evolution on an ascending slope of the COVID-19 pandemic in October 2020, there is an ascending evolution of the EUR / RON exchange rate, which will have a level around 1 EUR = 4.9295 RON at the end of 2020.
The historical chart for the period January 1st, 2020 to October 9th, 2020, of Euro (EUR) to Romanian Leu (RON) is shown in fig. 2. It can be seen in this chart that some peaks appeared in the month's March and April with a high EUR / RON exchange rate (around 1 EUR = 4.86 RON).

Figure 2 Euro (EUR) to Romanian Leu (RON) - historical chart for year 2020

A multivariate method was applied to decompose EUR / RON and information provided by the evolution of other macroeconomic variables, taking into account the interdependencies (their dynamics and fluctuations) between them and the analyzed variable [14, 15].
In an evaluation of the EUR / RON exchange rate, the autoregressive vector (VAR) methodology was applied, because is an efficient method applied in time series analysis. This method can be considered as a generalization of both the self-regressive univariate model, but also of the simultaneous equations, taking into account the fact that lags of the other endogenous variables are included in each equation. Also, it is highlighted that,

usually, exogenous variables are not included in the model, as is done in modeling.

4. CONCLUSION

Developments in public health in the year 2020 affect economic activity and the normal functioning of financial markets, with a direct impact on macroeconomic stability and financial stability of Romania. At the same time, there is a high volatility on the international markets generated by the uncertain evolution of the COVID-19 pandemic; this international volatility putting pressure on the EUR / RON exchange rate. Applying the proposed research method and analyzing the NBR fiscal policies we forecast the EUR / RON exchange rate can reach the threshold of 4.9295 RON at the end of the 2020 year.
However, the NBR's control over the exchange rate has some limitations, both regarding the excess of flexibility and the rigidity, which cannot be a long-term solution in limiting the negative impact of COVID-19 on the exchange rate.

REFERENCES

[1] https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide

[2] https://www.consilium.europa.eu/ro/policies/joining-the-euro-area/convergence-criteria/

[3] F.P.C. Lilea, O. Bîrsan, I. Radu, The Main aspects regarding the construction of currency exchange models, Romanian Statistical Review Supplement 1 (2020) 114-125.

[4] C. Anghelache, M. Panait, I.A. Marinescu, G. Niță, (2017). Models and indicators used in macroeconomic forecast. Romanian Statistical Review Supplement 3 (2017) 40-48

[5] B.N. Iyke, The Disease Outbreak Channel of Exchange Rate Return Predictability: Evidence from COVID-19, Emerging Markets Finance and Trade 56(10) (2020) 2277-2297, DOI: 10.1080/1540496X.2020.1784718.

[6] R.J. Hodrick, Risk, uncertainty and exchange rates, J. of Monetary Economics 23(3) (1989) 433–459. DOI: 10.1016/0304-3932(89)90041-X.

[7] M.S. Eichenbaum, S. Rebelo, M. Trabandt, The macroeconomics of epidemics, NBER Working Paper Series, No. 26882, 2020.

[8] R.J. Barro, J.F. Ursúa, J. Weng,, The Coronavirus and the Great Influenza Pandemic: Lessons from the "Spanish Flu" for the Coronavirus's Potential Effects on Mortality and Economic Activity, NBER Working Paper No. 26866, 2020.

[9] S. Correia, S. Luck, E. Verner. Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu, 2020.

[10] Ò. Jordà, S.R. Singh, A.M. Taylor, Longer-run economic consequences of pandemics, Federal Reserve Bank of San Francisco Working Paper 2020-09, 2020. https://doi.org/10.24148/wp2020-09

[11] E. Kohlscheen, B. Mojon, D. Rees, The macro-economic spillover effects of the pandemic on the global economy, BIS Bulletin 4 (2020).

[12] W. McKibbin, R. Fernando, The global macro-economic impacts of Covid-19: seven scenarios, CAMA Working Paper 19 (2020).

[13] R. Dumitriu, R. Stefanescu, Răzvan, Some challenges for the Behavioral Finance in the Context of COVID-19, MPRA Paper (2020) 99675.

[14] L.L. Albu, C.I. Preda, R. Lupu, C.E. Dobrotă, G.M. Călin, C.M. Boghicevici, Estimates of dynamics of the COVID-19 pandemic and of its impact on the economy, J. for Economic Forecasting 2 (2020) 5-17

[15] Ș.V. Iacob, D. Dumitru, Models used in exchange rate forecasting, Romanian Statistical Review Supplement 1 (2020) 22-37.