

THE CHARACTERISTICS OF INTEREST RATE CHANNEL IN CENTRAL AND EAST EUROPE

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Abstract

This paper tries to analyze the structural features of the Central and East European economies so that we can identify the most relevant information in order to understand the monetary transmission mechanism through the interest rate channel. The research sample consist of Central and East European countries which are members of the European Union, but not yet members of Eurozone, countries that have the same monetary policy objective, the same monetary policy strategy, as well as regimes based on floating or controlled exchange rates. As a result of the research, we can appreciate that in these countries there was a gradual consolidation of the economy, which makes the transmission of monetary policy easier to perform compared to the previous years.

Keywords: monetary policy, central banks, transmission mechanism, interest rate channel,

Clasificare JEL : M40, M41

1. Introduction

The monetary policy transmission mechanism consists in several channels, which are not mutually exclusive, through which the evolution of monetary policy decisions affects the behavior of other economic variables. The literature identifies a series of monetary policy transmission channels. They vary depending on the type of monetary policy, thus we can have transmission channels of conventional or unconventional monetary policy. Of course, there are channels which are effective for the transmission of both types of policies.

This paper tries to analyze the structural features of the Central and East European economies so that we can identify the most relevant information in order to understand the monetary transmission mechanism through the interest rate channel.

2. The characteristics of interest rate channel in Central and East Europe

As a result of a study carried out on the literature, we identified the fact that in the Central and East Europe (CEE), within the monetary policy transmission mechanism, the interest rate channel has the biggest influence. The interest rate channel affects, in a direct way, the interest rates from the money market and in an indirect way the interest rates used by commercial banks. When nominal prices adjust slowly, these changes in terms of nominal interest rates translate into changes in real interest rates. Thus, households which are facing higher borrowing costs will no longer invest in the purchase of real estates, cars or other durable goods, while the economic agents, in the same situation, will reduce the investment costs. All these actions will affect the supply and demand in goods and labor market, which will further lead to a decrease in terms of inflation.

In Eastern European countries, credit institutions have the largest share in the structure of the financial system, which is why the interest rate channel, as part of the monetary policy transmission mechanism, is very important. In order to identify relevant information so that we can understand

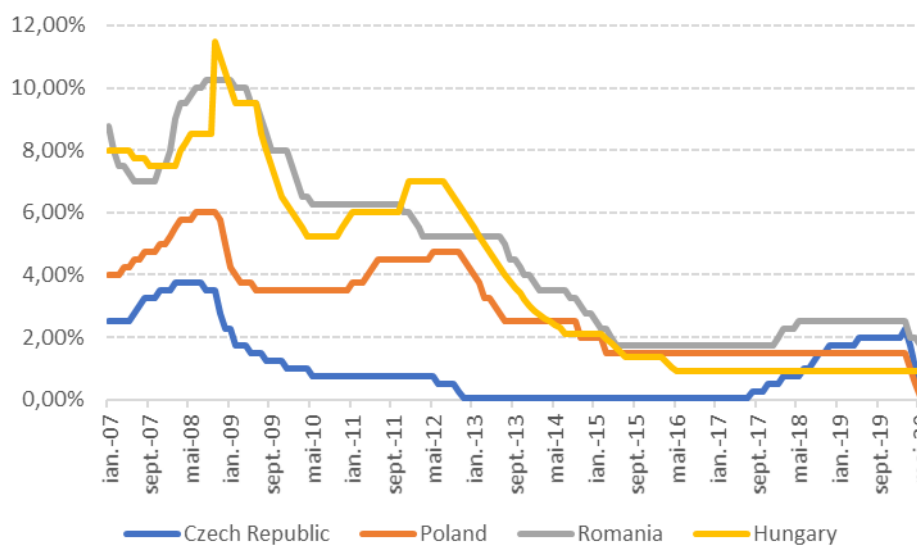
the monetary transmission mechanism through the interest rate channel, we consider to be necessary a general analysis of the structural features of Central and East European economies.

The research sample consist of Central and East European countries which are members of the European Union, but not yet members of Eurozone, countries that have the same monetary policy objective (financial stability), the same monetary policy strategy (direct inflation targeting), as well as regimes based on floating or controlled exchange rates. The concerned countries are the Czech Republic, Poland, Romania and Hungary.

The monetary policy instruments used by the analyzed countries have been adapted to the practices of the European Central Bank. The permanent facilities granted to credit institutions, together with the minimum reserve required are monetary instruments used by all four countries. In addition, the Czech Republic, Poland and Romania are also using a series of open market operations. Besides the three instruments mentioned above, the Czech Republic also uses some foreign exchange interventions which consist in purchasing or selling currencies on the exchange market in order to reduce the foreign exchange markets' volatility. Among the additional monetary policy instruments used by the National Bank of Hungary we can highlight the following: preferential deposit, asset purchase programs, liquidity forecast, tenders and quick tenders.

As we can see in Figure no. 1, during the analyzed period, the pace and extent to which monetary policy interest rates decreased in the four states were different. We chose to analyze the period between January 2007 - June 2020 because, at that time, all four states were members of the European Union (Romania becoming a member on January 1, 2007). During the global financial crisis (2007-2008), central banks of Czech Republic, Poland and Romania chosed to rise the interest rates, but after mid-2008, the banks have suddently decreased the rates in order to help the economies by depreciating the national currencies. In contrast, Hungary decided to increase the interest rate in October 2008 to stop the forint depreciation.

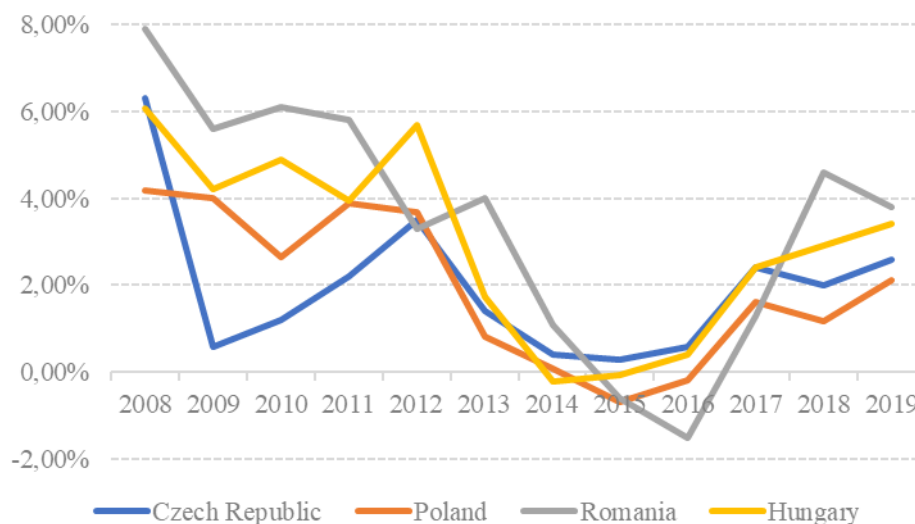
Figure no. 1 – The evolution of monetary policy rate in the analyzed CEE countries (January 2007 - June 2020)



With the end of the 2007-2008 financial crisis, the level of monetary policy rates in the four analyzed states began to decline. In Czech Republic, the reference rate remained very low (starting with November 2012, it remained at 0.05%). In the other three states, the monetary rate remained at a rather high level until the beginning of 2015. The main reason why in Poland, Romania and Hungary the monetary policy rates remained at a higher level was the fact that in the above-mentioned countries, the inflation rate was higher than the Czech Republic inflation (see Figure no. 2). Subsequently, in 2015-2018, the monetary policy interest rate started to decrease in these three states as well, due to the fact that the annual inflation rate was lower than the forecasted one, against the background of the aggregate demand deficit, as well as the persistence of low inflation

in the euro area. Starting 2018, the National Bank of Romania and the National Bank of the Czech Republic proceeded to increase the level of this rate. However, as a result of the protection measures taken against Covid-19, both globally and locally, the central banks of CEE have reduced the monetary policy rate to ensure a greater stability for both the exchange rate and interest rates, in order to prevent a possible crisis.

Figure no. 2 – The evolution of inflation rate in the analyzed CEE countries (January 2007 - June 2020)



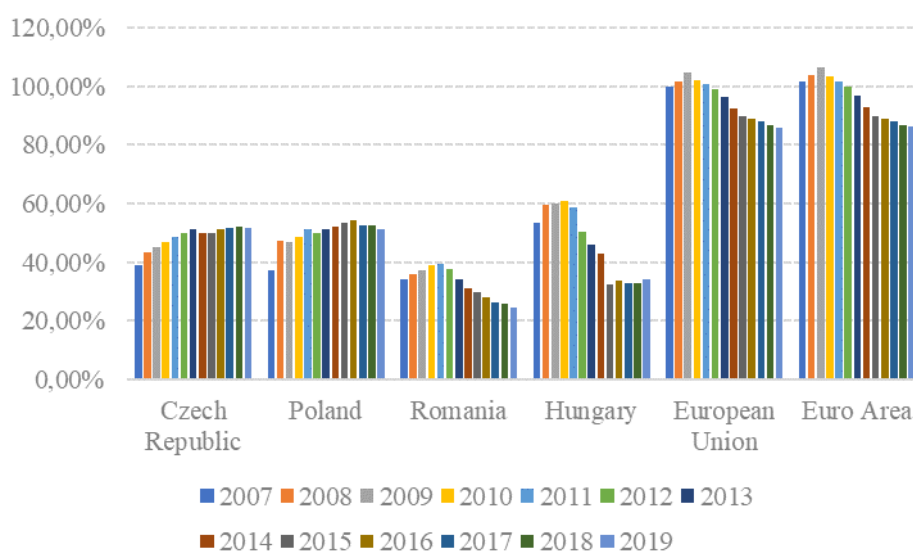
Radu, R. (2010) has identified in his paper the main structural characteristics specific to the interest rates transmission to be:

- financial intermediation;
- the structure of private sector loan;
- the structure of banking system deposits;
- the degree of competition in the banking system;
- substitutability of bank loans/deposits.

In this paper, we tried to analyze some of the structural features specific to the interest rates transmission presented above, for the selected countries.

The level of financial intermediation, estimated as the weight of private debt in GDP, highlights the capacity of monetary policy decisions to influence the economic agents, through the interest rate channel, in terms of consumption, investment or savings. As we can see in Figure no. 3, in the analyzed CEE countries, in 2007-2019, the level of credit granted by the banking sector to the private sector, as share in each country GDP, was quite low compared to the level recorded by the European Union or euro area. In the case of Czech Republic and Poland, the rate shows an upward trend, rising from 38.88% (2007) to 51.51% (2019) in the first country and from 37.11% (2007) to 51.13% (2019) in the second one. Although in the first part of the analyzed period, Hungary registered an increase in the level of private sector credit (the highest level being registered in 2010, 60.67%), starting 2012, the rate decreased significantly, registering by the end of 2019 a value of 33.94%. Regarding Romania, the rate registered, for the entire period, the lowest level from all CEE analyzed countries. The highest level was recorded in 2011 (39.31%), while the lowest was recorded in 2019 (24.72%). In Romania, even if in the first part of the analyzed period the trend for this rate was an ascending one, by its end, it decreased below the initially registered value (24.72% in 2019 compared to 34.00% in 2007). In the view of the above, we can appreciate that the power with which monetary policy can influence the decisions taken by the economic agents in Czech Republic, Poland, Romania and Hungary is weak, compared to the one registered in the European Monetary Union and European Union, which conducts to a lower impact of the transmission of monetary policy decision through the interest rates in these countries.

Figure no. 3 – The evolution of private debt weight in GDP of the CEE countries (2007-2019)



The degree of competition in the banking system - the increasing in terms of competitiveness in the banking sector, calculated by the degree of concentration, can be a factor meant to strengthen the process of monetary policy transmission.

Table no. 1 - Evolution of the Herfindahl Hirschman index for the CEE banking system (2007-2019)

Year	Czech Republic	Poland	Romania	Hungary
2007	0.1100	0.0640	0.1041	0.0840
2008	0.1014	0.0562	0.0922	0.0819
2009	0.1045	0.0574	0.0857	0.0864
2010	0.1057	0.0559	0.0871	0.0828
2011	0.1028	0.0563	0.0878	0.0848
2012	0.1012	0.0568	0.0852	0.0873
2013	0.1014	0.0586	0.0821	0.0862
2014	0.0966	0.0656	0.0797	0.0792
2015	0.0994	0.0670	0.0860	0.0763
2016	0.1016	0.0659	0.0903	0.0787
2017	0.1039	0.0645	0.0915	0.0802
2018	0.1070	0.0683	0.0962	0.0801
2019	0.1082	0.0688	0.0978	0.0920

With the help of Herfindahl Hirschman index, we can calculate the concentration degree of the banking system in terms of total assets. Thus, Table no. 1 presents the values recorded by this index for the analyzed countries in 2007-2019. In the case of the Czech Republic banking system, the banking market is moderately concentrated. At the opposite side, the least concentrated banking market is registered in Poland, while for Romania and Hungary, even if the index value is closer to 0.1000, in their case we can appreciate that their banking markets are non-concentrated.

Another important index is the concentration degree of banking system, estimated as share of the top five banks assets in the banking system total assets. It is preferable for this index to have a low value. During the analyzed period, the Czech Republic registered the highest level of banking system concentration (64.7898%), followed by Romania (62.6000%) and Hungary (52.6918%). In Poland, even though, overall, the level of this index has increased compared to the beginning of the

analyzed period, it remained the lowest level recored by the four analyzed countries. A negative aspect related to this index it can be observed in Romania, which registered a substantial increase in the degree of banking system concentration, from 56.3000% in 2007 to 62.6000% in 2019.

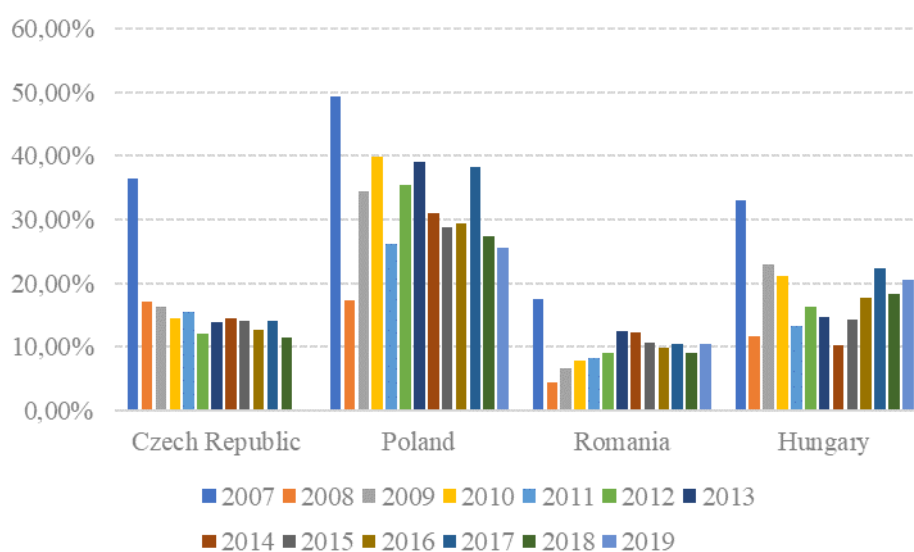
Table no. 2 – The banking system concentration degree in CEE
(2007-2019)

Year	Czech Republic	Poland	Romani	Hungary
2007	65.7100%	46.6029%	56.3000%	54.0808%
2008	62.0521%	44.2178%	54.0000%	54.4493%
2009	62.6233%	43.9275%	52.4000%	55.1829%
2010	62.6318%	43.3708%	52.7000%	54.6443%
2011	61.8983%	43.6871%	54.6000%	54.6259%
2012	61.3871%	44.3972%	54.7000%	54.0177%
2013	62.0397%	45.2372%	54.4000%	51.8939%
2014	60.8614%	48.3138%	54.2000%	49.3042%
2015	62.5069%	48.6255%	57.4000%	49.3757%
2016	63.8942%	47.7322%	59.1000%	49.8300%
2017	63.6849%	47.5108%	59.5000%	49.6396%
2018	64.4892%	49.5085%	61.6000%	49.9984%
2019	64.7898%	49.7955%	62.6000%	52.6918%

As a result of the above, we cand appreciate that in the analyzed countries, the increase of banking system concentration contributes to a reduction in the transmission power of monetary policy through the interest rate channel.

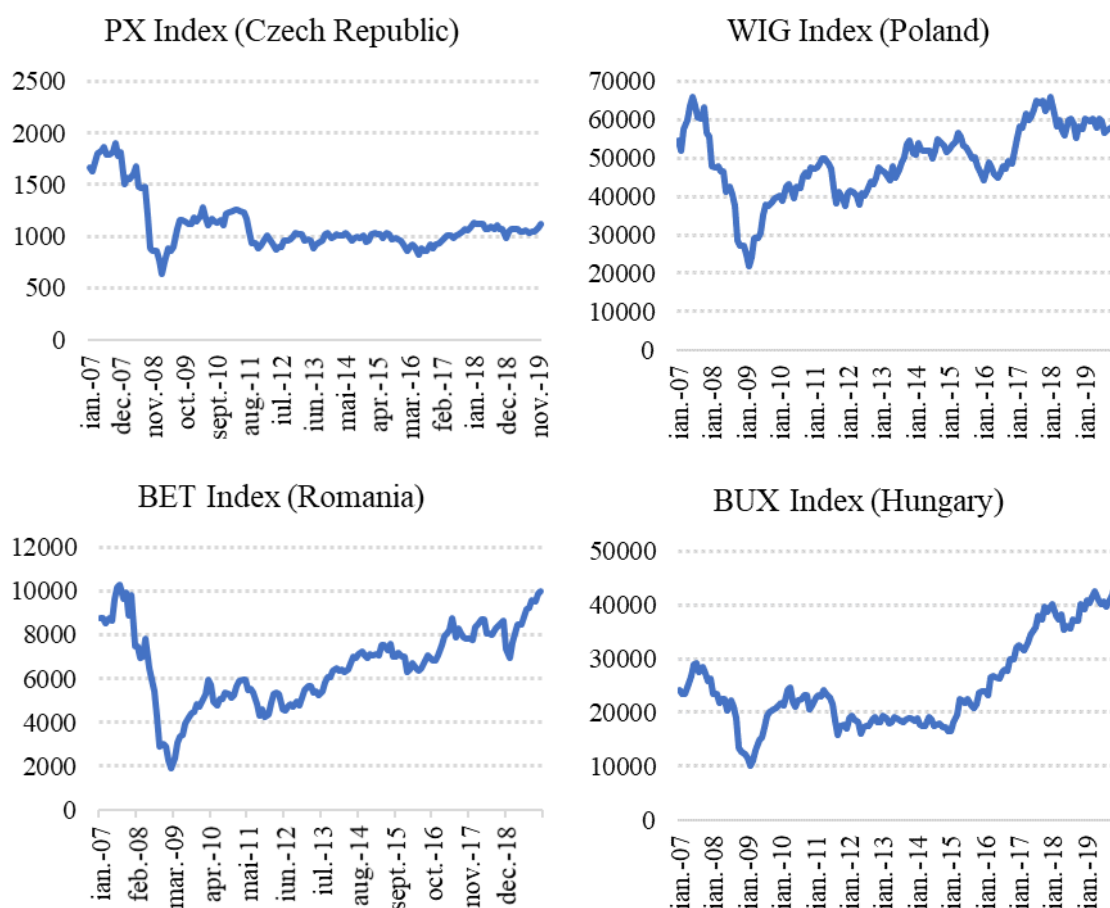
Substitution of loans/deposits – the monetary policy transmission through the interest rate channel is also influenced by the substitutability of loans/deposits. More precisely, the more likely an economic operator is to resort to other forms of financing, such as capital market financing, or an individual/economic agent is more likely to place his savings in government securities, equity securities, etc., the lower the efficiency of this transmission channel. The development of the capital market is also an important indicator that influences the transmission of monetary policy impulses in the economy. Thus, the more developed the capital market, the easier it is to transmit these impulses, due to the flexibility that these capital markets have, compared to the less developed ones.

Figure no. 4 – The evolution of market capitalization in the CEE countries
(2007-2019)



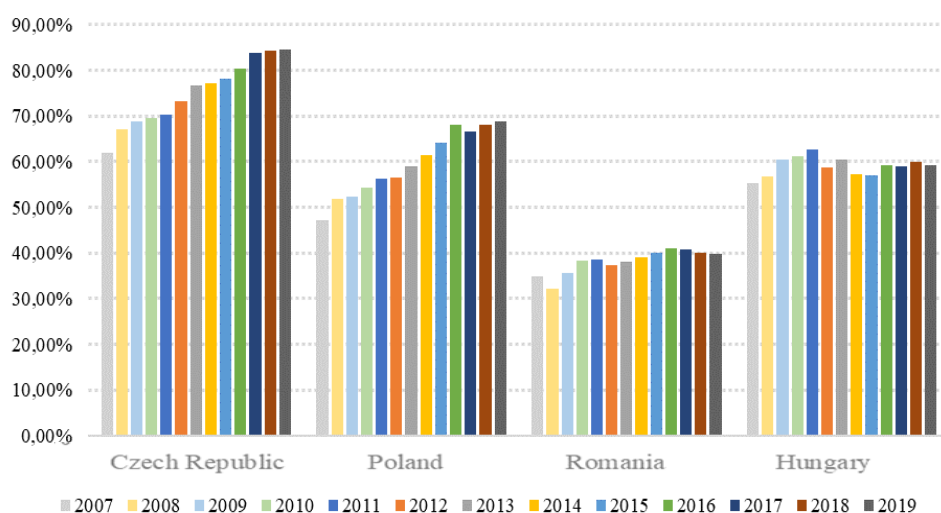
Analyzing Figure no. 4, the highest share of market capitalization was recorded in the period preceding the global financial crisis, more precisely, in 2007. After this, in 2008, the market capitalization as share of GDP in CEE countries collapsed: from 36.42% to 17.01% for the Czech Republic, from 49.32% to 17.36% for Poland, from 17.55% to 4.40% for Romania, respectively, from 33% to 11.68% for Hungary. The Czech Republic suffered the most, in which case the trend of this index continued to be a descending one, reaching 11.40% by the end of 2019. For the rest of the analyzed countries, even if the level of stock market capitalization as a share in the gross domestic product did not rise in the analyzed period to the level registered before the financial crisis of 2007-2008, the trend was, overall, an ascending one. Also, looking at Figure no. 4, we can easily see that Poland has the best market capitalization, while, in the case of Romania, the market capitalization is very weak. Figure no. 5 presents the evolution of the stock market indices related to each analyzed country. Thus, as a conclusion of the aspects presented above, we can appreciate that, in the Central and Eastern European countries analyzed, the market capitalization is weak, compared to other developed countries. However, the upward trend for three of these countries indicates that, in their case, there is a decrease in the importance of the credit channel and an increase in the relevance of the interest rate channel, due to the importance of the capital market.

Figure no. 5 – The evolution of stock market indices in the analyzed countries (2007-2019)



The level of monetization, estimated as a share of the monetary aggregate M2 in gross domestic product, decreased in the countries of Central and Eastern Europe in the analyzed period.

Figure no. 6 – The evolution of M2 as a percentage in GDP



As can be seen in Figure no. 6., Romania recorded the lowest share of the monetary aggregate M2 in gross domestic product, the index being around 40% most of the time. On the opposite side is the Czech Republic. The evolution of the monetary aggregate M2 as share in the gross domestic product had an ascending trend in the case of the Czech economy, increasing from 61.98% in 2007 to 84.55% in 2019. An upward trend of the index was also registered in Poland. It increased from 47.29% (2007) to 68.85% (2019). In the case of Hungary, we cannot talk about a substantial increase, the index increasing with only 4% throughout the considered period. A low degree of monetization makes the transmission of monetary policy weaker. As presented above, the countries of Central and Eastern Europe face a low level of monetization compared to developed countries (Western Europe). However, we believe that the ascending trend of the index analyzed above confirms the increasingly important role that financial intermediation plays, which should lead to a better transmission of monetary policy.

Table no. 3 presents the main conclusions highlighted as a result of our study.

Table no. 3 – Summary of the particularities of monetary transmission mechanism through the interest rate channel in CEE

Financial system particularity	Impact on the monetary transmission mechanism	Czech Republic	Poland	Romania	Hungary
Level of financial intermediation	a higher level indicates a high monetary transmission	increasing values, but under the euro area values	overall increasing values, but under the euro area values	decreasing values	decreasing values
Level of competition in the banking system	a higher level of competition translates into an improved transmission	increasing competitiveness	increasing competitiveness	increasing competitiveness	increasing competitiveness
Level of banking system concentration	the less concentrated the system, the better the	high level, but slightly decreasing	overall a high level, but slightly decreasing	high level and still rising	high level, but slightly decreasing

	transmission				
Level of capital market development	a high level of capital market development indicates a better transmission	low and declining level of capital market development	relatively high level of capital market development	low and rising level of capital market development	growing but relatively low level of capital market development
Monetization level	a high level indicates improved transmission	high and growing monetization	relatively low but growing monetization	increasing but low monetization	relatively low but growing monetization

3. Conclusions

Following the analysis, we believe that the best results were recorded by the Czech Republic and Poland, their indicators, even if they do not rise to the level of the European Union, their trend is a rising one. On the opposite side is Romania, where the level of financial intermediation is low, the degree of monetization is the lowest compared to the rest of the analyzed countries and the level of the capital market development is low. We can also appreciate that in the analyzed Central and East European countries there was a gradual consolidation of the economy, which makes the transmission of monetary policy easier to perform compared to the previous years.

4. Bibliography

- [1] **Anzuini, A., Levy, A.**, Monetary policy shocks in the new EU members: a VAR approach, *Applied Economics*, vol. 39, issue 9, pp. 1147-1161, 2007;
- [2] **Benecka, S., Fadejeva, L., Feldkircherm M.**, Spillovers from Euro Area monetary policy: A focus on emerging Europe. *Latvijas Banka, Working Papers*, no. 4/2018, 2018;
- [3] **Mishkin, F.S.**, The channels of monetary transmission: Lessons for monetary policy. *National Bureau of Economic Research Working Paper Series, Working Paper no. 5464*, 1996;
- [4] **Oroş, C., Romocea-Turcu, C.**, The monetary transmission mechanism in the CEECS: A structural VAR approach. *Applied Econometrics and International Development*, Vol. 9-2, pp. 73-86, 2009;
- [5] **Radu, R.**, Mecanismul de transmisie a ratelor dobânzilor. *Romanian National Bank, Caiet de studii nr. 28*, [on-line] <https://www.bnro.ro/PublicationDocuments.aspx?icid=6786>, 2010;
- [6] **Simic, V., Malesevic-Perovic, L.**, Monetary policy transmission in the Balkans in the centry: Empirical Edicence. *Journal of Economic and Social Studies*, vol. 2, no. 2, pp. 9-40, 2020;
- [7] **Spulbăr, C., Nițoi, M.**, Monetary policy transmission mechanism in Romania over the period 2001 to 2012: a BVAR analysis, *Scientific Annals of the" Alexandru Ioan Cuza" University of Iasi ~ Economic Sciences Section~*, 60(2), 387-398, 2013;
- [8] **Spulbăr, C., Birău, R.**, *Emerging Research on Monetary Policy, Banking, and Financial Markets*, IGI Global USA (formerly Idea Group Inc.), 322 pp., ISBN13: 9781522592693, ISBN10: 1522592695, EISBN13: 9781522592716, DOI: 10.4018/978-1-5225-9269-3, 2019;
- [9] **Spulbăr, C., Birău, R.**, *CFO's Guide to the Romanian Banking System*, Business Expert

Press, Expert Insights, 12 pp., ISBN: 9781949443943, <https://www.busessexpertpress.com/>, 2019;

[10] **Stann, C.M., Grigoriadis, T.**, Monetary policy transmission to Russia & Eastern Europe. University Berlin, School of Business & Economics, Discussion Papers, no. 2019/6, 2019;

[11] ***** www.bnr.ro;

[12] ***** www.cnb.cz/en/;

[13] ***** <https://data.worldbank.org/>;

[14] ***** <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html>;

[15] *****

<https://www.ecb.europa.eu/press/pr/date/2019/html/ecb.mp190912~08de50b4d2.en.html>;

[16] ***** www.investing.com;

[17] ***** www.mnb.hu/en;

[18] ***** www.nbp.pl/;

[19] ***** www.theglobaleconomy.com.