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Review Paper

MONETARY STRATEGIES DURING AND AFTER THE GREAT RECESSION: ECB VS NBS

Stefan Stojkov[1]

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Abstract: *The last few decades of the world economic structure have been characterized by a trend of global convergence in the context of the exponential interconnectedness of initially divergent financial markets. With deeper trade and financial integration, nationally oriented monetary policy is confronted with serious obstacles and limitations, having in mind higher vulnerability to the external crisis shocks. The focus of this analysis is the heterogeneous monetary responses of the ECB and the NBS to the same external shocks induced by the Great 2008 Recession. The main findings suggest that both monetary systems should rely on discretionary policy taking current macroeconomic health into account. In contrast to the monetary responses to the Global Recession, the analysis shows that the reactions to the COVID-19 crisis remained faithful to unorthodox measures in ECB's case but unrelated in NBS's case.*

Keywords: *Monetary policy, Quantitative easing, ECB, NBS, Inflation targeting.*

JEL Classification E42 · E52 · E58

✉ stefanstojkov023@hotmail.com

[1] Faculty of Economics in Subotica, University of Novi Sad, Subotica, Serbia

1. INTRODUCTION

High levels of macro-integration of financial markets provide numerous economic advantages but at the same time highlight key structural shortcomings. To achieve financial integration, European monetarists have tried to maximize the liberalization of capital flows, which leads to a reduction in transaction costs, but at the same time to a significant complication of the entire system. The very purpose of the currency was economic integration on the surface, but the main goal was to deepen political integration and encourage European harmonization (Stiglitz, 2017).

The creation of the euro fixed the exchange rates of countries and reduced foreign exchange risks, which was the original phenomenon, on the other hand, fixing exchange rates reduces the autonomy of individual central banks. This is a relevant factor primarily due to the differentiation between member states, this difference can be reflected in the economic structure and environment of the members, all the way to the specific values to which different countries attach different importance. The consequence of this is that each country can react differently to the external shock it faces. The problem arises as a consequence of the fact that now in the fixed exchange rate regime, all countries must apply the same monetary policy, regardless of whether it will help their economy or not (Bernanke & Mishkin, 1992).

One of such problems in the form of internal (structural) shock appeared in the context of the mortgage crisis in 2007 that spilled over from American soil to European soil in a record period. When we talk about the Eurozone, we are talking about a fixed exchange rate because the single currency is being introduced between member states, and the situation of the Great Recession has raised fears of declining price competitiveness that cannot be eliminated by spontaneous supply and demand relations (Gali & Monacelli, 2005). As a consequence, current account imbalances are growing and external shocks to the economy are increasing, there is the unsustainability of fixed parity and, like the domino effect, economies that are in the monetary union are falling into a currency crisis and financial collapse. The emergence of a currency crisis in one country in the regime of a fixed exchange rate leads to further spillover effects on the rest of the members, which means that we have a breakdown of the entire economic integration. To prevent such catastrophic events, various central banks have implemented heterogeneous monetary strategies to stabilize economic systems. We will look into the cases of the European Central Bank and National Bank of Serbia trying to shed more light on their strategies under the impact of external shocks.

This paper is structured as follows. After the introduction section, section two deals with the monetary strategy of the European Central Bank, with a focus on quantitative easing. Section 3 covers the monetary strategy of the National Bank of Serbia, namely inflation targeting under crisis circumstances. Section 4 is focused on how ECB and NBS tackled the COVID-19 pandemic crisis by comparing monetary regimes with the Great recession. And, finally, the last section comprises key concluding remarks of the paper.

2. THE MONETARY STRATEGY OF THE EUROPEAN CENTRAL BANK

Since the existence of the European Monetary Union (EMU) and the European Central Bank (ECB), the monetary policy it has pursued has been a policy aimed primarily at preserving price stability in the monetary union. Price stability can be defined as follows (Astin, 1999):

„*Price stability is defined as an increase in the Harmonized Indices of Consumer Prices (HICP) from year to year for the euro area below 2%.*"

As the fundamental argument for selecting price stability as the primary purpose of the European Central Bank, we may look to the German Bundesbank, which, as Germany's central bank at the time, led to the establishment of a single European bank. Germany, taught by the experience with hyperinflation in its past, had a fear of inflation and therefore highly valued price stability. This will be critical in understanding the reasons for the delay in implementing quantitative easing (as they defined this strategy) in the Eurozone. The European Central Bank's monetary policy during the global financial crisis in 2007 was typical, ie. central banks have opted for conventional monetary policy measures to reduce risk and establish liquidity (Cúrdia & Woodford, 2010). The Central Bank of Europe has sought to secure sufficient funding to reduce disruption and stabilize the banking sector.

Then, major central banks make swap arrangements to reduce foreign exchange risk. To boost the banking industry and soothe the financial market panic at the start of the crisis, the European Central Bank provided commercial banks with a loan of 95 billion euros to sustain liquidity. The maturity of liquid assets in the three to the six-month range is also refinanced. As the crisis deepened, the refinancing term was extended to one year to support both the financial and real markets through lending activity. The European Central Bank employs a fine-tuning approach to respond to market developments in a timely and adequate manner. After the escalation of the Great Recession in September 2008 due to the bankruptcy of Lehman Brothers, many financial institutions that were associated with the main culprits of the crisis are getting into solvency problems, which only worsened the situation in the economy. To hedge against risk, banks have amassed inventories and reduced lending, leading to reduced liquidity in the financial market, and the spillover effect on the real sector has led to rising unemployment and declining productivity (Kearns et al., 2018). The European Central Bank is lowering interest rates in this period and this continuous reduction will lead to a drop in the refinancing interest rate from 1.50% to negative levels as shown in Figure 1.

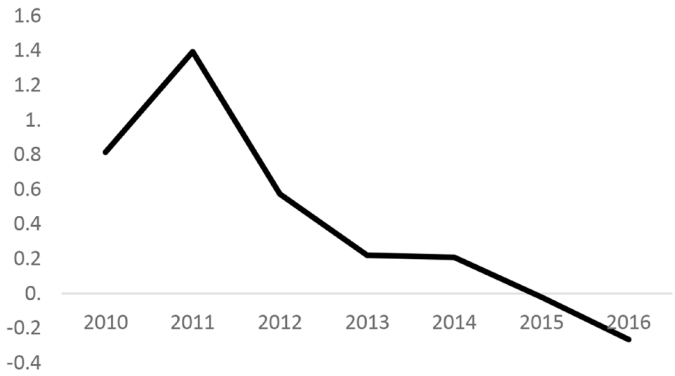

Figure 1. Refinancing interest rate of ECB
Source: Author, based on Eurostat, 2020.

Lowering interest rates alone was insufficient, therefore the European Central Bank implemented unconventional measures such as currency swap agreements, which were Eurosystem currency arrangements with the Federal Reserve that gave liquidity to foreign currencies during the crisis (Jovancai & Stakić, 2013). The European Central Bank has also broadened the list of collateral that banks can use to acquire liquidation funds, allowing banks to utilize the majority of their assets to obtain liquidation money. In 2009, the European Central Bank started expanding the money supply by purchasing safe bonds denominated in euros in the amount of 60 billion euros (Beirne et al., 2011). The primary purpose of this unconventional strategy was to reactivate and revitalize the covered bond market, which was the primary source of bank funding at the time.

2.1. The strategy of quantitative easing

To avert a recession, the conventional monetary policy requires managing the nominal interest rate and, as a result, the real interest rate. This strategy seeks to impact the rate of return on assets, which in turn influences the actions of various market participants. The choice of banks to lend money to other market participants, the decision of the state and firms to raise or decrease investments, and the decision of the public to spend will all be influenced by the interest rate.

Unconventional or non-standard monetary policy measures, as the name implies, are measures that are not commonly utilized and are not widely recognized. However, as previously stated, in times of crisis, it is critical to find a way out at all costs. In line with this, the Europeans found a route out of the crisis by looking to the Americans who used unorthodox monetary policy, notably quantitative easing (QE). They saw the measure as a central bank operation to purchase government debt instruments to increase the money supply and cut interest rates (Andrade et al., 2016). In 2001, the Central Bank of Japan became the first central bank to employ unconventional monetary policy tools. Following Japan, the Federal Reserve and the Bank of England agreed to take this step and began to pursue a quantitative easing program. The European Central Bank decides on the implementation of these approaches after a few years, more specifically in 2015, when it will begin executing the unconventional exit strategy.

There are multiple reasons why the European Central Bank was late in implementing this strategy, which has previously been widely applied in the United States and has had results. The **first** and most important reason is the resistance of the Eurozone's most powerful member and the European Union itself, Germany. As previously stated in this article, Germany has experienced two hyperinflations in the last century, with price stability serving as the primary aim of the German central bank's monetary policy.

The German Central Bank (Bundesbank) has never required unconventional monetary measures in its history since its primary purpose has always been price stability, not productivity and employment growth. Because of these factors, Germany was unable to comprehend the necessity for different monetary policies to be implemented.

Nations in southern Europe and more indebted countries, in contrast to Germany, have campaigned for the use of non-standard monetary measures since such a policy would be suited for repaying public debt owing to lower interest rates. The **second** reason for the delay in adopting quantitative easing was that this policy was completely unknown because it had never been utilized in the monetary union before, and its impact on the economies of Eurozone nations could not be identified. The example of Japan was Germany's key reason that this approach would fail. The Japanese economy was in stagflation, and an attempt was made to alleviate the situation by implementing negative nominal interest rates and purchasing government bonds. The outcomes of these efforts were negative, and the Japanese economy suffered as a result. If quantitative easing were to be implemented, Germany predicted a similar situation in the Eurozone.

The **third** reason for the delay in implementation was the 1992 Maastricht treaty, which stipulated that the central bank was independent, i.e. that it could not be used to finance Eurozone nations**.** In the year's post-U.S. crisis on European soil, there was decreased inflation, and it was substantially lower than the Eurozone's inflation objective of 2%. This constituted a risk of deflation for Eurozone countries, prompting the introduction of the Asset Purchase Program (APP) in reaction to the low inflation rate. The Extended Securities Purchase Initiative, abbreviated as APP, was a

type of quantitative easing program. The Asset Purchase Program entailed infusing cash into the financial sectors to boost liquidity (Kapetanios, 2012). The asset acquisition program was initiated on January 22, 2015, with a monthly budget of 60 billion euros (Koijen et al., 2018). This program encompassed bonds issued by Eurozone nations, as well as assets issued by different European and national institutions and agencies. The program's duration was not specified, although it was intended to be implemented until inflation exceeded the 2% mark.

In March 2016, there was a further expansion of the Assets purchase program, and allocations increased from 60 billion euros to 80 billion euros as seen in Figure 2. The European Central Bank coordinated this strategy, which was carried out by national central banks. The European Central Bank purchased 8% of the money earmarked for the Assets Purchase Program, while national banks from Eurozone member countries purchased 92%. This strategy meant that individual central banks would need to purchase government-issued nation bonds.

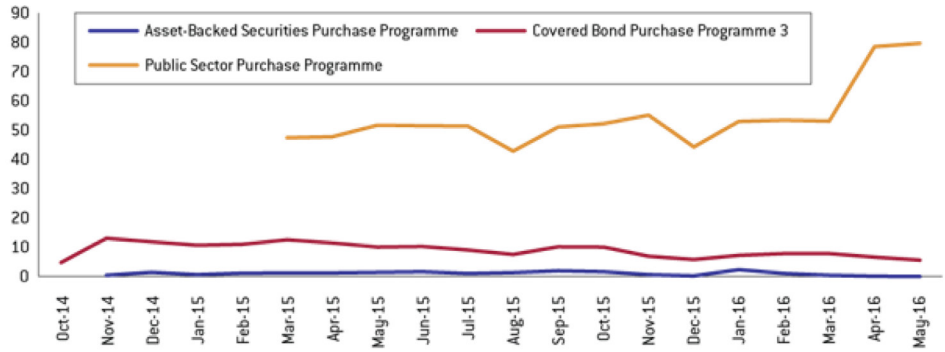

Figure 2. Monthly purchases of securities within the APP
Source: DeMertzis & Wolff, 2016.

When Europe ultimately chose to implement similar policies, a problem occurred when it came to purchasing in the sense that they did not save as much as America in previous periods. And, since it took them longer than the Americans for the implementation, they realized their mistake. This was a lesson for Europe not to hesitate in the future.

The question is whether a policy that costs so much gives the results that are expected of it? The key idea is to transfer the purchase of securities as well as bonds to the money supply. The amount of money from sold shares and bonds reaches the commercial sector, which will have more space to provide loans to the private sector. Bearing in mind that consumer lending increased by 1.6% by 2016 leads us to the conclusion that the credit conditions of the Eurozone have improved. The transmission mechanism of QE is transmitted to the fall in interest rates and in the long run, has an expansive effect on GDP growth (Beckmann et al., 2020). The purchase of long-term uncertain bonds increases their price as a result of higher demand, but there is a decline in yield as a percentage relative to the price (which has increased). Due to the fall in interest rates, there is an inverse trend in inflation, which jumped to around 5% in the Eurozone during the first rounds of QE. The combination of inflation and low-interest rates leads to a decline in competitiveness which affects the decline in demand for domestic currency and ultimately the decline in its value. (Krishnamurthy & Jorgensen, 2011).

3. THE MONETARY STRATEGY OF THE NATIONAL BANK OF SERBIA

Diametrically different economic structure in terms of homogeneity of the country compared to the predominantly heterogeneously economic system of the Eurozone allows for different monetary strategies in similar conditions. After various and numerous analyzes of the advantages and disadvantages of the monetary strategies and regimes, taking into account the environment of the domestic economy, the National Bank of Serbia decided on the inflation targeting regime. A crucial step toward this monetary strategy was taken after taking into account the autonomy of the central bank, which allows for transparency in conducting monetary policy (Šoškić, 2015). In determining the new monetary policy regime, the existence of structural changes that should happen to Serbia in the coming period and that will have effects on inflation growth was taken into account. Given the high levels of integration with the European Union and the strengthening of ties with foreign countries, an increase in the rate of transmission of inflationary shocks was expected. Taking all the above into account at the end of 2006, the monetary policy framework had in mind the implicit targeting of inflation: a) Creating an environment that reflects low and stable inflation; b) Encouraging the strengthening of the domestic currency; c) Strengthening the defense against temporary shocks from the environment.

Therefore, this framework determines that the central bank must actively participate in combating strong and unexpected shocks that will drive inflation out of the then-determined corridors of implicit targeting (Fabris, 2015). On the other hand, the action of monetary policy on exogenous shocks is determined by the nature of the shocks themselves. When the nature of the shock is mentioned, the existence on the demand side or the supply side is meant more. Shocks on the demand side from the point of view of monetary policy are more frequent and imply an identical flow of economic activity and inflation in terms of falling interest rates leading to growth in both economic activity and inflation.

The main goal of the National Bank of Serbia is to achieve price stability, unlike the European Central Bank, whose main goal in the post-crisis period was a relaxed monetary policy in order to stimulate output growth (Fabris, 2006). There are other goals such as financial stability within the strategy of the National Bank of Serbia, but they are being achieved „along the way". What should be said is that Serbia could not suddenly start applying the inflation targeting regime, and for that reason, it is introducing the procedure of the previously mentioned **implicit targeting**, which gradually introduces targets that are realistically achievable in accordance with the economic environment. Achieving implicit targeting enables the achievement of medium-term targeting results. In this period, the inflation targeting regime was implemented based on the principle of annual percentage change in the consumer price index with the consent of the Government of the Republic of Serbia on the implementation of fiscal aspects that do not jeopardize the achievement of monetary goals. Taking into account the monetary and fiscal policy from previous decades, which is relatively relaxed in terms of expansion and which is a factor in encouraging distrust in the currency, it indicates higher levels of the relationship between the exchange rate and inflation (Đukić et al., 2011). The implicit VAR methodology confirms the lack of explicit correlation between the exchange rate and inflation as presented in Figure 3. This points to the fact that the inflation targeting strategy is stable.

The regime of implicit inflation targeting encouraged the transparency of monetary policy until 2009 by managing to achieve the expected changes in interest rates from the point of view of regular business decisions of corporations. In other words, corporations believe that the interest rate will be as high as the central bank says. This is extremely important because they make their fu-

ture business decisions based on interest rate estimates. Once it has established this initial level of transparency (stabilization and confidence), the central bank can move to a full inflation targeting regime where its goal is for those same corporations to now trust it in terms of inflation.

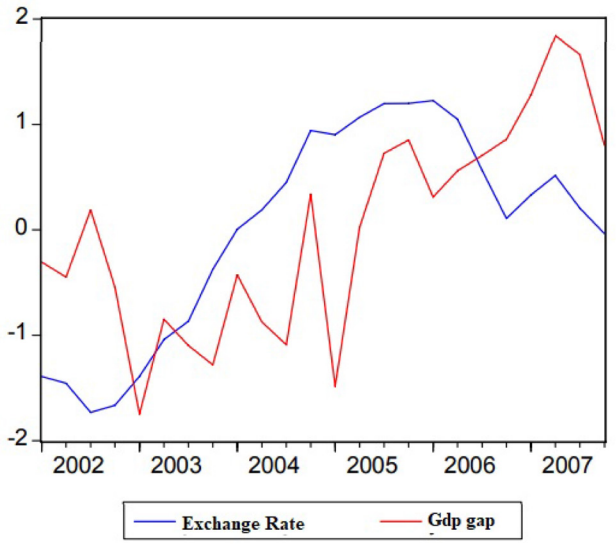

Figure 3. Exchange rate to GDP Gap correlation
Source: Dragutinović, 2008.

The inflation rate and the allowed deviation are defined for each month during the year. This means that the achievement of inflation targets can be monitored at any time, not just in one period. It also contributes to the stabilization of inflation expectations in situations where a strong shock results in a temporary deviation of inflation from the target level. It is now necessary to look at how the NBS has coped with these problems over the past decade.

With the transition to full inflation targeting after 2008, we see a rapid decline in inflation targets. Inflation targets stabilized at 4 percentage points over a longer period until 2015, when a new reduction of targeting by 1 percentage point to 3 was introduced. So, if we look at post-crisis periods, we will see that the central bank struggled with extremely high levels of inflation of almost 14%. Stabilization from 2014 onwards only shows how effectively the inflation targeting process in Serbia works, this is shown in Figure 4. For a long period, inflation has been under control without any negative repercussions on the economy. However, the government has very often used a well-conducted monetary policy in recent years to increase its spending and be more irresponsible because it knows that the central bank can bail out its deficit and high spending in terms of issuance. Such a transparent policy also creates a fall in inflation expectations and raises the credibility of the entire monetary institution. Furthermore, the standards of price convergence of the European Union, to which Serbia has been striving for years, are being met. The fact that inflation since its stabilization has been moving towards expected targets of almost ideal 2% indicates that a homogeneous monetary policy can find a balance in crises without the need for unconventional policy measures.

One of the reasons why all central banks strategically determine the medium-term horizon of inflation targeting is that there is room for short-term deviations of real from inflation targeting. These deviations are a consequence of various external factors that affect the economy over time, so monetary policy mitigates the secondary effects of these deformations. That is why we have as

our goal the central values of inflation and the corridors as areas of deviation. In other words, it is not realistically feasible at all times for real inflation to be equal to the target, especially in conditions of greater shocks to the economy. Why? First of all, due to the previously mentioned lag in the effects of monetary policy on one hand, and on the other hand, if there is a fast and rapid return of inflation to target in such conditions, there may be structural disruptions in financial markets. For these reasons, temporary deviations are allowed.

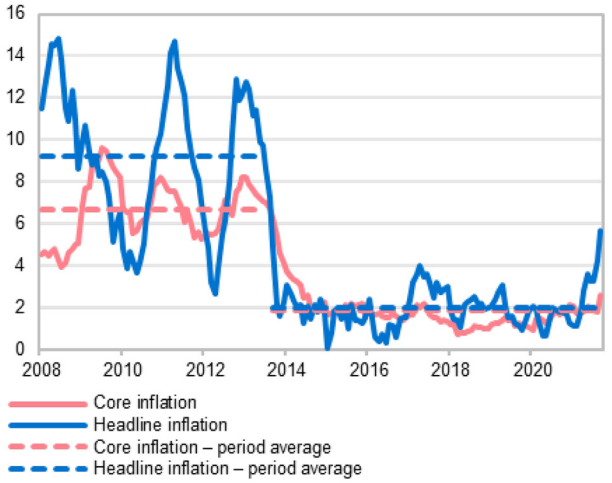

Figure 4. Core and Headline inflation targeting
Source: NBS, 2021.

Effective conduct of monetary policy and its coordination with fiscal policy has successfully reduced inflation by around 10 percentage points over a period of 10 years, from 12% in 2012 to 2.2% at the end of 2020. This reduction is a direct consequence of the tightening of monetary policy in terms of its restriction from this period, but also by reducing the prices of agricultural products, lack of domestic demand, and, of course, falling inflation expectations. The fall in short-term volatility of the dinar exchange rate also contributed to the fall in inflation. The following year (2014) saw the first measures of relaxation, the application of monetary expansion in the form of lowering the interest rate to 8%. According to some economists, the interest rate could have dropped even more here, but even in this context, the central bank is acting wisely and cautiously, bearing in mind the negativity that emerging countries have experienced in terms of volatility in unstable financial markets. During this period, everyone expected the Fed to start easing its quantitative easing measures, which was supposed to cause turbulence in the capital market. For this reason, the NBS in 2015 is launching a further monetary expansion that resulted in an interest rate of 4.5% aimed at creating a basis for lending activity in these low inflationary periods, which should further stimulate overall economic activity. A great contribution to this policy of monetary expansion of the central bank was contributed by the coordination with the government's fiscal policy, which in that period implemented various fiscal consolidation programs. Full coordination of monetary and fiscal policy resulted in simultaneous expansion and restriction in that period, respectively. The Central Bank is opting for further expansion measures in the form of reducing reserve requirements to further deepen credit expansion (deposit multiplier).

What the graph also shows is that Serbia has continued to exponentially lower its interest rate until today. In Figure 5 we see that today, the reference interest rate is at the level that is lowest since the period of 2006, i.e. before the Great Recession. What we can conclude is also that the Nation-

al Bank of Serbia exponentially lowered the interest rate to maintain the end of the inflation target in the post-crisis period. Also, it is extremely necessary to be careful about the low-interest rate because there is a possibility that the instruments in the fight against the next crisis will be exhausted. On the other hand, the fact is that the relative stability of the exchange rate was one of the determinants to which the policy of the central bank contributed to the anchoring of inflation, but in the overall financial system of Serbia. This has also contributed to the fiscal aspects of the economy in terms of the transition from fiscal deficit to fiscal surplus. This further had a reciprocal impact on the investment activities of the country. There was a significant increase in foreign direct investment initially in smaller projects and in the second round there was an increase in the diversity of investments in structure and projects. The competitiveness of the domestic economy has been significantly boosted, leading to a reduction in the current account deficit as a reflection of increased exports relative to imports.

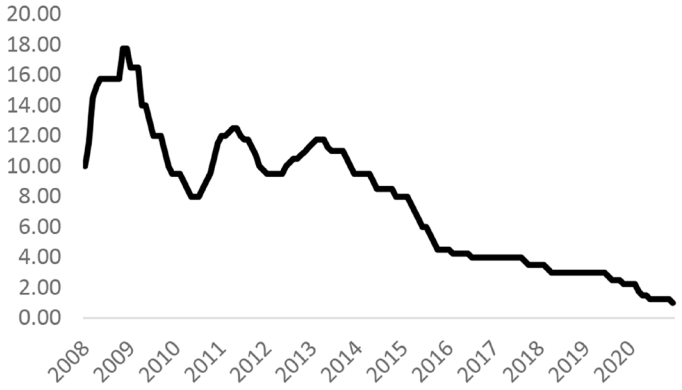

Figure 5. NBS Interest rate
Source: Author, based on NBS data.

4. COMPARATIVE COVID-19 APPROACH

Relative to the Great Recession, which had systemic effects of a structural nature, the COVID-19 crisis was caused by an external shock in the form of a pandemic. Monetary institutions (including the ECB and the NBS) had to implement rapid measures to prevent the monetary spillover of pandemic effects on the real sector. The main problem of the ECB's monetary policy is related to the heterogeneity and divergence of the monetary union members (Beker Pucar & Glavaški, 2020). However, in such specific circumstances, where every country is hit by a recession, monetary policy instruments could help everyone. The main difference concerning the Great Recession in terms of monetary strategy in the Eurozone is the fact that the crisis was greeted with a relatively restrictive monetary policy and an interest rate of 4%. On the other hand, the initial monetary policy of the ECB in the period before the COVID-19 crisis is fundamentally expansionary with an interest rate of 0%. Given that conventional instruments have been used, the ECB is moving to non-conventional aspects in the form of "Asset Purchase Programs" (APP). Unlike the previous time, learning from mistakes or due to the nature of the crisis, the ECB applies unconventional policy on time. This time, a robust expansion of the ECB's balance sheet is required, leading to the formation of the "Pandemic Emergency Purchase Program" (PEPP) (Benigno et al., 2021). This program had the idea of inherently increasing the money supply in circulation and was supposed to act as an absorber of the crisis. The package was approved for the initial 750 billion euros so that by the end of 2021, the value will jump to 1.85 trillion euros (European Parliament, 2021).

In times of crisis, market segmentation suggests that asset purchases are primarily local, with little spillovers to non-targeted areas. Hence, central banks must operate more actively in the markets where they are most required. The elasticity of the PEPP throughout time, across asset classes, and between countries allowed for such targeted acquisitions. The amount of APP during the Great Recession reached 850 billion euros, which only speaks of the chronic effects of the pandemic crisis. One of the relevant instruments in addition to the PEPP was the „Longer-term refinancing operations" (LTRO), mostly used to stabilize the banking system in terms of liquidity (Momirović et al., 2021). This package was not the focus of the ECB during the Great Recession because they were more focused on buying stocks, bonds, and public-sector purchases. As a result of the implemented arrangements, in both cases, after facing the shock, the economy moves from recession to inflation, which speaks of unconventional efficiency, but also of the unknown limit of liquidity injection by the monetary authorities**.**

On the other hand, the NBS, guided by the policy of price stability, welcomed the pandemic crisis with inflation of 2%. In terms of inflation, the NBS was much more prepared in 2020 than in 2008 when inflation was around 14%. In line with other world economies, the NBS has begun to implement an expansionary monetary policy in terms of the inherent lowering of interest rates in the initial periods of the pandemic (Savić et al., 2021). The transition from disciplined monetary policy to a regime of strict expansion is shown in the context of three sets of monetary measures: (i) liquidity control measures; (ii) direct aid measures; (iii) reactions to supply and demand shocks (Narodna Banka Srbije, 2021).

As part of **liquidity control**, the NBS is launching a repo relief initiative in cooperation with the ECB. In this way, excess liquidity is provided to the financial sector in euros in the event of any liquidity crisis. Unlike the period of the Great Recession, the NBS applied deferred payment of tax liabilities within these monetary arrangements. Deferring the payroll tax aims to maintain economic activity but also employment. Measures of **direct aid** refer to direct payments to companies, payment of aid in the amount of the minimum wage for entrepreneurs as well as subsidies to large companies. This set of measures was supposed to be the basis for dealing with the long-term effects of the crisis. **Reactions to supply and demand shocks** are the last set of measures related to the specific economic consequences that could have arisen due to the fall in demand on the one hand, but also the disruption of the supply chain on the other hand caused by the pandemic. These measures include lending to the business and agricultural sectors as well as various guarantee schemes to support the business sector (Lazarević-Moravčević & Kamenković, 2021).

5. CONCLUSION

If we draw something positive out of the increasing number of global crises that have hit us over the years, it is to encourage the economic community to work together to mitigate those crises. This is exactly the case with the monetary policy we have today. Monetary policy survived a whole set of changes from the '80s until today, not changing only the way of its functioning but also the aspects of its coverage, starting from expansive and restrictive, all the way to the unconventional aspects and macro prudence.

It is this broad coverage of monetary instruments that has enabled economies to face the same problems in different ways. The analysis has shown that ECB structural heterogeneity induced the use of unorthodox measures, unlike the conventional NBS approach. On the other hand, NBS's homogeneity allowed the exit strategy to have a conventional character within the framework of the inflation targeting. The divergence of monetary strategies indicates the lack of an optimal

model by which states can be guided. This means that central monetary institutions should pursue discretionary policy-making instead of rigid rules.

This paper aims to fill the gap in the existing literature by presenting the monetary response of the ECB and NBS to the external shocks induced primarily by the Global Recession, along with a brief comparison of the monetary reactions of both monetary authorities to the COVID-19 crisis. Further research could be focused on econometric analysis of monetary transmission mechanisms, namely with the Vector Autoregression Models (VAR) as mostly used techniques for measuring transmission channels as well as dynamic effects of monetary measures.

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