

**Mario Varović** **PRILAGODBA  
MONETARNE POLITIKE  
EUROSUSTAVA  
ZA VRIJEME KRIZA**

**ADJUSTING THE  
EUROSYSTEM'S  
MONETARY POLICY  
IN TIMES OF CRISES**

**SAŽETAK:** U članku se istražuje na koji se način monetarna politika Eurosustava prilagođavala u krizama. Obuhvaćene su sve četiri velike krize od osnivanja Europske središnje banke 1999. do danas (globalna ekonomska kriza, kriza europskog javnog duga, kriza zbog pandemije koronavirusa i kriza zbog rusko-ukrajinskog rata). Pozornost je najviše usmjerena na recentno troipolgodišnje razdoblje od početka 2020. do sredine 2023., koje obuhvaća veliku krizu zbog pandemije koronavirusa, na koju se nastavila kriza zbog rusko-ukrajinskog rata. Cilj je istraživanja utvrditi u kojoj je mjeri Eurosustav koristio standardne instrumente, a zbog čega je uvodio nove nestandardne mjere monetarne politike. Od nestandardnih mjera monetarne politike Eurosustava osobito je istaknuta kupnja vrijednosnih papira. Napravljena je analiza odabranih bilančnih pozicija iz konsolidirane bilance Eurosustava, koje odražavaju primjenu najvažnijih instrumenata i mjera monetarne politike Eurosustava. Metodama sinteze i komparacije rezultati te analize uspoređeni su i povezani s kretanjem najvažnijih monetarnih makroekonomskih varijabli, a to su referentna

**ABSTRACT:** The paper studies the ways in which the monetary policy of the Eurosystem adapted during crises. It comprises four great crises that have taken place since the European Central Bank was founded in 1999 (the global economic crisis, the European sovereign debt crisis, the COVID-19 pandemic crisis, and the Russo-Ukrainian War crisis). Most consideration is given to the recent three-and-a-half-year period from the beginning of 2020 to mid-2023, encompassing the great COVID-19 pandemic crisis, followed by the Russo-Ukrainian War crisis. The research objective was to determine to what extent the Eurosystem used the standard instruments, and what led it to introduce new non-standard monetary policy measures. From the non-standard monetary policy measures by the Eurosystem, especially highlighted is the purchase of securities. An analysis of the balance sheet positions from the consolidated balance sheet of the Eurosystem was made, which reflects the application of the most significant instruments and monetary policy measures of the Eurosystem. We used synthesis and comparison methods to compare and relate the analysis results with the most significant trends of the monetary



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kamatna stopa Europske središnje banke, najširi monetarni agregat i stopa inflacije europodručja.

**KLJUČNE RIJEČI:** monetarna politika, nestandardne mjere, Eurosustav, kriza

## UVOD

Temeljem osnivačkih ugovora Europske unije, 1. siječnja 1999. osnovana je Europska središnja banka (ESB), odgovorna za kreiranje zajedničke monetarne politike u europodručju, koje danas broji dvadeset država članica<sup>1</sup> u kojima je uveden euro. Središnje banke ovih država zajedno s ESB-om čine Eurosustav, koji čini okosnicu Ekonomske i monetarne unije (engl. Economic and Monetary Union; EMU), kojom je dostignut visok stupanj koordinacije monetarnih, fiskalnih i ekonomskih politika država članica europodručja. Temeljni je cilj Eurosustava stabilnost cijena, čime se putem monetarne stabilnosti osigurava makroekonomska stabilnost, usko vezana za političku stabilnost, a stabilnost je osobito teško održati za vrijeme krize.

U ovome članku<sup>2</sup> razmatra se prilagodba monetarne politike Eurosustava za vrijeme kriza. Od osnutka Eurosustava do danas, dakle u dvadesetčetverogodišnjem razdoblju (1999. – 2023.), gospodarstvo europodručja pogodile su četiri velike krize, a to su:

1. razdoblje globalne ekonomske krize (2008. – 2009.)
2. razdoblje krize europskog javnog duga (2010. – 2013.)
3. razdoblje krize zbog pandemije koronavirusa (2020. – 2022.)
4. razdoblje krize zbog rusko-ukrajinskog rata (2022. – danas).

macroeconomic variables, which are the European Central Bank reference interest rate, the broadest monetary aggregate and the inflation rate of the euro area.

**KEY WORDS:** monetary policy, non-standard measures, Eurosystem, crisis

## INTRODUCTION

On the 1st of January 1999, the European Central Bank (ECB) was founded on the basis of the European Union founding agreements. It is responsible for the creation of the common monetary policy in the euro area, counting twenty member-states<sup>1</sup> in which the euro was introduced. Together with the ECB the central banks of these member-states make up the Eurosystem as the backbone of the Economic and Monetary Union (EMU), which has achieved a high level of coordination of monetary, fiscal and economic policies of the member-states in the euro area. The fundamental objective of the Eurosystem is the stability of prices, which via monetary stability ensures the macroeconomic stability, closely tied to the political stability, and stability is especially difficult to maintain during crises.

This paper<sup>2</sup> considers the adjustment of the Eurosystem's monetary policy during crises. Since the foundation of the Eurosystem, i.e., in the twenty-year period (1999 - 2023) the economy of the euro area has been stricken by four great crises, as follows:

1. the period of the global economic crisis (2008 – 2009)
2. the period of the European sovereign debt crisis (2010 – 2013)
3. the period of the COVID-19 pandemic crisis (2020 – 2022)
4. the period of the Russo-Ukrainian War crisis (2022 – today).

Prvih desetak godina, sve do pojave globalne ekonomske krize, Eurosustav je upotrebljavao isključivo set tradicionalnih ili standardnih instrumenata monetarne politike, koji obuhvaćaju moderne, tržišno bazirane mjere, od kojih su najznačajnije operacije na otvorenom tržištu (engl. *open market operations*), putem kojih središnje banke članice Eurosustava najprije na aukcijama otkupljuju vrijednosne papire od banaka, čime povećavaju likvidnost bankarskog sektora, a onda ih ponovno prodaju bankama, čime povlače novac. Riječ je o *repo* poslovima (engl. *repurchase*). Eurosustav koristi dvije vrste repo operacija, a to su glavne operacije refinanciranja (engl. *main refinancing operations*; MRO) s dospeljećem od tjedan dana i operacije dugoročnijeg refinanciranja (engl. *longer-term refinancing operations*; LTRO) s nešto duljim dospeljećem, od tri mjeseca. Od važnijih standardnih instrumenata treba još navesti mogućnost jednodnevnog kreditiranja poslovne banke uz kolateral (engl. *marginal lending facility*) i mogućnost polaganja depozita kod središnje banke (engl. *deposit facility*). Treba napomenuti da je osnovna pretpostavka učinkovitog korištenja standardnih monetarnih instrumenata uredno funkcioniranje kreditno-kamatnog transmisijskog kanala (European central bank, 2011).

U razdoblju globalne ekonomske krize (2008. – 2009.) došlo je do velikog poremećaja na europskom međubankarskom tržištu, što je za posljedicu imalo povećanje kamatnih stopa i smanjenje likvidnosti. Eurosustav je reagirao nudeći neograničenu prekonoćnu likvidnost i provodeći dodatna refinanciranja s produljenim rokom dospeljeca. Ipak, s obzirom na to da je bila smanjena učinkovitost kreditno-kamatnih transmisijskih kanala, kao oblik prilagodbe monetarne politike ESB-a izvanrednim kriznim uvjetima, uvedena je kupnja vrijednosnih papira kao nova nestandardna mjera monetarne politike u cilju podrške bankarskoj likvidnosti i stabiliziranju financijskog sustava. Kriza europskog javnog duga (2010. – 2013.) nastavila se na prethodnu globalnu ekonomsku krizu, koja je ostavila duboke

In the first ten years, until the onset of the global economic crisis, the Eurosystem exclusively employed a set of traditional or standard monetary policy instruments, comprising modern, market-based measures, the most significant of which are the open market operations. Through them the central banks, members of the Eurosystem, first purchased securities from banks in auctions, increasing the liquidity of the banking sector, and then resold them to banks, withdrawing money. This is called a *repo* transaction (repurchase). The Eurosystem uses two types of repo operations, the main refinancing operations (MRO) with a maturity of one week, and longer-term refinancing operations (LTRO), with a somewhat longer maturity, of three months. Of the more significant standard instruments it is noteworthy to mention the one-day marginal lending facility and the deposit facility with the central bank. It is important to note that the basic precondition of using the standard monetary instruments is the proper functioning of the monetary transmission mechanism (European Central Bank, 2011).

During the global economic crisis (2008 – 2009) the European interbank market was greatly disrupted, which led to an increase in interest rates and a decline in liquidity. The Eurosystem reacted by offering an unlimited overnight liquidity and implementing additional refinancing with longer maturity. Nevertheless, due to the diminished effectiveness of the lending-interest transmission channels, as a form of adjustment of the ECB monetary policy to emergency crisis conditions, the purchase of securities was introduced as a new non-standard monetary policy measure aimed at facilitating bank liquidity and financial stability. The European sovereign debt crisis (2010 – 2013) followed the previous global financial crisis, that gravely impacted the European economy. Its onset was the Greek debt crisis in May of 2010 caused by issues of refinancing government bonds, and it spread to other countries, mainly in the south of the euro area (Portugal, Spain, Cyprus, Italy and Ireland). The main cause of the crisis was the fall

posljedice na europsko gospodarstvo. Započela je krizom javnog duga u Grčkoj u svibnju 2010. zbog problema u refinanciranju državnih obveznica, a proširila se i na druge zemlje, uglavnom na jugu europodručja (Portugal, Španjolska, Cipar, Italija i Irska). Glavni uzrok krize bio je pad kapitalnih priljeva koje te države nisu više mogle kompenzirati devalvacijom nacionalne valute, kao što su to činile prije uvođenja eura. Eurosustav je započeo s programom interventne kupnje na sekundarnom tržištu javnog i privatnog duga, a dodatno je nastavio prilagodbom monetarne politike u smislu uvođenja novih nestandardnih mjera, koje će biti detaljno pojašnjene u nastavku članka.

Predmet istraživanja u ovome članku jest monetarna politika Eurosustava u posljednje tri i pol godine (01. 01. 2020. – 30. 06. 2023.). Cilj je istraživanja utvrditi u kojoj su mjeri i na koji način korišteni standardni instrumenti i/ili nestandardne mjere monetarne politike Eurosustava za vrijeme trajanja posljednje dvije krize, a to su kriza zbog pandemije koronavirusa (2020. – 2022.) i kriza zbog rusko-ukrajinskog rata (2022. – danas). Provjerit će se teza da se monetarna politika Eurosustava na poseban način prilagođava za vrijeme kriza.

## PREGLED DOSADAŠNJIH ISTRAŽIVANJA

U doktorskoj disertaciji „Institucionalno uređenje europskog monetarnog poretka u interakciji s međunarodnim odnosima unutar Europske unije“ (Varović, 2023) autor je istraživao monetarnu politiku Eurosustava u razdoblju 2005. – 2020. i pri tome analizirao uvođenje novih nestandardnih mjera monetarne politike za vrijeme kriza. Prva i najvažnija nestandardna mjera obuhvaća različite programe kupnje vrijednosnih papira. Prvi program kupnje pokrivenih obveznica od banaka pokrenut je za vrijeme globalne ekonomske krize u srpnju 2009. (engl. *Covered Bond Purchase Programme*; CBPP), a uslijedila su još dva nastavka (CBPP2 u 2011. i CBPP3 u 2014. godini). Za vrijeme krize europskog javnog duga u svibnju 2010. pokrenut je

in capital flows that these states could not continue to compensate by devaluing the national currency, as they did prior to introducing the euro. The Eurosystem started a programme of interventional purchase of public and private debt on the secondary market, and additionally continued to adjust the monetary policy by introducing new non-standard measures, which will be explained further in continuation of this paper.

The subject of this paper is the monetary policy of the Eurosystem in the last three and a half years (01/01/2020 – 30/06/2023). The research objective was to determine the extent to which and the method by which standard instruments and/or non-standard measures of the Eurosystem's monetary policy were used during the last two crisis: the COVID-19 pandemic crisis (2020 – 2022) and the Russo-Ukrainian War crisis (2022 – today). The paper provides an examination of the thesis that the Eurosystem's monetary policy has special methods of adjustment in times of crises.

## OVERVIEW OF PREVIOUS RESEARCH

In the doctoral dissertation "Institutional Regulation of the European Monetary Framework in Interaction with International Relations within the European Union" (Varović, 2023), the author studies the Eurosystem's monetary policy in the 2005 – 2020 period, analysing the introduction of new non-standard monetary policy measures during crises. The first and foremost non-standard measure entails various programmes of purchasing securities. The first programme of purchasing covered bonds from banks was initiated during the global economic crisis in July of 2009 (covered bond purchase programme; CBPP), and it was followed by two more (CBPP2 in 2011 and CBPP3 in 2014). During the European sovereign debt crisis, the SMP (securities markets programme) was introduced in May 2010, aimed at stabilising the government bonds market in order to facilitate refinancing of sovereign debt of individual

program SMP (engl. *Securities Markets Programme*), s ciljem stabilizacije tržišta državnih obveznica da bi se olakšalo refinanciranje javnog duga pojedinim državama članicama na periferiji europodručja. Po završetku akutnog dijela krize europskog javnog duga, kada je trebalo potaknuti oporavak europskog gospodarstva, uvedeni su još sljedeći programi kupnje vrijednosnih papira, pod zajedničkim nazivom *Asset Purchase Programmes* (APP): program kupnje vrijednosnih papira osiguranih imovinom u 2014. (engl. *Asset-Backed Securities Purchase Programme*; ABSPP), program kupnje državnih obveznica pokrenut u 2015., koji je s vremenom imao najveći relativan udio u portfelju otkupljenih vrijednosnih papira Eurosustava (engl. *Public Sector Purchase Programme*; PSPP), i program kupnje korporativnih obveznica, uveden 2016. (engl. *Corporate Sector Purchase Programme*; CSPP).

Europska središnja banka u svojim publikacijama (engl. *working paper*) i na svojim internetskim stranicama opisuje i analizira primjenu vlastitih monetarnih mjera (European central bank, 2013). Uz kupnju vrijednosnih papira uvedene su još tri nestandardne mjere monetarne politike. Na vrhuncu krize europskog javnog duga, u srpnju 2012., u želji da svim sredstvima zaštiti opstanak eura, guverner Mario Draghi uveo je izravne monetarne transakcije (engl. *Outright monetary transactions*; OMT), čime se omogućava da ESB na sekundarnom tržištu može provesti izravnu kupnju obveznica pojedinih država članica europodručja koje imaju problema s javnim dugom, ali nakon što vlade tih država pristanu na provođenje određenih ekonomskih stabilizacijskih mjera. Ta mjera nikada nije zaživjela u praksi, ali je imala snažan psihološki učinak na tržišna očekivanja. Treća nestandardna mjera, uvedena 2013., na samom kraju krize europskog javnog duga, predstavlja napredak ESB-a u odnosima s javnošću. Upravno vijeće ESB-a putem javnih objava smjernica buduće monetarne politike (engl. *Forward guidance*) na transparentan je način počelo najavljivati svoje buduće namjere da bi tržišni akteri mogli pravovremeno prilagoditi očekivanja.

member states at the periphery of the euro area. Upon the completion of the acute part of the European sovereign debt crisis, when the European economic recovery should have been initiated, the following programmes of purchasing securities were introduced, under the common name of Asset Purchase Programmes (APP): the asset-backed securities purchase programme, ABSPP in 2014; the public sector purchase programme, PSPP in 2015, which is a programme of government bond purchasing that in time had the largest relative share in the Eurosystem's portfolio of purchased securities, and the 2016 corporate sector purchase programme, CSPP.

In its writing papers and on its internet pages, the European Central Bank describes and analyses the implementation of its own monetary measures (European Central Bank, 2013). Along with the purchase of securities, three additional non-standard monetary policy measures were introduced. At the height of the European sovereign debt crisis, in June 2012, aimed at protecting the euro by all means, the President of the ECB, Mario Draghi introduced outright monetary transactions (OMT), facilitating the ECB the implementation of direct secondary-market purchasing of government bonds of individual member states of the euro area that are struggling with public debt, but only after their governments accepted to implement specific measures for economic stability. This measure has never achieved its purpose in practice, but it has had a strong psychological effect on market expectations. The third non-standard measure was introduced in 2013, at the very end of the European sovereign debt crisis, and it represents a step forward in the ECB public relations. The Governing Council of the ECB, in its forward guidance started announcing its future intentions in a transparent way so that market actors could adapt their expectations in time. This instrument is based on human psychology and can strongly affect the reduction of inflation expectations, but the fundamental assumption is to maintain trustworthiness and independence of the central

Taj instrument temelji se na ljudskoj psihologiji i može snažno djelovati na smanjenje inflacijskih očekivanja, ali je osnovna pretpostavka zadržati vjerodostojnost i neovisnost središnje banke, koja mora biti potpuno posvećena svojem temeljnom cilju stabilnih cijena. Četvrta nestandardna mjera Eurosustava, uvedena 2014., operacije su ciljanog dugoročnog refinanciranja (engl. *Targeted longer-term refinancing operations*; TLTRO), koje su vrlo slične standardnom kreditnom instrumentu LTRO, ali je rok dospijeca produljen s tri mjeseca na dvije godine. Druga tranša pokrenuta je 2016. (TLTRO II), a treća i posljednja (TLTRO III) pokrenuta je u ožujku 2019. Rok dospijeca naknadno je produljen na tri odnosno četiri godine. Specifičnost je tog instrumenta da je zamišljen da ciljano stimulira kreditiranje bankarskog sektora prema realnom sektoru da bi umanjio negativan utjecaj krize na likvidnost europskog gospodarstva.

## METODOLOGIJA ISTRAŽIVANJA

Obuhvaćena je strana i domaća literatura kao sekundarni izvor podataka. Istraženi su instrumenti i mjere monetarne politike Eurosustava i načini njihovog korištenja. Prikupljeni su računovodstveni podaci iz konsolidirane bilance Eurosustava<sup>3</sup> u razdoblju 01. 01. 2020. – 30. 06. 2023. sa stanjem na kraju kvartala (ukupno 14 kvartala). Napravljena je detaljna analiza kretanja aktive/pasive Eurosustava i relativnog udjela u aktivni za dvije odabrane bilančne pozicije, a to su bilančna pozicija 5. „Kreditiranje kreditnih institucija europodručja u vezi operacija monetarne politike u eurima“, u kojoj su iskazani prije svega standardni kreditni instrumenti, i bilančna pozicija 7.1. „Vrijednosni papiri koji se drže u svrhu monetarne politike“, kojom je iskazana naj snažnija nestandardna mjera monetarne politike, a to je kupnja vrijednosnih papira. Za prva tri kvartala u svakoj godini korišteni su podaci tjednih financijskih izvještaja Eurosustava (engl. *weekly financial statements*<sup>4</sup>), koji se objavljuju na internetskim stranicama ESB-a. Za posljednji kvartal u svakoj godini korišteni su podaci iz godišnjih

bank that needs to be completely dedicated to its primary goal of price stability. The fourth non-standard measure of the Eurosystem, introduced in 2014, comprises targeted longer-term refinancing operations (TLTRO), which are very similar to the standard lending instrument LTRO, but whose maturity is two years, as opposed to three months. The second tranche (TLTRO II) was initiated in 2016, and the third and last (TLTRO III) in March 2019. The maturity was subsequently prolonged to three and then four years. The specific characteristic of the instrument is that it was conceptualised to target the stimulation of banking sector lending to the real sector in order to reduce the negative impact of the crisis on the liquidity of the European economy.

## RESEARCH METHODOLOGY

Foreign and domestic literature was used as secondary sources of data. We studied the Eurosystem's monetary policy instruments and measures and methods of their usage. Accounting data were collected from the consolidated balance sheet of the Eurosystem<sup>3</sup> in the period from 01/01/2020 to 30/06/2023 with balance sheet positions at the end of the quarter (14 quarters in total). A detailed analysis was made of Eurosystem's assets/liabilities movements and the relative share in assets for two selected balance sheet positions, which are the balance position 5 – "Lending to euro area credit institutions related to monetary policy operations denominated in euro", which primarily indicates standard lending instruments, and the balance position 7.1 – "Securities held for monetary policy purposes", which indicates the strongest non-standard monetary policy measure, the purchase of securities. For the first three quarters of each year, we used data of the Eurosystem's weekly financial statements,<sup>4</sup> published on the ECB's web pages. For the last quarter of each year, we used data from the annual consolidated balance sheets of the Eurosystem, published in annual financial statements of the ECB, available also on

konsolidiranih bilanci Eurosustava, koje se objavljuju u godišnjim financijskim izvještajima ESB-a, a dostupne su i na internetskim stranicama Europske središnje banke.<sup>5</sup> Financijski učinak primjene tih instrumenata i mjera monetarne politike kvantificiran je, grafički prikazan i pojašnjen.

Rezultati analize računovodstvenih podataka stavljeni su u odnos s odabranim makroekonomskim varijablama, koje su najuže povezane s provođenjem monetarne politike Eurosustava, a to su: ključna kamatna stopa Europske središnje banke za glavne operacije refinanciranja (MRO), kretanje najšireg monetarnog agregata M3 (ukupna likvidna sredstva europodručja) i stopa inflacije u europodručju mjerena harmoniziranim indeksom potrošačkih cijena (HICP). Metodama analize, sinteze i komparacije uspoređeni su i povezani rezultati analize bilančnih pozicija s kretanjem makroekonomskih varijabli, na temelju čega su izvedena zaključna razmatranja.

## **ANALIZA MONETARNE POLITIKE EUROSUSTAVA U RAZDOBLJU 01. 01. 2020. – 30. 06. 2023.**

U Tablici 1 nalaze se rezultati analize računovodstvenih podataka iz konsolidirane bilance Eurosustava, na temelju kojih je vidljivo kretanje ukupne aktive i kretanje odabranih dviju bilančnih pozicija (dani krediti i kupljeni vrijednosni papiri u svrhu monetarne politike) u promatranom razdoblju 01. 01. 2020. – 30. 06. 2023. po kvartalima. Izračunat je postotni relativni udio pojedine bilančne pozicije u ukupnoj aktivi. Dodatno je izračunata kvartalna promjena aktive i kvartalna promjena pojedine bilančne pozicije u odnosu na prethodni kvartal.

Na Grafikonu 1 grafički je prikazano kretanje ukupne aktive, danih kredita i kupljenih vrijednosnih papira Eurosustava u svrhu monetarne politike u promatranom razdoblju.

Tamnom krivuljom s rombovima prikazana je visina aktive u milijunima eura. Početkom 2020.

the web pages of the European Central Bank.<sup>5</sup> The financial effect of implementing these monetary policy instruments and measures was quantified, graphically shown and interpreted.

The accounting data analysis results were put in relation to the selected macroeconomic variables most closely related to the implementation of the Eurosystem's monetary policy, which are: the key interest rate of the European Central Bank for the main refinancing operations (MRO), the movement of the broadest monetary aggregate M3 (total liquid resources of the euro area) and the inflation rate in the euro area measured by the harmonised index of consumer prices (HICP). By using methods of analysis, synthesis and comparison, we compared and related the results of the balance sheet positions analysis with the movements of macroeconomic variables, based on which we made conclusions.

## **ANALYSIS OF THE EUROSUSTAV'S MONETARY POLICY IN THE PERIOD FROM 01/01/2020 TO 30/06/2023**

Table 1 shows the results of analysis of accounting data from the consolidated balance sheet of the Eurosystem, based on which the movements of total assets and the movements of the two selected balance sheet positions (approved loans and purchased securities for monetary policy purposes) are visible, according to quarters of the observed period from 01/01/2020 to 30/06/2023. The percentage of the relative share of each balance sheet position in total assets was calculated. Additionally, the quarterly change in assets and the quarterly change in individual balance position in relation to the previous quarter were calculated.

Figure 1 graphically shows the movements of total assets, approved loans and purchased securities of the Eurosystem for monetary policy purposes in the observed period.

The dark line with rhombuses shows the amount of assets in million euro. In the beginning of 2020,

aktiva Eurosustava iznosila je 4.671.425 milijuna eura. Najveći porast aktive u odnosu na prethodni kvartal zabilježen je u II. kvartalu 2020. (23,18%) zbog snažne reakcije monetarne politike na krizu

assets of the Eurosystem were 4,671,425 million euro. The highest increase in assets in relation to the previous quarter was recorded in the second quarter of 2020 (23.18%) due to a strong reaction of

**TABLICA 1. ANALIZA ODABRANIH POZICIJA KONSOLIDIRANE BILANCE EUROSUSTAVA ZA RAZDOBLJE 01. 01. 2020. – 30. 06. 2023. PO KVARTALIMA**

**TABLE 1. ANALYSIS OF THE SELECTED POSITIONS IN THE CONSOLIDATED BALANCE SHEETS OF THE EUROSUSTAV FOR THE PERIOD FROM 01/01/2020 TO 30/06/2023 PER QUARTERS**

STANJE NA KRAJU KVARTALA END-OF-QUARTER BALANCE	AKTIVA U MIL. EUR ASSETS IN M EUR	DANI KREDITI U MIL. EUR APPROVED LOANS IN M EUR	RELATIVNI UDIO DANIH KREDITA U AKTIVI (%) RELATIVE SHARE OF APPROVED LOANS IN ASSETS (%)	KUPLJENI VRIJEDNOSNI PAPIRI U MIL. EUR PURCHASED SECURITIES IN M EUR	RELATIVNI UDIO V. P. U AKTIVI (%) RELATIVE SHARE OF P. S. IN ASSETS (%)	KVARTALNA PROMJENA AKTIVE (%) QUARTERLY CHANGE IN ASSETS (%)	KVARTALNA PROMJENA PROMJENA KREDITA (%) QUARTERLY CHANGE IN LOANS (%)	KVARTALNA PROMJENA V. P. (%) QUARTERLY CHANGE IN P. S. (%)
01.01.2020.	4.671.425	624.232	13,36%	2.632.025	56,34%			
31.03.2020.	5.062.687	826.075	16,32%	2.721.018	53,75%	8,38%	32,33%	3,38%
30.06.2020.	6.236.143	1.590.116	25,50%	3.162.462	50,71%	23,18%	92,49%	16,22%
30.09.2020.	6.534.815	1.596.905	24,44%	3.442.496	52,68%	4,79%	0,43%	8,85%
31.12.2020.	6.977.658	1.793.194	25,70%	3.694.496	52,95%	6,78%	12,29%	7,32%
31.03.2021.	7.505.021	2.107.633	28,08%	3.930.425	52,37%	7,56%	17,54%	6,39%
30.06.2021.	7.877.127	2.217.338	28,15%	4.214.475	53,50%	4,96%	5,21%	7,23%
30.09.2021.	8.273.207	2.211.343	26,73%	4.478.650	54,13%	5,03%	-0,27%	6,27%
31.12.2021.	8.564.361	2.201.882	25,71%	4.713.403	55,04%	3,52%	-0,43%	5,24%
31.03.2022.	8.710.615	2.201.250	25,27%	4.883.686	56,07%	1,71%	-0,03%	3,61%
30.06.2022.	8.835.987	2.199.535	24,89%	4.963.708	56,18%	1,44%	-0,08%	1,64%
30.09.2022.	8.810.111	2.120.801	24,07%	4.943.021	56,11%	-0,29%	-3,58%	-0,42%
31.12.2022.	7.951.039	1.324.347	16,66%	4.937.179	62,09%	-9,75%	-37,55%	-0,12%
31.03.2023.	7.729.612	1.102.385	14,26%	4.909.661	63,52%	-2,78%	-16,76%	-0,56%
30.06.2023.	7.219.695	616.694	8,54%	4.858.893	67,30%	-6,60%	-44,06%	-1,03%

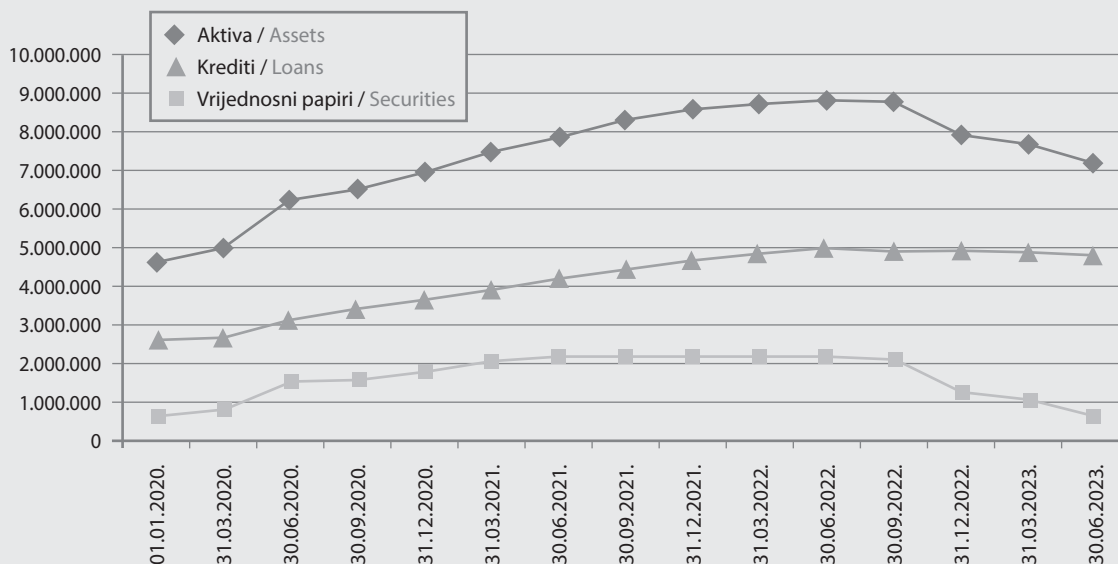
Izvor: izrada autora prema podacima s internetske stranice Europske središnje banke: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html> (pristupljeno 01. 09. 2023.)

Source: authors, according to data from European Central Bank's web pages: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html> (retrieved 01/09/2023)



**GRAFIKON 1. GRAFIČKI PRIKAZ KRETANJA UKUPNE AKTIVE, KREDITA I VRIJEDNOSNIH PAPIRA U KONSOLIDIRANOJ BILANCI EUROSUSTAVA ZA RAZDOBLJE 01. 01. 2020. – 30. 06. 2023. PO KVARTALIMA, U MIL. EURA**

**FIGURE 1. GRAPHICAL OVERVIEW OF THE QUARTERLY MOVEMENTS OF TOTAL ASSETS, LOANS AND SECURITIES IN THE CONSOLIDATED BALANCE SHEET OF THE EUROSUSTAV IN THE PERIOD FROM 01/01/2020 TO 30/06/2023, IN MILLION EURO**



Izvor: izrada autora prema podacima s internetske stranice Europske središnje banke: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html> (pristupljeno 01. 09. 2023.)  
 Source: authors, according to data from European Central Bank's web page: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html> (retrieved 01/09/2023)

pandemije koronavirusa, koja je započela u ožujku 2020. (European central bank, 2022). Aktiva je blažim tempom nastavila rasti sve do sredine 2022. Od III. kvartala 2022. promijenjen je trend i aktiva se polako počela smanjivati. Najveći postotak smanjenja aktive zabilježen je u posljednjem kvartalu 2022. (-9,75%). Aktiva je sredinom 2023. iznosila 7.219.695 mil. eura (-6,60% u odnosu na prethodni kvartal). Aktiva odnosno pasiva Eurosustava u razdoblju 01. 01.2020. – 30. 06. 2023. ukupno je porasla za 2.548.270 milijuna eura, odnosno za čak 54,55%.

Svijetlom krivuljom s kvadratima prikazano je kretanje bilančne pozicije 5, na kojoj se u

the monetary policy on the COVID-19 pandemic, which started in March 2020 (European Central Bank, 2022). Assets continued to grow more moderately until mid-2022. From the third quarter of 2022 the trend changed, and assets began to decrease slowly. The highest percentage of asset decrease was recorded in the last quarter of 2022 (-9.75%). In mid-2023 assets were 7,219,695 million euro (-6.60% in relation to the previous quarter). Assets, i.e., liabilities of the Eurosystem in the period from 01/01/2020 to 30/06/2023 grew by 2,548,270 million euros in total, i.e., by 54.55% in total.

The light line with squares shows the movement of the balance sheet position 5, which in the

konsolidiranoj bilanci Eurosustava iskazuju krediti odobreni kreditnim institucijama povezani s operacijama monetarne politike. Dani krediti u pravilu se smatraju standardnim instrumentima monetarne politike ako su kratkoročni. Na početku promatranog razdoblja stanje kredita iznosi 624.232 milijuna eura, s udjelom u aktivi od 13,36%. Najveći kvartalni porast kredita zabilježen je u II. kvartalu 2020. (92,49%), kada se udio kredita u aktivi povećao na 25,50%, što se također može dovesti u vezu sa snažnim mjerama monetarne politike Eurosustava u kontekstu krize uslijed pandemije koronavirusa. Trend rasta kredita nastavljen je sve do II. kvartala 2021., kada su krediti dosegli relativni udio u aktivi od maksimalnih 28,15% (2.217.338 milijuna eura, što je gotovo četiri puta više kredita nego na početku razdoblja). Nakon III. kvartala 2021. pa sve do kraja promatranog razdoblja krediti se smanjuju pa je stanje kredita u II. kvartalu 2023. iznosilo manje nego na početku (616.694 milijuna eura), s relativnim udjelom u aktivi od samo 8,54%. Najveći pad kredita zabilježen je u IV. kvartalu 2022. (pad od -37,55% u odnosu na prethodni kvartal).

Srednja krivulja s trokutima pokazuje kretanje bilančne pozicije 7.1 u konsolidiranoj bilanci Eurosustava pod nazivom „Vrijednosni papiri koji se drže u svrhu monetarne politike“, a odražava primjenu nestandardnih mjera monetarne politike Eurosustava. Početno stanje kupljenih vrijednosnih papira na dan 01. 01. 2020. iznosilo je 2.632.025 milijuna eura, s relativnim udjelom u aktivi konsolidirane bilance od 56,34%. To znači da više od polovine bilance otpada na tu nestandardnu mjeru monetarne politike Eurosustava. Početno stanje vrijednosnih papira više je od četiri puta veće od početnog stanja danih kredita, što znači da se Eurosustav puno više oslanjao na nestandardne mjere nego na standardne kreditne instrumente. Najveći skok zabilježen je u II. kvartalu 2020. (kvartalno povećanje od 16,22%), što je bitno manje od rasta kredita (kvartalno povećanje od 92,49%),

consolidated balance sheet of the Eurosystem states lending to credit institutions related to monetary policy operations. Approved loans are regularly considered standard instruments of the monetary policy if they are short-term. At the beginning of the observed period the balance of loans was 624,232 million euro, with a share in assets of 13.36%. The largest quarterly rise in loans was recorded in the second quarter of 2020 (92.49%), when the share of loans in assets increased to 25.50%, which can also be related to the strong monetary policy measures of the Eurosystem in the context of the COVID-19 pandemic crisis outset. The trend of increase in lending continued to the second quarter of 2021, when it reached a peak of 28.15% of relative share in total assets (2,217,338 million euro, which is almost four times as high as lending in the beginning of the observed period). After the third quarter of 2021 to the very end of the observed period, lending decreased, so the lending balance in the second quarter of 2023 was less than at the beginning (616,694 million euro), with a relative share in total assets of only 8.54%. Lending bottomed out in the fourth quarter of 2022 (a fall by -37.55% in relation to the previous quarter).

The middle line with triangles shows the movement of the balance position 7.1 in the consolidated balance sheet of the Eurosystem, called "Securities held for monetary policy purposes", and reflects the implementation of non-standard monetary policy measures of the Eurosystem. The initial balance of purchased securities on 01/01/2020 was 2,632,025 million euro, with a relative share in assets of the consolidated balance sheet of 56.34%. This means that this non-standard monetary policy measure of the Eurosystem comprises half of the balance sheet. The initial balance of securities is more than four times higher than the initial balance of approved loans, meaning that the Eurosystem leaned much more on the non-standard measures than the standard lending instruments. The highest leap was recorded in the second quarter of 2020 (a quarterly increase by 16.22%), which is considerably lower

ali je zbog visoke osnovice u apsolutnom iznosu razlika od 441.444 milijuna eura. To je povećanje posljedica uvođenja interventnog pandemijskog programa otkupa vrijednosnih papira (engl. *Pandemic Emergency Purchase Programme*; PEPP) u ožujku 2020. Trend rasta otkupljenih vrijednosnih papira u svrhu monetarne politike Eurosustava nastavio se sve do sredine 2022., kada je stanje na dan 30. 06. 2022. iznosilo maksimalnih 4.963.708 milijuna eura, s relativnim udjelom u aktivi konsolidirane bilance od 56,18%. Tek od III. kvartala 2022. započinje silazni trend, s vrlo blagim kvartalnim smanjenjem po stopama koje u pravilu ne prelaze minus jedan posto pa je na kraju promatranog razdoblja, na dan 30. 06. 2023., stanje vrijednosnih papira iznosilo 4.858.893 milijuna eura. Iako je u apsolutnom iznosu stanje malo palo u odnosu na maksimalnu vrijednost iz II. kvartala 2022. (smanjenje za 104.815 milijuna eura), ipak je relativni udio u aktivi bilance u II. kvartalu 2023. porastao na rekordnih 67,30%. Razlog povećanja relativnog udjela otkupljenih vrijednosnih papira paralelno je smanjenje udjela danih kredita u posljednjim kvartalima promatranog razdoblja, zbog čega je došlo do pada ukupne aktive konsolidirane bilance. Treba naglasiti da krediti koje odobrava Eurosustav u pravilu imaju kratkoročno dospijee (dnevno, tjedno ili tromjesečno, a iznimka je dospijee TLTRO III<sup>6</sup>), za razliku od otkupljenih vrijednosnih papira, koji u pravilu imaju dulje dospijee (maksimalno dospijee državnih vrijednosnica iznosi 30 godina) i drže se do dospijea, tako da nisu moguće nagle promjene portfelja. Stoga je krivulja vrijednosnih papira zadržala stabilno blago silazno kretanje jer od sredine 2022. pa nadalje nema novih kupnji pa se portfelj postupno smanjuje s dospijecom pojedinih vrijednosnih papira.

U nastavku će se dobiveni rezultati analize računovodstvenih podataka iz konsolidirane bilance Eurosustava usporediti i povezati s kretanjem tri makroekonomske varijable. Prva varijabla jest ključna kamatna stopa

than the increase in lending (quarterly increase by 92.49%), but due to a high basis in the absolute amount, the difference was 441,444 million euro. This increase was a consequence of introducing the pandemic emergency purchase programme (PEPP) in March of 2020. The growth trend in purchased securities for the Eurosystem's monetary policy purposes continued until the middle of 2022, when the balance, on 30/06/2022 hit a record high of 4,963,708 million euro, with a relative share of 56.18% in assets of the consolidated balance sheet. It was not until the third quarter of 2022 that a downward trend began, with a very mild quarterly decrease in rates, which did not surpass minus one per cent, so at the end of the observed period, on 30/06/2023 the securities balance was 4,858,893 million euro. Although the balance in the absolute amount fell slightly in relation to the maximum value from the second quarter of 2022 (a decrease by 104,815 million euro), the relative share in the balance sheet assets in the second quarter of 2023 still grew by record 67.30%. The reason for the increase in the relative share of purchased securities is the simultaneous decrease of approved loans in the last quarters of the observed period, leading to a fall in total assets of the consolidated balance sheet. It is noteworthy that loans approved by the Eurosystem generally have a short-term maturity (day, week or trimester, with the exception of the TLTRO III<sup>6</sup> maturity), as opposed to purchased securities that generally have longer maturity (the maximum maturity for state securities is 30 years), and are held up to the maturity date, so sudden changes in the portfolio are not possible. Therefore, the securities line held a stable mild downward trend since there were no new purchases from 2022 onward, leading to a gradual decrease in the portfolio as individual securities mature.

In continuation, the obtained results of the accounting data analysis from the consolidated balance sheet of the Eurosystem will be compared and related to the movements of three macroeconomic variables. The first variable is the key interest rate of the European Central Bank

Europske središnje banke za glavne operacije refinanciranja (MRO), druga je kretanje najšireg monetarnog agregata M3 (ukupna likvidna sredstva europodručja), a posljednja je stopa inflacije u europodručju mjerena harmoniziranim indeksom potrošačkih cijena (HICP).

Europska središnja banka ima tri ključne, odnosno referentne kamatne stope. Prva i najvažnija jest aktivna kamatna stopa za glavne operacije refinanciranja (MRO stopa), kao važan tržišno usmjeren kreditni instrument monetarne politike Eurosustava na otvorenom REPO tržištu. Druga najvažnija referentna stopa ESB-a jest pasivna kamatna stopa na prekonoćne depozite koje poslovne banke u situaciji viška likvidnosti drže kod nacionalnih središnjih banaka (engl. *deposit facility rate*; DFR). Posljednjih godina DFR stopa u pravilu je za 50 baznih bodova niža od MRO stope (primjerice, nakon 2. kolovoza 2023. MRO iznosi 4,25%, a DFR iznosi 3,75%, što je za 0,50% manje). Treća referentna stopa ESB-a obračunava se na marginalnu posudbu od središnje banke (engl. *marginal lending facility rate*; MLFR). Riječ je o jednodnevnom kreditu koji Eurosustav odobrava poslovnoj banci uz odgovarajući kolateral. Ta aktivna stopa Eurosustava obično je za 25 baznih bodova viša od MRO stope.

MRO stopa, kao najznačajnija referentna kamatna stopa Europske središnje banke, tijekom 2020. godine iznosila je nula posto (godinama je iznosila nula posto, još od 16. ožujka 2016.). Prvo povećanje MRO stope zabilježeno je 27. srpnja 2022. (0,50%), a nakon toga je kao rezultat snažnog zaokreta u smjeru monetarne politike Eurosustava uslijedilo ukupno devet uzastopnih povećanja MRO stope, zaključno s posljednjim povećanjem od 2. kolovoza 2023. na visokih 4,25% (European central bank, 2023).

Na Grafikonu 2 jasno je vidljivo da je do zaokreta u monetarnoj politici Eurosustava došlo u III. kvartalu 2022., kada je Upravno vijeće ESB-a donijelo odluku o prvom podizanju MRO stope. Na kraju promatranog razdoblja, u II. kvartalu

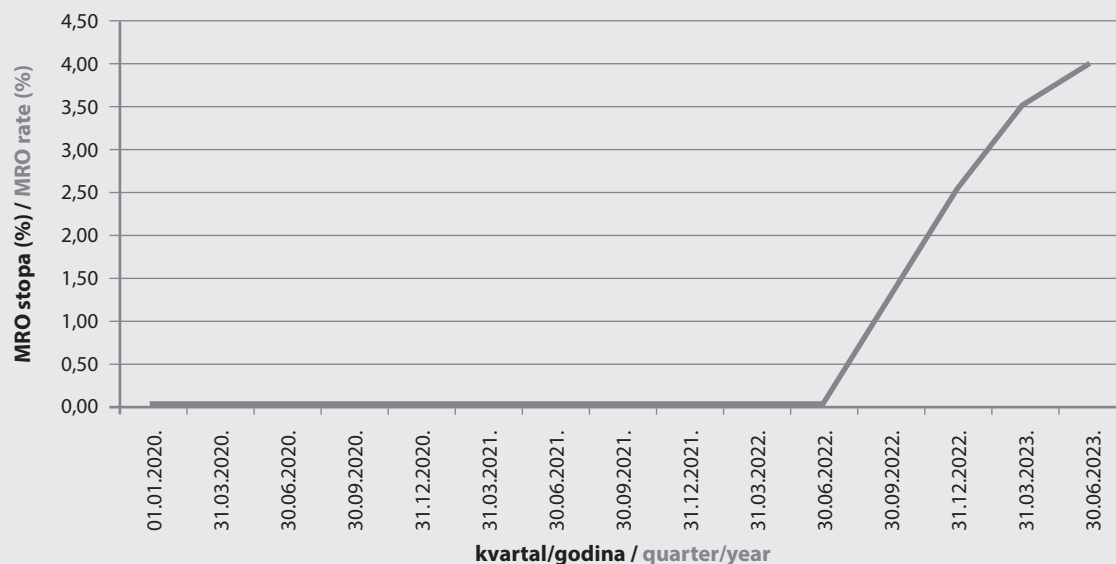
for the main refinancing operations (MRO), the second is the movement of the broadest monetary aggregate M3 (total liquid resources of the euro area), and the last is the inflation rate in the euro area measured by the harmonised index of consumer prices (HICP).

The European Central Bank has three key, i.e., reference interest rates. The first and most important one is the active interest rate for main refinancing operations (MRO rate), as a significant market-oriented lending instrument of the Eurosystem's monetary policy on the open REPO market. The second most important reference rate of the ECB is the passive interest rate on overnight deposits held by commercial banks in cases of excess liquidity with national central banks (deposit facility rate, DFR). In recent years, the DFR has regularly been 50 basis points lower than the MRO rate (for example, after 2 August 2023, the MRO rate has been 4.25% and the DFR 3.75%, which is a difference of 0.50%). The third reference rate of the ECB is calculated on the ECB's marginal lending facility rate (MLFR). It is a case of overnight loans that the Eurosystem approves to a commercial bank along with a corresponding collateral. This active rate of the Eurosystem is usually 25 basis points higher than the MRO rate.

In 2020, the MRO rate, as the most significant interest rate of the European Central Bank was zero per cent (it had been zero per cent for years, from 16 March 2016). The first increase in the MRO rate was recorded on 27 July 2022 (0.50%), after which, as a result of a strong turn in the direction of the Eurosystem's monetary policy, a total of nine consecutive increases in the MRO rate followed, concluding with the last increase on 2 August 2023 at a high 4.25% (European Central Bank, 2023).

Figure 2 clearly indicates that a turn in the Eurosystem monetary policy took place in the third quarter of 2022, when the ECB's Governing Council decided on the first increase of the MRO rate. At the end of the observed period, in the second quarter of 2023, the MRO rate was a high

**GRAFIKON 2. KRETANJE MRO STOPE U RAZDOBLJU 01. 01. 2020. – 30. 06. 2023. PO KVARTALIMA**  
**FIGURE 2. MRO RATE QUARTERLY MOVEMENT IN THE PERIOD FROM 01/01/2020 TO 30/06/2023**



Izvor: izrada autora prema podacima s internetske stranice Europske središnje banke: [https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/key\\_ecb\\_interest\\_rates/html/index.en.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html) (pristupljeno 20. 08. 2023.)

Source: authors, according to data from European Central Bank's web page: [https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates/key\\_ecb\\_interest\\_rates/html/index.en.html](https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html) (retrieved 20/08/2023)

2023., MRO stopa iznosila je visokih 4,00%. To znači da je u samo četiri kvartala došlo do golemog povećanja najvažnije referentne stope ECB-a za 400 postotnih bodova (s 0,00% na 4,00%), čime je znatno poskupjelo zaduživanje poslovnih banaka europa područja kod njihove središnje banke. Prema logici kamatnog transmisijskog kanala monetarne politike, to bi povećanje kamatnih stopa za pristup primarnom novcu u srednjoročnom razdoblju trebalo utjecati na povećanje kamatnih stopa na financijskom tržištu, čime bi novac trebao postati „skuplji“ za poslovni sektor, građanstvo, ali i državu. Porast kamatnih stopa u bankarskom sektoru trebao bi smanjiti potražnju za kreditima i u konačnici smanjiti agregatnu potražnju koja „hrani“ inflaciju. ESB već dulje vrijeme vrlo jasno i transparentno najavljuje kontinuirano podizanje referentne

4.00%. This means that in only four quarters there was a surge in the most important reference rate of the ECB by 400 percentage points (from 0.00% to 4.00%), which made borrowing by the commercial banks of the euro area from their national central banks more expensive. According to the logic of the interest rate based transmission channel, this increase in interest rates for access to primary money for a mid-term period should affect the increase in interest rates in the finance market, making money more expensive for the commercial sector, citizens, but also the country. Increasing interest rates in the banking sector should reduce demand for loans and consequently reduce the aggregate demand that "feeds" inflation. For a longer period of time, the ECB has clearly and transparently been announcing a continuous

kamatne stope da bi putem nestandardne mjere smjernica buduće monetarne politike utjecao na tržišna očekivanja i demotivirao tržišne aktere da bezrazložno podižu cijene, kreirajući beskonačnu inflacijsku spiralu. Pad danih kredita u posljednja četiri kvartala promatranog razdoblja (III. 2022. – II. 2023.), opisan u analizi računovodstvenih podataka iz konsolidirane bilance Eurosustava, može se povezati s naglim podizanjem MRO stope, zbog čega je smanjen interes banaka za korištenje kredita iz primarne emisije.

Najveći dio transmisije monetarne politike Eurosustava ide preko monetarnih financijskih institucija (engl. *monetary financial institutions*; MFI), a to su uz središnje banke, prije svega, kreditne institucije (glavni su predstavnici kreditnih institucija poslovne banke). Za vođenje monetarne politike koristi se konsolidirana bilanca MFI-ja, u čijoj pasivi razlikujemo tri vrste monetarnih agregata. Najlikvidnija novčana sredstva čine uski monetarni agregat M1, srednji monetarni agregat M2 obuhvaća M1 i depozite s rokom dospijeca do 2 godine, a ESB posebnu pozornost posvećuje monetarnom agregatu M3, koji predstavlja najširu definiciju novca ( $M3 = M1 + M2 + \text{repo ugovori}$ , udjeli u novčanim fondovima i dužnički vrijednosni papiri s dospijecom do 2 godine) i stoga je upravo taj najširi monetarni agregat odabran kao druga makroekonomska varijabla. U skladištu statističkih podataka ESB-a, odnosno u statističkom *buletinu*,<sup>7</sup> dostupni su ažurni statistički podaci za promatrano razdoblje 2020. – 2023., koji su korišteni za izradu grafičkog prikaza kretanja monetarnog agregata M3 u apsolutnim iznosima (u milijardama eura) na kraju pojedinog kvartala i kao postotak godišnje promjene (Grafikon 3).

Stupci pokazuju da je novčana masa kontinuirano rasla u razdoblju 01. 01. 2020. – 30.09.2022. te je porasla s početnih 12.985,6 milijardi eura na 16.214,3 milijardi eura na kraju III. kvartala 2022. (lijeva vertikalna os). Tek je u posljednja tri kvartala promijenila trend i započela s blagim padom. Prvo smanjenje zabilježeno je u IV.

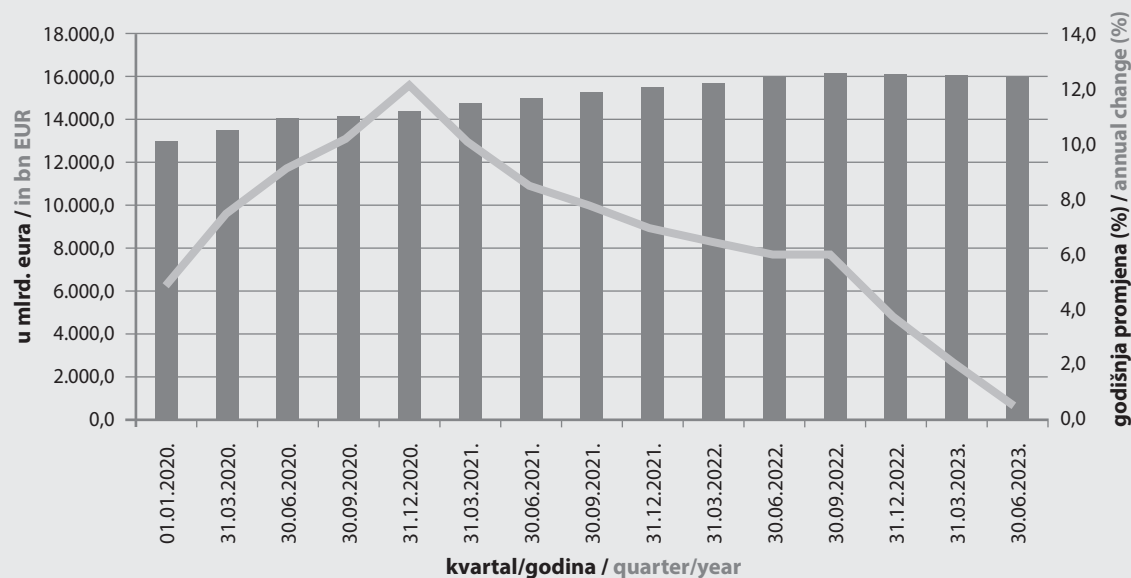
increase in the reference interest rate in order to use the non-standard measure of forward guidance to affect market expectations and demotivate market actors to raise prices without justification, by creating an infinite inflation spiral. The decrease in approved loans in the last four quarters of the observed period (3rd Q of 2022 – 2nd Q of 2023), described in the analysis of accounting data from the consolidated balance sheet of the Eurosystem, can be connected to the sudden increase of the MRO rate, due to which the interest of banks in borrowing from the primary issue was reduced.

The largest part of the transmission mechanism of the Eurosystem's monetary policy is conducted via monetary financial institutions (MFI), which, apart from central banks, are primarily lending institutions (the main representatives of lending institutions are commercial banks). The consolidated balance sheet of MFIs is used for implementing the monetary policy, and its liabilities include three different types of monetary aggregates. The most liquid money resources are the narrow monetary aggregate M1, the intermediate monetary aggregate M2 including M1 and deposits with maturity up to 2 years, and the ECB pays special attention to the monetary aggregate M3, which represents the broadest definition of money ( $M3 = M1 + M2 + \text{repo contracts}$ , shares in monetary funds and debt securities with up to 2 years maturity); therefore, it is why this broadest monetary aggregate was chosen as the second macroeconomic variable. In the statistical data archive of the ECB, i.e., in the statistical bulletin,<sup>7</sup> updated statistical data for the observed period 2020 – 2023 are available, which were used for the graphical overview of the M3 monetary aggregate movement in absolute values (billion euro) at the end of individual quarters and as a percentage of the annual change (Figure 3).

The bars show that the money supply continually grew from 01/01/2020 to 30/09/2022, rising from the initial 12,985.6 billion euro to 16,214.3 billion euro at the end of the third quarter of 2022 (left vertical axis). It only changed its trend in the last three quarters and started to fall mildly.

**GRAFIKON 3. KRETANJE MONETARNOG AGREGATA M3 U RAZDOBLJU 01. 01. 2020. – 30. 06. 2023. PO KVARTALIMA**

**FIGURE 3. M3 MONETARY AGGREGATE QUARTERLY MOVEMENT IN THE PERIOD FROM 01/01/2020 TO 30/06/2023**



Izvor: izrada autora prema podacima s internetske stranice Europske središnje banke: <https://data.ecb.europa.eu/publications/money-credit-and-banking/3031796> (pristupljeno 01. 09. 2023.)

Source: authors, according to data from European Central Bank's web page: <https://data.ecb.europa.eu/publications/money-credit-and-banking/3031796> (retrieved 01/09/2023)

kvartalu 2022. (16.085,5 milijardi eura), a zatim su se dogodila još dva smanjenja te je 30. 06. 2023. monetarni agregat M3 iznosio 16.022,2 milijardi eura. Krivulja grafički prikazuje godišnju promjenu novčane mase izražene u postocima (desna vertikalna os). Krivulja pokazuje brz rast novčane mase u prva četiri kvartala (01. 01. 2020. – 31. 12. 2020.). U prvom kvartalu 2020. rast je bio 7,5%, a u posljednjem kvartalu 2020. dosegno je visokih 12,2%, što predstavlja najveću vrijednost u cijelom promatranom razdoblju. Nakon toga, od prvog kvartala 2021. započeo je kontinuirani pad godišnje promjene novčane mase od početne vrijednosti 10,1% pa sve do konačnih 0,6% u posljednjem kvartalu promatranog

The first decrease was recorded in the fourth quarter of 2022 (16,085.5 billion euro), followed by two more declines, marking the value of the monetary aggregate M3 at 16,022.2 billion euro on 30/06/2023. The line graphically shows the annual change in the money supply expressed in percentages (right vertical axis). The line shows a rapid increase in the first four quarters (01/01/2020 – 31/12/2020). In the first quarter of 2020, there was a rise by 7.5 %, and in the last quarter of 2020 it reached 12.2%, which represents a peak value in the entire observed period. Afterwards, from the first quarter of 2021, we see a continued decrease in the annual change in money supply from the initial 10.1% to the final 0.6% in the last quarter of

razdoblja (II. kvartal 2023.). Monetarni agregat M3 u razdoblju 01. 01.2020. – 30. 06. 2023. ukupno je porastao za 3.036,6 milijardi eura, odnosno za 23,38%, što je velikim dijelom rezultat porasta ukupne pasive Eurosustava u istome razdoblju za 2.548 milijardi eura (za 54,55%).

Ugovor o Europskoj uniji, koji obično prepoznajemo pod nazivom Maastrichtski ugovor, postavio je stabilnost cijena kao glavni cilj ESB-a zbog znanstveno dokazane negativne korelacije između inflacije i stope gospodarskog rasta. Stoga je stopa inflacije iznimno važna makroekonomska monetarna varijabla, jer su svi standardni instrumenti i nestandardne mjere Eurosustava u funkciji njezinog održavanja na razini do 2% kroz srednjoročno razdoblje. Stopa inflacije mjeri se harmoniziranim indeksom potrošačkih cijena (engl. *harmonised index of consumer prices*; HICP). HICP izračunava Eurostat u suradnji s nacionalnim statističkim tijelima, u skladu sa zajedničkom statističkom metodologijom (European central bank, 2009). Grafikon 4 grafički prikazuje kretanje godišnje stope inflacije (HICP) po kvartalima za europodručje u promatranom razdoblju od početka 2020. do sredine 2023.

Vidljivo je da je stopa inflacije tijekom 2020. bila jako niska, pa čak i negativna u IV. kvartalu 2020. (-0,3%). Počela je blago rasti tek u prvom kvartalu 2021. (1,3%) i nastavila sve brže rasti tijekom cijele 2021. pa je njezina vrijednost u posljednjem kvartalu 2021. iznosila visokih 5,0%, što je znatno iznad ciljane vrijednosti ESB-a od 2%. U 2022. je nastavila rasti i dosegla maksimalnih 9,9% u III. kvartalu 2022. Tek u posljednjem kvartalu 2022. došlo je do blagog pada (9,2%). U prvoj polovini 2023. nastavljeno je smanjenje vrijednosti HICP-a. U II. kvartalu 2023. vrijednost HICP-a pala je na 5,5%, što znači da se inflacija vratila na razinu na kojoj je bila krajem 2021. Ako pokušamo povezati kretanje HICP-a s kretanjem bilančnih pozicija u konsolidiranoj bilanci Eurosustava u promatranom razdoblju, koje odražavaju primjenu kreditnih instrumenata i najvažnije nestandardne mjere kupnje vrijednosnih papira, uz uvažavanje

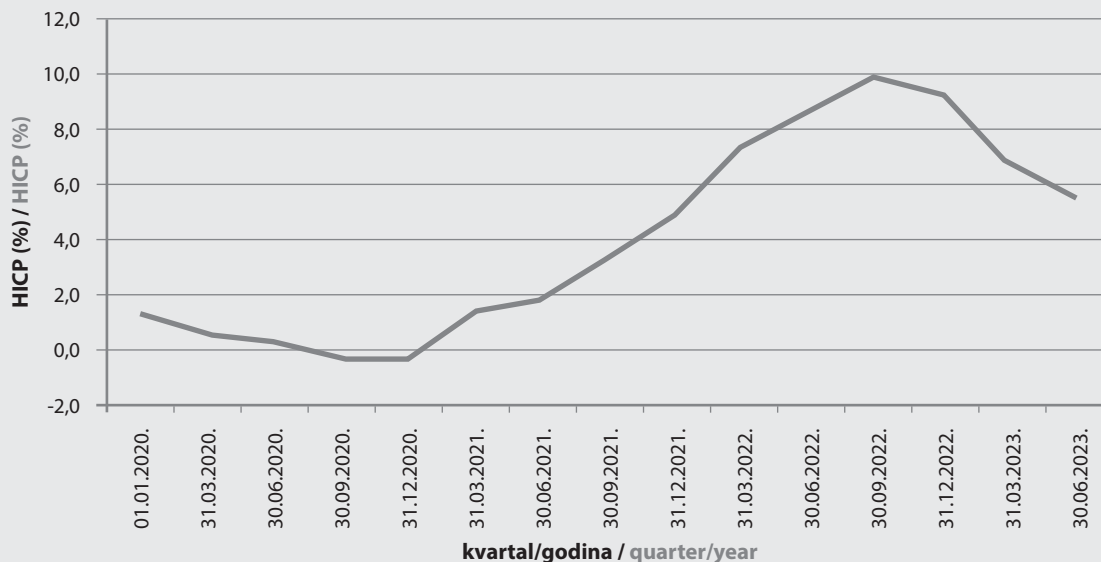
the observed period (2nd quarter of 2023). In the period from 01/01/2020 to 30/06/2023, the M3 monetary aggregate grew by 3,036.6 billion euro in total, i.e., by 23.38%, which is mostly due to the increase in total liabilities of the Eurosystem in the same period by 2,548 billion euro (by 54.55%).

The Treaty on European Union, usually known as the Maastricht Treaty, established price stability as the main objective of the ECB due to the scientifically proven negative correlation between inflation and economic growth rate. Therefore, the inflation rate is a highly significant macroeconomic monetary variable because all standard instruments and non-standard measures of the Eurosystem are targeted at maintaining it at the level of 2% over the medium term. The inflation rate is measured by the harmonised index of consumer prices (HICP). HICP is calculated by Eurostat in collaboration with the national bureaus of statistics in accordance with the statistical methodology (European Central Bank, 2009). Figure 4 graphically shows the quarterly movements of the annual inflation rate (HICP) in the euro area in the observed period from the beginning of 2020 to the middle of 2023.

We can see that the inflation rate was very low during 2020, bottoming out in the negative in the fourth quarter of 2020 (-0.3%). It did not begin to rise until the first quarter of 2021 (1.3%), continuing with a rapid increase throughout 2021, reaching a high 5.0% in the last quarter of 2021, which is significantly above the targeted 2% by the ECB. In 2022 it continued to rise, reaching a peak of 9.9% in the third quarter of 2022. It was not until the last quarter of 2022 that it mildly decreased (9.2%). In the first half of 2023, the HICP value continued with a downward trend. In the second quarter of 2023 it fell to 5.5%, meaning that the inflation came back to the level it was at the end of 2021. If we try to relate the HICP movement with the movement of balance sheet positions in the consolidated balance sheet of the Eurosystem in the observed period, reflecting the implementation of lending instruments and the most important non-standard measure of purchasing securities, taking



GRAFIKON 4. KRETANJE GODIŠNJE STOPE HICP-A U RAZDOBLJU 01. 01. 2020. – 30. 06. 2023. PO KVARTALIMA  
FIGURE 4. HICP ANNUAL RATE QUARTERLY MOVEMENT IN THE PERIOD FROM 01/01/2020 TO 30/06/2023



Izvor: izrada autora prema podacima s internetske stranice Europske središnje banke: <https://data.ecb.europa.eu/data/datasets/ICP/ICP.M.U2.N.000000.4.ANR> (pristupljeno 29. 08. 2023.)

Source: authors, according to data from European Central Bank's web page: <https://data.ecb.europa.eu/data/datasets/ICP/ICP.M.U2.N.000000.4.ANR> (retrieved 29. 08. 2023.)

potrebnog vremenskog pomaka (*time lag*) za punu primjenu pojedine mjere monetarne politike, vidljivo je da je zbog velikog zaokreta prema restriktivnoj monetarnoj politici (smanjenje danih kredita i prestanak neto kupnji vrijednosnih papira) od druge polovine 2022. došlo do željenog trenda smanjenja stope inflacije.

## DISKUSIJA

Rezultati ovog istraživanja pokazuju značajne promjene u provođenju monetarne politike Eurosustava da bi se umanjile posljedice krize uslijed pandemije koronavirusa (od ožujka 2020. do svibnja 2022.). Nisu uočene bitne prilagodbe monetarne politike zbog rusko-ukrajinskog rata

into account the necessary time lag for a complete implementation of a monetary policy measure, we can see that the significant turn toward the restrictive monetary policy (decreasing approved loans and discontinuing the net purchase of securities) led to the desired downward trend in the inflation rate by the second half of 2022.

## DISCUSSION

The results of research show significant changes in implementing monetary policy of the Eurosystem to reduce the consequences of crisis caused by the COVID-19 pandemic (from March 2023 to May 2022). Significant monetary policy adjustments have not been noticed for the Russo-Ukrainian War (since

(od veljače 2022. do danas), ali treba napomenuti da se ta ratna kriza djelomično preklapila s prethodnom pandemijskom krizom u prvom dijelu 2022., odnosno nastavila na nju, i teško ju je jasno razgraničiti i cjelovito sagledati prije završetka ratnog sukoba.

Eurosustav je energično i pravodobno reagirao na pandemijsku krizu i odmah na početku pandemije u ožujku 2020. donesena je odluka o uvođenju rekordnog paketa otkupa vrijednosnih papira (PEPP) od javnog i privatnog sektora, s budžetom od 1.850 milijardi eura (što bi na dan 31. 12. 2020. imalo relativni udio od 26,52% u konsolidiranoj bilanci Eurosustava). Treba naglasiti da PEPP nije nova vrsta monetarne mjere Eurosustava, nego postojeća nestandardna mjera uvedena davne 2009., za vrijeme globalne ekonomske krize, ali je uvođenjem novog programa i budžeta prilagođena okolnostima pandemijske krize (Hartwell, 2023). Neto kupnje trajale su pune dvije godine, sve do kraja ožujka 2022., kada se već počela očekivati odluka WHO-a o kraju pandemije, tako da je ova nestandardna mjera monetarne politike Eurosustava sustavno provedena kroz cijelo vrijeme trajanja pandemije koronavirusa. Iz konsolidirane bilance Eurosustava vidljivo je da je stanje portfelja otkupljenih vrijednosnih papira najviše poraslo u II. kvartalu 2020. i povećavalo se sve do sredine 2022., a onda je Eurosustav prekinuo s novim neto kupnjama, zbog čega se stanje portfelja u posljednja četiri kvartala blago smanjuje, ali i dalje uz iznimno velik relativni udio u konsolidiranoj aktivi Eurosustava (67,30% na dan 30. 06. 2023.). Tako visok postotak ukazuje na golemu važnost te nestandardne mjere Eurosustava, koja na pasivnoj strani konsolidirane bilance snažno djeluje na povećanje primarnog novca. Iz provedene analize kretanja monetarnog agregata M3 vidljivo je da je najveći godišnji rast novčane mase zabilježen upravo u prva četiri kvartala 2020., kada su najintenzivnije provedene kupnje u okviru PEPP programa. S druge strane, monetarni agregat M3 ima najniže stope rasta upravo nakon sredine 2022., kada su zaustavljene

February 2022), but it is noteworthy that the war crisis partially coincided with the previous pandemic crisis in the first half of 2022, i.e., continued upon it, making it difficult to distinguish and comprehensively study it before the end of the war.

The Eurosystem reacted energetically and timely to the pandemic crisis and brought a decision at the very beginning of the pandemic, in March 2020, to introduce a record package of securities purchase (PEPP) from the public and private sector, with a budget of 1,850 billion euro (the relative share of which in the consolidated balance sheet of the Eurosystem would be 26.52% on 31/12/2020). It is noteworthy that the PEPP is not a new type of monetary measure of the Eurosystem, but an existing non-standard measure introduced as early as 2009, at the time of the global economic crisis. However, by introducing a new programme and budget it was adjusted to the circumstances of the pandemic crisis (Hartwell, 2023). Net purchases lasted for two years, up to March 2022, when expectations rose that the WHO will declare the end of the pandemic. This means that this non-standard monetary policy measure of the Eurosystem was systematically implemented throughout the duration of the COVID-19 pandemic. The consolidated balance sheet of the Eurosystem shows that the balance of portfolio of purchased securities grew the most in the second quarter of 2020 and continued to grow until the middle of 2022, when the Eurosystem ceased with all net purchases, due to which the portfolio mildly decreased in the last four quarters, but still with a considerably high relative share in the consolidated assets of the Eurosystem (67.30% on 30/06/2023). Such a high percentage proves the high importance of this non-standard measure by the Eurosystem, which on the side of liabilities of the consolidated balance sheet of the Eurosystem impacts the increase of primary money. The analysis of the movement of the monetary aggregate M3 shows that the highest annual rise of the money supply was recorded in the first four quarters of 2020, when the most intensive purchases within the PEPP were implemented. On the other

nove neto kupnje vrijednosnih papira. Treba naglasiti da monetarni agregat M3 nije vidljiv iz konsolidirane bilance Eurosustava, nego iz konsolidirane bilance MFI-ja, čija je aktiva, primjerice, na dan 31. 12. 2022. iznosila 33.891,8 milijardi eura (4,26 puta veća od konsolidirane bilance Eurosustava), ali u sebi uključuje konsolidiranu bilancu Eurosustava kao najvažniju komponentu kreiranja ukupne novčane mase.

Uz nestandardnu mjeru PEPP, dodatno su u manjoj mjeri korišteni standardni kreditni instrumenti (operacije na otvorenom tržištu i prekonoćni kredit). Druga najsnažnija nestandardna mjera (odmah iza PEPP-a) dugoročne su operacije refinanciranja (LTRO), koje standardno imaju rok dospjeća od 3 mjeseca, ali je najviše korištena nestandardna varijanta TLTRO treće serije, uvedena 2019., s rokom dospjeća od 3 godine, snažno korištena za vrijeme pandemije s namjerom da se banke potaknu na davanje što više kredita poduzećima i građanima. U travnju 2020. uvedena je još jedna varijanta, pod nazivom PELTRO (engl. *Pandemic emergency longer-term refinancing operations*), kao dodatna mjera za pružanje likvidnosti financijskom sustavu europodručja. Stanje svih LTRO-a na dan 31. 12. 2020. u konsolidiranoj bilanci Eurosustava iznosilo je 1.792.574 milijuna eura, što čini 99,9% relativnog udjela ukupno danih kredita. Dani krediti rasli su prvih šest kvartala i sredinom 2021. dosegli maksimalan relativni udio u konsolidiranoj bilanci Eurosustava od 28,15%. Nakon III. kvartala 2021. pa sve do kraja promatranog razdoblja vidi se opadajući trend, ali najveći pad zabilježen je nakon III. kvartala 2022., kada je Upravno vijeće ESB-a donijelo odluku o povećanju referentnih kamatnih stopa. Jasno je vidljiva logična veza između povećanja MRO stope u IV. kvartalu 2022. na 2,50% i kvartalnog smanjenja kreditnog portfelja u istom kvartalu za -37,55%, kao i između povećanja MRO stope u I. i II. kvartalu 2023. na konačnih 4,00% i smanjenja kreditnog portfelja u posljednjem kvartalu promatranog razdoblja za rekordnih -44,06%. Više MRO i MLF stope

hand, the monetary aggregate M3 recorded the slowest growth rate after mid-2022, when all net purchases of securities ceased. It is noteworthy that the monetary aggregate M3 is not shown in the consolidated balance sheet of the Eurosystem, but in the consolidated balance sheet of the MFIs, the assets of which, for example, were 33,891.8 billion euro (4.26 times higher than the consolidated balance sheet of the Eurosystem) on 31/12/2022. However, it does contain the consolidated balance sheet of the Eurosystem as the most important component of generating total money supply.

Along with the non-standard measure PEPP, additional standard lending instruments (open market operations and overnight loans) were used to a lesser extent. The second strongest non-standard measure (immediately following PEPP) were the long-term refinancing operations (LTRO), that as a standard have a 3-month maturity, but the most used was the non-standard variant, the third series TLTRO, introduced in 2019, with a three-year maturity, used extensively during the pandemic aimed at encouraging banks to approve as many loans as possible to companies and citizens. Another variant was introduced in April 2020, called PELTRO (pandemic emergency longer-term refinancing operations), as an additional measure providing liquidity to the financial system of the euro area. The balance of all LTROs on 31/12/2020 in the consolidated balance sheet of the Eurosystem was 1,792,574 million euro, which makes up 99.9% of the relative share in total approved loans. Approved loans grew in the first six quarters, reaching a peak relative share in the consolidated balance sheet of the Eurosystem of 28.15% by mid-2021. After the third quarter of 2021 until the end of the observed period, we see a downward trend, but the most considerable fall was recorded after the third quarter of 2022, when the Governing Council of the ECB decided to increase the reference interest rates. We can clearly see the logical connection between the increase in MRO rate in the fourth quarter of 2022 to 2.50% and the quarterly decrease of the lending portfolio in

poskupljuju zaduživanje bankarskog sektora kod središnjih banaka Eurosustava. Dodatno, bankarski sustav u europodručju ima velik višak likvidnosti kao posljedicu nestandardne mjere otkupa vrijednosnih papira, što smanjuje potrebu za financiranjem kod središnje banke. Stoga je stanje kredita u konsolidiranoj bilanci Eurosustava na dan 30. 06. 2023. palo na najnižu vrijednost u cijelom promatranom razdoblju (616.694 milijuna eura, što čini relativni udio od samo 8,54% aktive Eurosustava). Zbog snažnog pada kreditnog portfelja u posljednja četiri kvartala došlo je do smanjenja aktive konsolidirane bilance Eurosustava, koja je pala za 1.616.292 milijuna eura, odnosno za 18,29%. U istom razdoblju gotovo je zaustavljen rast monetarnog agregata M3 (stopa godišnjeg rasta u II. kvartalu 2023. iznosila je samo 0,6%), što možemo dovesti u vezu ne samo s prestankom neto kupnji vrijednosnih papira, već i sa smanjenim odobravanjem kredita iz primarne emisije.

Rusko-ukrajinski rat započeo je na samom kraju pandemijske krize, kada su još uvijek bile aktivne monetarne mjere pokrenute zbog prethodne krize (PEPP, TLTRO), pa su posljedice tih monetarnih mjera još uvijek bile prisutne, osobito ako uzmemo u obzir vremenski pomak od njihove primjene. Stoga Eurosustav nije uveo neke nove monetarne mjere za rusko-ukrajinski rat pa u tom smislu nije moguće identificirati prilagodbu monetarne politike na sličan način kao u prethodnim kriznim razdobljima. Postavlja se pitanje u kojoj se mjeri ovaj ratni sukob, geografski ograničen na zemlju koja nije članica Europske unije, uopće može smatrati kriznim razdobljem za europodručje, barem prema podacima dostupnima u trenutku pisanja ovog članka.

Zapravo je puno snažniji negativan učinak od rusko-ukrajinskog rata na gospodarstvo europodručja imala probuđena inflacija. Stopa inflacije mjerena HICP-om sve do sredine 2021. bila je niža od ciljanih 2% godišnje, ali u III. kvartalu 2021. počela je rasti i rasla je sve brže do III. kvartala 2022., kada je dosegla zabrinjavajuću vrijednost od 9,9%. Stope rasta

the same quarter by -37.55%, as well as between the increase in the MRO rate in the first and second quarter of 2023 to the final 4.00% and the decrease of the lending portfolio in the last quarter of the observed period by the record -44.06%. The higher MRP and MLF rates increase the cost of borrowing for the banking sector from the central banks of the Eurosystem. Additionally, the banking system in the euro area has a high excess of liquidity as a consequence of the non-standard measure of purchasing securities, which reduces the necessity for financing by the central bank. Because of this, the balance of loans in the consolidated balance sheet of the Eurosystem bottomed out on 30/06/2023 in the entire observed period (at 616,694 million euro, which makes its relative share of only 8.54% in the assets of the Eurosystem). Due to a plunge in the lending portfolio in the last four quarters, there was also a decline in assets in the consolidated balance sheet of the Eurosystem, which decreased by 1,616,292 million euro, i.e., by 18.29%. In the same period, the increase of the monetary aggregate M3 came close to a halt (the annual growth rate in the second quarter of 2023 was only 0.6%), which can be related not only to the end of net purchases of securities, but also with a decline in approved loans from the primary issue.

The Russo-Ukrainian War started at the very end of the pandemic crisis, when the monetary measures initiated due to the previous crisis (PEPP, TLTRO) were still active, so the consequences of those monetary measures were still felt, especially considering the time lag from their implementation. Therefore, the Eurosystem did not introduce new monetary measures for the Russo-Ukrainian War, which makes impossible to identify monetary policy adjustment in a way that is similar during previous periods of crises. The question is to what extent can this war, which is geographically limited to a country that is not a EU member state, be considered a period of crisis for the euro area, at least according to available data at the moment of drafting this paper.

In fact, the awoken inflation had a much stronger severe effect on the economy of the euro area

inflacije krenule su prema dolje tek u posljednja tri kvartala, počevši od IV. kvartala 2022. pa sve do sredine 2023., kada je HICP iznosio još uvijek previsokih 5,5%. Nije slučajno da je do zaokreta u monetarnoj politici ESB-a došlo upravo sredinom 2022. Podsjetimo se da je Upravno vijeće ESB-a prvu odluku o podizanju referentnih kamatnih stopa donijelo upravo s primjenom od 27. srpnja 2022. Ta odluka označila je kraj višegodišnje ekspanzivne monetarne politike i početak restriktivne monetarne politike Eurosustava, po uzoru na američki FED, koji je prvi shvatio da inflacija nije samo prolazna pojava već ozbiljan problem koji zahtijeva radikalne korake (Federal Reserve System, 2023). Dodatan poticaj smanjenju inflacije bili su obustava programa pandemijske kupnje PEPP u ožujku 2022. i prestanak novih neto kupnji vrijednosnih papira po APP programu od sredine 2022. Sve te promjene monetarne politike vrlo su jasno iskomunicirane prema javnosti da bi se davanjem smjernica buduće monetarne politike najavila beskompromisna borba Eurosustava protiv inflacijske nemani koja još uvijek traje. Rat protiv inflacije nikada nije jednostavan ni jeftin, a zbog povećanih kamatnih stopa cijenu plaćaju korporativni sektor, građani, ali i države koje zbog povećanja prinosa sve skuplje refinanciraju dospjeli javni dug.

## ZAKLJUČAK

Eurosustav je od svog osnutka pa sve do globalne ekonomske krize koristio standardne kreditne instrumente za provođenje monetarne politike. Do prve i najznačajnije prilagodbe monetarne politike Eurosustava došlo je 2009., kada je uveden program kupnje vrijednosnih papira, koji je dobio na važnosti u predstojećim kriznim razdobljima, odnosno u postkrizno vrijeme za oporavak gospodarstva europskog područja od recesije. Dodatno su za vrijeme krize europskog javnog duga, odnosno u razdoblju nakon ove krize, uvedene još tri nestandardne mjere monetarne politike (izravne monetarne transakcije, smjernice

than the Russo-Ukrainian War. The inflation rate measured in HICP was lower than the targeted 2% until the middle of 2021, but in the third quarter of 2021 it started rising with a rapid momentum until the third quarter of 2022, reaching a concerning value of 9.9%. The inflation growth rates started moving downward only in the last three quarters, starting with the fourth quarter of 2022 until the middle of 2023, when the HICP was still at the excessively high 5.5%. It was not random that the turn in the monetary policy of the ECB took place in mid-2022. As a reminder, the Governing Council of the ECB brought the first decision on raising reference interest rates with entry into force on 27 July 2022. This decision marked the end of the several-year-long expansive monetary policy and the beginning of a restrictive monetary policy of the Eurosystem, modelled by the American FED, which was the first to understand that inflation is not a temporary phenomenon, but a serious issue demanding radical steps (Federal Reserve System, 2023). Additional stimuli to reducing inflation were the discontinuation of the pandemic emergency purchase programme (PEPP) in March of 2022 and the end to all net purchases of securities through the APP programme from the middle of 2022. All these changes in the monetary policy were clearly communicated to the public, so that the forward guidance for monetary policy would announce the uncompromising battle of the Eurosystem against the inflation fiend that has yet to be conquered. The fight against inflation has never been easy or cheap, and, due to increased interest rates, the price is paid by the corporate sector, citizens, and states because higher yields have been making refinancing public debt more expensive.

## CONCLUSION

From its foundation to the onset of the global economic crisis, the Eurosystem used standard lending instruments to implement monetary policy. The first and most significant adjustment of the Eurosystem's monetary policy took place in 2019,

buduće monetarne politike i operacije ciljanog dugoročnog refinanciranja).

Nestandardne mjere snažno su korištene za vrijeme krize zbog pandemije koronavirusa. Nije bilo potrebe za uvođenjem novih vrsta nestandardnih mjera, ali su pokrenuti novi programi ili reaktivirane nove tranše postojećih programa (PEPP, TLTRO & PLTRO). U posljednjoj krizi, zbog rusko-ukrajinskog rata, nije došlo do primjene novih mjera ni programa, jer je u prvi plan izbila borba protiv probuđene inflacije, koja još uvijek traje. Rezultati istraživanja potvrđuju tezu da Eurosustav prilagođava svoju monetarnu politiku u krizi, odnosno da je u kriznim vremenima povećan značaj europske monetarne politike u ostvarivanju monetarne, ali i šire makroekonomske stabilnosti. Ipak, s obzirom na to da su u ovome istraživanju analizirane samo dvije odabrane bilančne pozicije konsolidirane bilance Eurosustava, predlaže se u budućim istraživanjima proširiti obuhvat. Dodatno, tek po završetku ratne krize moći će se dati konačnu ocjenu njezina utjecaja na monetarnu politiku Eurosustava.

when the programme for purchasing securities was introduced, which became significant for economic recovery from recession in the euro area in the following periods of crises, i.e., in the post-crisis periods. Additionally, in the period of the European sovereign debt crisis, i.e., in the period following this crisis, three additional non-standard monetary policy measures (outright monetary transactions, forward guidance, and targeted long-term refinancing operations) were introduced.

The non-standard measures were extensively used in the period of COVID-19 pandemic crisis. There was no need to introduce new types of non-standard measures, but new programmes or reactivated new tranches of existing programmes (PEPP, TLTRO & PLTRO) were initiated. During the last crisis, the Russo-Ukrainian War, we have not seen implementations of new measures or programmes, because of the urgent fight against inflation, which is still going on. The research results confirm the thesis that the Eurosystem adjusts its monetary policy in times of crises, i.e., that in those times there is an increased significance of the European monetary policy for achieving the monetary, but also the wider macroeconomic stability. Nevertheless, as this research study analysed only two selected balance sheet positions in the consolidated balance sheet of the Eurosystem, we recommend future researchers to widen the scope of analysis. In addition, it will not be until the end of the war crisis that a final evaluation of its impact on the monetary policy of the Eurosystem can be determined.

## BILJEŠKE

- <sup>1</sup> Hrvatska narodna banka 1. siječnja 2023. postala je dvadeseta članica Eurosustava.
- <sup>2</sup> S obzirom na to da je autor zaposlenik Hrvatske narodne banke, treba napomenuti da su stajališta iznesena u oville članku osobna i da ne odražavaju nužno stajališta Banke.
- <sup>3</sup> Konsolidirana bilanca Eurosustava obuhvaća objedinjene bilančne pozicije Europske središnje banke i svih nacionalnih središnjih banaka država članica europskog područja kao da je jedan poslovni subjekt.
- <sup>4</sup> Tjedni financijski izvještaji Eurosustava: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html>
- <sup>5</sup> Godišnja konsolidirana bilanca Eurosustava: <https://www.ecb.europa.eu/pub/annual/balance/html/index.en.html>
- <sup>6</sup> TLTRO (engl. *targeted longer-term refinancing operations*) predstavlja poseban kreditni instrument Eurosustava, kojim se potiče poslovne banke na odobravanje više kredita poduzećima i potrošačima. TLTRO III je posljednja serija, koja je započela 2019. s dospeljećem od tri godine, a služila je kao jedna od ključnih monetarnih mjera Eurosustava u borbi s posljedicama pandemije koronavirusa na europsko gospodarstvo.
- <sup>7</sup> Statistički *buletin* (engl. *statistical bulletin*): <https://sdw.ecb.europa.eu/reports.do?node=1000004045>

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- <sup>1</sup> Croatian National Bank became the 20th member of the Eurosystem on 1st January 2023
- <sup>2</sup> Considering that the author of this paper is an employee of the Croatian National Bank, it is important to note that the views given in this paper are personal and do not necessarily reflect the views of the Bank.
- <sup>3</sup> The consolidated balance sheet of the Eurosystem comprises collective balance sheet positions of the European Central Bank and all national central banks of the euro area member states as one business entity.
- <sup>4</sup> Eurosystem weekly financial statements: <https://www.ecb.europa.eu/press/pr/wfs/html/index.en.html>
- <sup>5</sup> Annual consolidated balance sheet of the Eurosystem: <https://www.ecb.europa.eu/pub/annual/balance/html/index.en.html>
- <sup>6</sup> TLTRO (targeted longer-term refinancing operations) represents a special lending instrument of the Eurosystem, encouraging commercial banks to approve more loans to companies and consumers. TLTRO III is the last in the series, which started in 2019, with a three-year maturity, serving as one of the key monetary measures of the Eurosystem aimed at fighting the impact of the COVID-19 pandemics on the European economy.
- <sup>7</sup> Statistical bulletin: <https://sdw.ecb.europa.eu/reports.do?node=1000004045>

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