

# The COVID-19 Pandemic Crisis and the Use of Quantitative Easing in Monetary Policy: An Evaluation with Examples of Developed Countries

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**Abstract:** This article researched the effect of the unconventional monetary policy tool of quantitative easing (QE), commonly used by the world's leading central banks (Federal Reserve and European Central Bank) after the COVID-19 pandemic crisis, on financial and real markets. The purpose of QE is to inject money into the economy with the aim of stimulating nominal spending. This effect occurs through expectations and the use of credit. The article presents experiences based on data from the Federal Reserve and European Central Bank. Data show that the QE policy applied during the COVID-19 pandemic in the USA and European region had significant effects on total demand, inflation and GDP.

**Key Words:** monetary policy, quantitative easing (QE), COVID-19.

## 1. INTRODUCTION

The COVID-19 pandemic crisis and then the Ukraine-Russian War caused great problems with the global supply chain and negatively impacted economic activities in a variety of sectors led by energy and food, and including the tourism, housing and financial sectors. The delays in production in China caused severe disruptions in global supply chains and this led to decreases in production by firms importing raw material and intermediate products from China. The limited access, or even restrictions, between countries further slowed global economic activity. Most importantly, panic among consumers and firms disrupted existing consumer molds and created abnormality in the market (McKibbin and Fernando, 2020:2). For the first time since the Great Depression in 1929, both developed economies and developing economies entered recession (Gopinath, 2020). Governments and central banks took financial, monetary and financial market measures to intervene against the pandemic and later economic crisis and to support households and businesses impacted by the crisis.

The low interest environment in developed economies led monetary authorities to trust unconventional monetary tools like quantitative easing (QE) more during the COVID-19 crisis (Baumeister and Benati, 2013; Borio and Zabai, 2016; Borio et al., 2016; Bernanke, 2020). In periods of crisis, the efficacy of the monetary transfer mechanism reduces and it becomes difficult to achieve the desired targets using short-term policy interest rates, especially in countries with low interest rates (Bernanke, 2020: 46). For this reason, in economic crisis periods, countries which cannot further lower nominal interest rates, already at zero levels, began to use unconventional monetary policy tools.

The aim of this study was to investigate the effects on financial and real markets of the QE tool, dominantly used by the world's leading central banks after the COVID-19 pandemic crisis, by investigating the USA and Eurozone. The first section of the article deals with the theoretical framework of QE, and the second section investigates examples of countries implementing this unconventional monetary policy tool. The final section gives the conclusions.

## 2. THEORETICAL FRAMEWORK

### 2.1. Quantitative Easing (QE)

QE is a unconventional monetary policy tool based on central banks making large-scale asset purchases and expanding the central bank balance sheet. In traditional monetary policy practice, central banks use monetary policy tools to change the price of money. This is generally done by changing the borrowing rate of banks. However, with QE central banks generally focus on affecting the amount of money; banks and other institutions buy public and private sector financial assets and print money in return. The goal is to increase nominal spending and provide additional liquidity to the economy. As new central bank money is paid for the assets bought, banks increase the amount of central bank money on hand, while at the same time increasing the amount of deposits held by firms and households. This additional money is transmitted to the markets through a range of channels to later increase spending.

When a central bank buys an asset from a bank, it leads to an expansion in monetary demand by creating an additional fund in the reserve account of that bank. When a central bank buys an asset from a non-banking company, the price of the asset is paid through the seller's bank. In other words, the

central bank invests money in the reserve account of the seller's bank. Asset purchases from banks increase the monetary base (or "narrow money"), while purchases outside of banks increase both the monetary base and "broad money". The increase in the amount of broad money is an important part of the transmission mechanism for quantitative easing (Berry et al., 2009:91). Through the use of QE, the desire is to increase consumer and investment spending. Of course, this increase in spending causes an increase in the general level of prices while also increasing economic activity levels. However, the inflationist effect created by central banks printing money against securities such as bonds and bills is less compared to printing money gratuitously.

## 2.2. Quantitative Easing Transmission Channels

One of the most important transmission channels for QE is the "portfolio effect" emerging linked to the change in asset prices. Another channel is the "bank credit channel" emerging due to the increase created in bank reserves and deposits by central bank asset purchases. The third important channel is the "signal channel" representing public expectations (Berry et al., 2009:92-95). This expresses the expectation of the public that interest will remain at low levels even after economic recovery. However, as interest rates will continue to be kept low until the economy has recovered to sufficient levels, the signal channel has greater effect on interest rates in the medium term.

### *Asset prices and portfolio effect*

The basic indicator for QE use is asset purchases by the central bank. Asset purchases expand the balance sheet of the central bank. Asset purchases increase asset prices due to increased demand for asset purchases as they are financed from central bank money. Then, higher asset prices lower the cost of borrowing for households and businesses as they cause lower returns. The creation of additional money in the market by the QE tool and the linked increase in the amount of wealth causes increases in consumer and investment spending.

Asset purchases by central banks affect the prices of other assets. A company selling assets to the central bank will use this excess money to buy other assets and return their portfolio to the desired composition. As the prices of assets bought by the central bank increases, the returns reduce compared to other assets. Households and companies searching for higher returns are thus encouraged to transition to other asset types. This increases the prices of other assets. This mechanism is known as the "portfolio balance effect." A

company selling assets to the central bank changes their portfolio balance in the first stage. In an attempt to rebalance this effect on the portfolio, they must buy other assets with the money obtained from the asset sales. In this situation, asset prices will increase.

Asset purchases affect the government bond yields. Announcements related to asset purchases by central banks provide further evidence of how this type of purchase will affect asset prices. Kohn (2009) emphasized that announcements about Federal Reserve purchases of mortgage-backed securities and Treasury bills lowered mortgage and other long-term rates in the USA by notable amounts.

### *Finance cost of companies/Company and household expenses*

Purchase of private sector assets by central banks makes it easier for companies to obtain financing more easily and cheaply. The general effect created on spending by asset purchases varies depending on how households and companies respond to changes in cash on hand and asset prices. The degree of impact will be linked to the use of this surplus money to reduce debt or increase spending. Companies faced with lower borrowing costs will probably spend more on investment projects. The impact of the increase in asset prices on household spending will be linked to whether this increase is perceived as being permanent or not. If households expect asset prices to remain high, it is probable that this effect on spending will be stronger. To date several studies (Andrade et al., 2016; Altavilla et al., 2014; Krishnamurthy et al., 2011) have shown a significant connection between the amounts of money created by QE with GDP and interest rates.

### *Bank credit and amount effects*

Asset purchases increase the reserve balance of banks held in central banks. When banks buy non-bank assets, they gain both new reserves and corresponding new customer deposits. A higher liquid asset level encourages banks to give more new credit compared to normal. The effect of asset purchases on bank reserves is linked to the general liquidity positions of the banks and changes in the balance sheet. It is probable the volume of money in the economy will increase further through the money multiplier effect. However, the degree of the increase in monetary volume is linked to increasing bank credit. Even if banks do not increase their credit, the monetary volume will increase due to the deposits created by central bank asset purchases. If banks increase credit amounts, this effect will be larger.

### Inflation and Expectations

One of the channels with fastest movement direction is the inflation and expectations channel. It is a known reality that increases in monetary amounts will eventually cause an increase in prices. However, there is significant uncertainty about the speed at which prices will reflect monetary injections. Central banks showing they will make efforts to do what is necessary to meet inflation targets is very important to create inflation expectations in the future. Though this fixes nominal interest rates to very low levels, it means that real interest rates will be held at even lower levels. This will encourage more spending.

### 3. QUANTITATIVE EASING AND EXAMPLES FROM DEVELOPED COUNTRIES

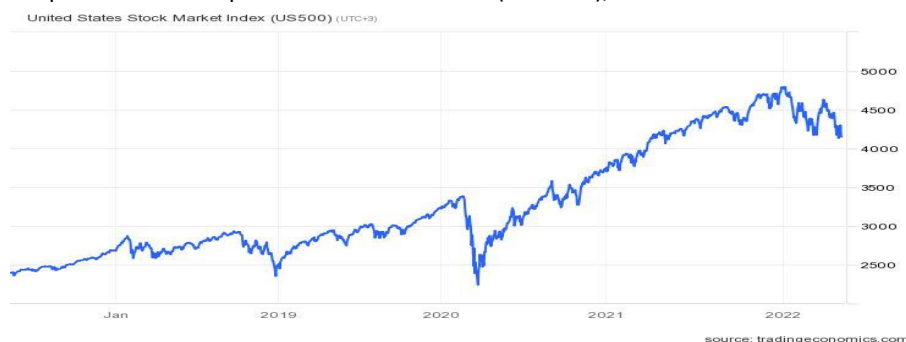
QE was implemented in the years before the COVID-19 pandemic. This monetary policy tool was used from 1999-2006 to stimulate the economy and achieve the desired inflation level in Japan, which was experiencing a chronic deflation problem. The Japanese central bank (BOJ) bought Japanese treasury bills, government bonds and other financial assets from banks to create excess liquidity in banks as the inter-bank interest rates were at zero level. Another central bank using QE is the Federal Reserve Bank (FED). The FED began implementing QE in 3 different stages during the global economic crisis in 2008 and had 4.5 trillion dollars in stock of securities at the end of October 2014. Similarly, the European Central Bank (ECB) used the QE tool to lessen the outcomes of the great global economic crisis. The ECB used traditional tools and precautions to support economic growth and achieve the targeted 2% inflation rate until the end of 2014; however, as the inflation target could not be met, they began to use the QE instrument at the beginning of 2015 (<https://www.ecb.europa.eu/ecb>).

There is consensus that QE is an element that prevents greater collapse of the real and financial markets (Chen et al., 2016: 62). As developed

countries entered the COVID-19 pandemic crisis with low interest rates, the second global QE wave began. Governments faced with the destructive effects on the economy of COVID-19 applied monetary and financial policies. The monetary policies implemented in this process were similar to the policies used in the 2008 crisis. Central banks lowered interest rates in the first stage (Benmelech et al., 2020). Additionally, several central banks used unconventional tools and precautions like QE and "helicopter money" to facilitate the conditions for providing loans to households and the economy. Central banks in USA, Europe and Japan completed corporate bonds and mortgage-backed asset purchases with the aim of preventing market collapse and easing access to credit in credit markets. These practices caused large amounts of expansion in the balance of central banks. In March 2020, the European Central Bank (ECB) first announced it would implement a 120 billion Euro and then 750 billion Euro Pandemic Emergency Purchase Program. The FED announced it would purchase 500 billion dollars of bonds and 200 billion dollars of mortgage-backed securities in March (Haas et al., 2020:360).

In all countries around the world, the impacts of the COVID-19 pandemic were first observed in stock market movements. The home restrictions experienced during the pandemic caused problems to be experienced in global supply chains, reductions in spending and investment levels, and increased unemployment rates and the final effect of all these developments was reflected in a fall in GDP figures. The coronavirus crisis and linked workplace closures, event cancellations and work-from-home policies in the USA triggered a deep economic recession. When the USA markets are examined, the COVID-19 pandemic crisis caused significant falls in stock markets (Graph 1). The sharp narrowing of the economy and deep uncertainty caused by the virus increased the demand for the most liquid assets.

Graph 1. Trend in capital markets in the USA (S&P 500), 2019-2022

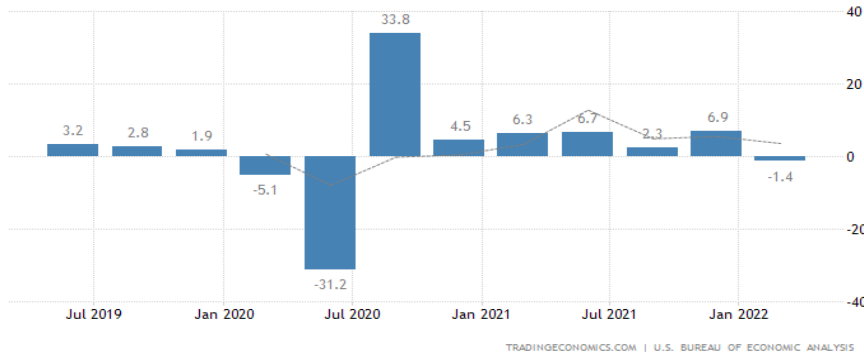


Reference: <https://tradingeconomics.com/united-states/stock-market> (19.5.2022)

Due to additional precautions taken by the FED about the liquidity crunch due to the pandemic, from the end of March 2020, liquidity demands on large banks in the USA reached previously unseen dimensions. Companies applied to banks to receive cash and credit. Banks could meet these demands without reaching financial limitations. When

compared to the 2008 crisis, banks did not have a liquidity problem. Due to full time liquidity requests from both the central banks and investment owners, these demands could be met (Li et al., 2020: 4). These precautions were positively reflected in US stock markets.

Graph 2. GDP growth rate in USA (2019-2022)



Reference: <https://tradingeconomics.com/united-states/gdp-growth> (19.05.2022).

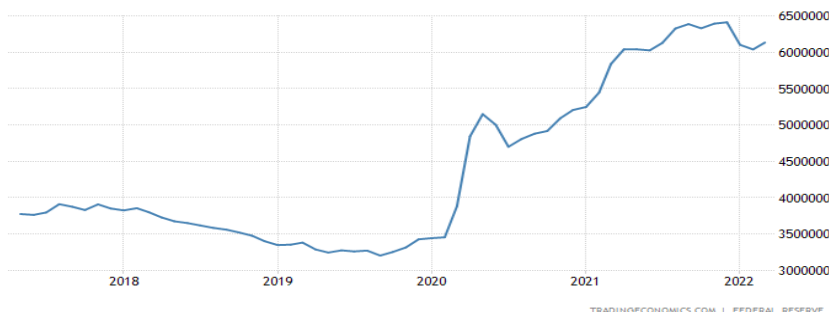
In Graph 1, after the first quarter of 2020, the USA stock markets (S&P 500), negatively affected at the beginning of the pandemic, recovered to a significant degree and an

increase is observed. To prevent large collapses in the markets, FED pumped money into the market and completed asset purchases (EQ policy) and this was effective to a great extent in stimulating the stock market.

With the increase in liquidity power in the market with the aim of preventing market collapse, the FED created economic growth effects. At the beginning of the COVID-19 pandemic, a falling trend in the USA economy may be followed in some GDP trends (Graph 2). The USA economy experienced a 4.8% fall

in the first quarter of 2020, which ended the longest period of economic growth. Personal consumption in this period experienced the greatest fall since 1980 and investments reduced fourfold in this period. Additionally, while government spending increased, there was a sharp reduction in exports and imports. However, the expansionary economic policies implemented in the USA economy had immediate effects; the economy reduced by -31.2% in 2020, but grew by 33.8% in the final quarter of 2020 and strongly recovered. The continuation of positive growth of the economy until the beginning of 2022 may be linked to the continued asset purchases by the FED (see Graph 4).

Graph 3. Amount of currency in circulation in the USA (M0) (2018-2022)



Reference: <https://tradingeconomics.com/united-states/money-supply-M0> (19.05.2022)

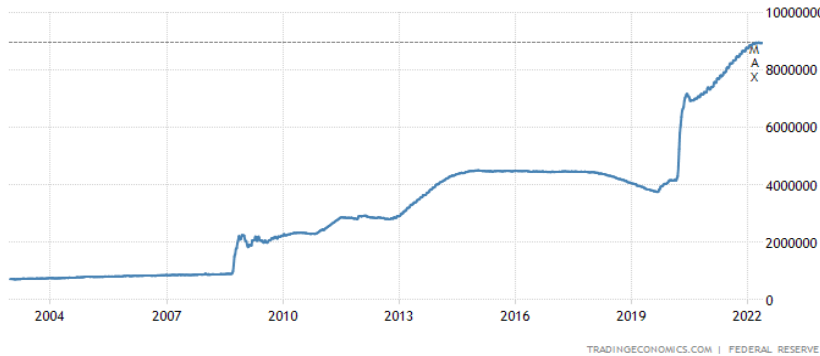
In the first quarter of 2022, the USA economy once again appeared to be faced with narrowing. Two factors may be said to affect this. The first is that the FED signaled that they would reduce asset

purchases, shrink their balance sheet and increase federal interest rates due to increasing inflation rates in the

USA economy. The second is problems experienced with global supply chains due to the Russia-Ukraine War beginning on 24 February 2022 and then

China's closure of Shanghai which increased the disruption to these supply chains.

Graph 4. FED balance (2004-2022)



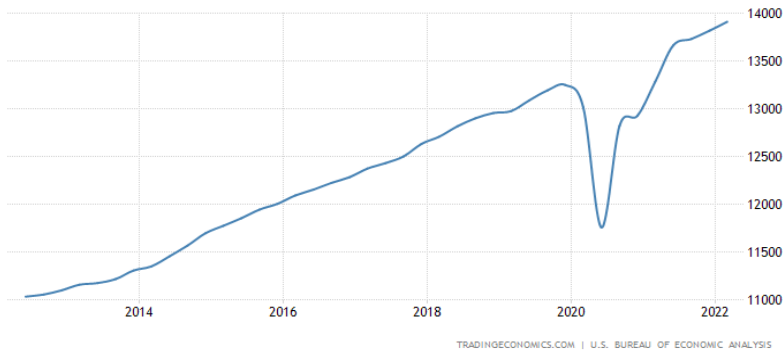
Reference: <https://tradingeconomics.com/united-states/central-bank-balance-sheet> (19.05.2022)

During the pandemic crisis, QE monetary policies were commonly used in the USA. There were two important indicators at the basis of QE implementation. The first was the increase

in monetary amounts in the economy and the second was expansion of the central bank balance sheet. In Graph 3, the increase levels on a monetary basis with monetary expansion during the

pandemic by FED can be seen. The QE implementation had an important share in the increase in liquidity levels in the economy. In fact, FED performed large-scale asset purchases linked to the COVID-19 pandemic after 2019 and expanded its balance. As seen in Graph 4, the FED balance was 4 trillion dollars before the pandemic, while it rose to 8 trillion dollars by the beginning of 2022 after the pandemic crisis.

Graph 5. Consumer spending in the USA (2014-2022)

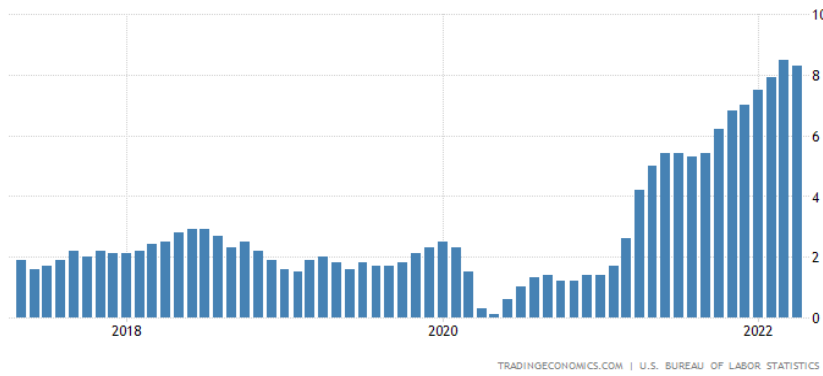


Reference: <https://tradingeconomics.com/united-states/consumer-spending> (19.05.2022)

The FED also created large amounts of "helicopter money." The Treasury Secretary stated that Americans needed cash money and recommended giving each American a cheque for 1000 dollars (Bloomberg, 2020). On the fiscal policy side, many precautions were taken like delaying debt repayments by 90 days. Thus,

fiscal authorities had to borrow to make up for the shortfall caused by directly giving money to citizens (helicopter money) and monetary authorities pumped liquidity into the system by buying bonds from them.

Graph 6. Inflation increase rate in the USA economy (2018-2022)



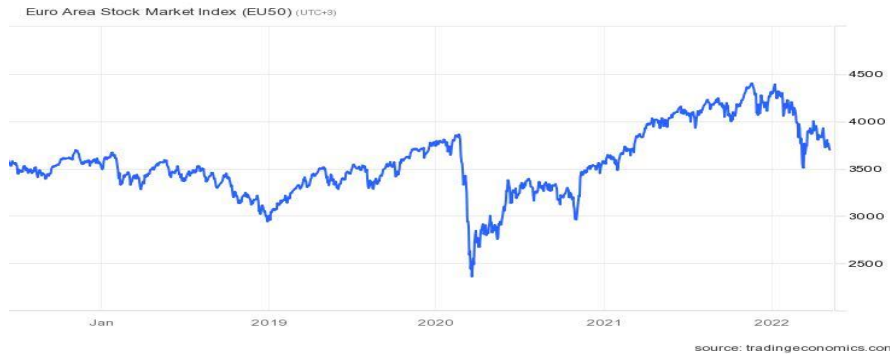
Reference: <https://tradingeconomics.com/united-states/inflation-cpi> (19.05.2022)

The efficacy of one of the transmission channels for QE of spending and bank credit channels may be assessed by examining consumer spending for example and/or consumer credit. In the first quarter of 2020 in the USA, consumer spending displayed a large fall, then rapidly increased after this period and in fact appeared to rise above the value from before the pandemic (Graph 5). For this reason, both the increased asset purchases by the FED

and the “helicopter money” distributed to the public caused an abundance of liquidity in the market and increased spending.

Though the FED began to reduce the speed of asset purchases, this did not prevent a rapid increase in

Graph 7. Euro Stoxx 50 Index (2019-2022)



Reference: <https://tradingeconomics.com/euro-area/stock-market> (19.05.2022)

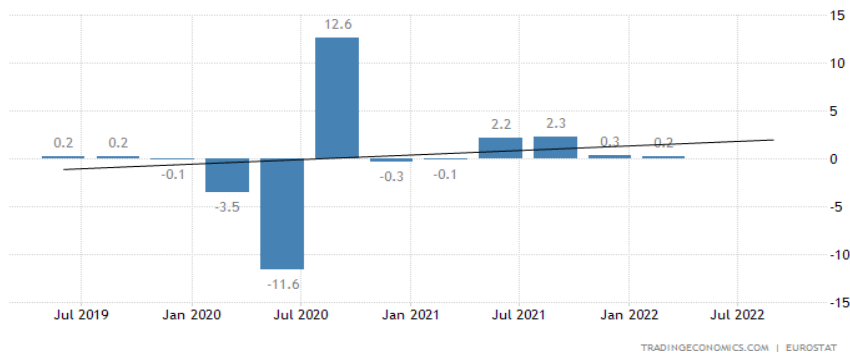
The Eurozone economy appeared to have a -3.5% fall in the first quarter of 2020, which reached -11.6% in later times when assessed according to GDP developments (Graph 8). This comprises the largest fall in GDP since 1995.

inflation rates in the USA economy. It is inevitable that implementation of financial policies to stimulate total demand will increase inflation rates in the end. In fact, on Graph 6, the inflation rates in the USA appear to rapidly increase during the COVID-19 pandemic.

Just as in the USA economy, economies in the Eurozone were greatly affected by the economic crisis caused by the COVID-19 pandemic. When European financial markets

are examined, the Euro Stoxx 50 appeared to experience a hard fall at the start of 2020 (Graph 7).

Graph 8. GDP growth rate in the Eurozone (2019-2022)



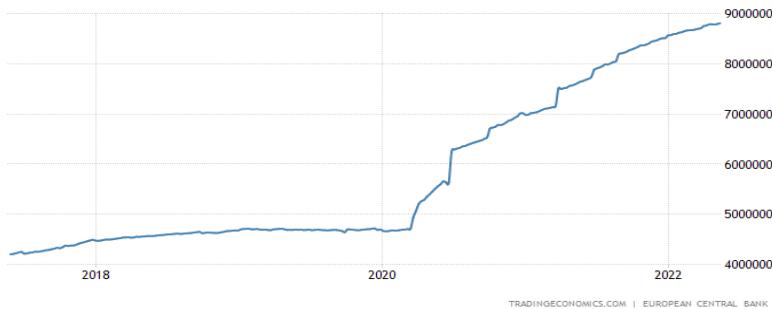
Reference: <https://tradingeconomics.com/euro-area/gdp-growth> (19.05.2022)

After these developments, economic growth increased again and reached levels of 12.6% as a result of the implemented expansionist economic policies. However, at the beginning of 2022, economic growth in the Eurozone significantly fell. The effects of problems created by the Russia-Ukraine War were reflected in growth figures for the Eurozone.

of France stagnated and Italy reduced by 0.2%. The end of the war in Ukraine appearing more distant and the continued upward pressure on commodity prices caused renewed supply disruptions and increasing uncertainty. As a result, the economic outlook for the Eurozone is under pressure (<https://tradingeconomics.com/euro-area/gdp-growth>).

Among the largest economies, Germany grew by 0.2% and Spain grew by 0.3%, while the GDP

Graph 9. Central Bank Balance in the Eurozone (2018-2022)

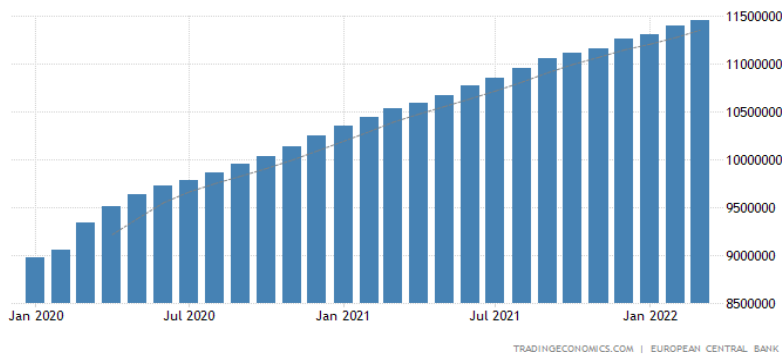


Reference: <https://tradingeconomics.com/euro-area/central-bank-balance-sheet> (19.05.2022)

In the Eurozone, the expansionist effect of the QE policy on central bank balances can be seen in Graph 9. During the COVID-19 pandemic, the amount of money in circulation in the Eurozone

increased in parallel to central bank asset purchases, and expansion was observed in M0 money supply (Graph 10).

Graph 10. Amount of currency in circulation in the Eurozone (M0) (2020-2022)

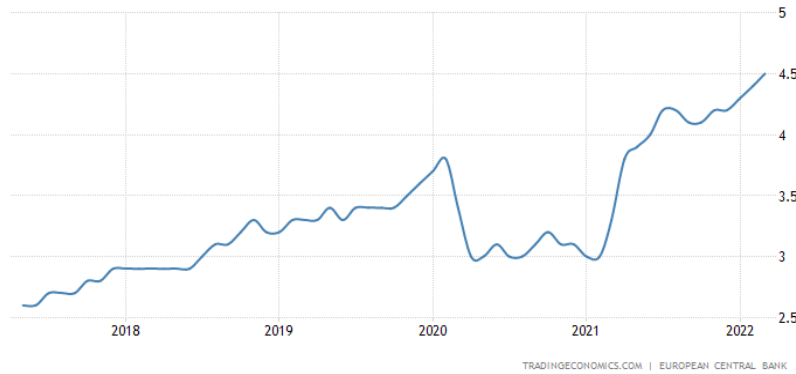


Reference: <https://tradingeconomics.com/euro-area/money-supply> (19.05.2022)

Growth of money supply occurred as a result of European Investment Bank activities providing 200 billion Euro to the European economy, in addition to monetary policy tools applied by the ECB. To reduce the negative effect caused by the COVID-19 pandemic on companies, a

“protective shield” was created for European companies with the aid of a guarantee fund and in the first stage, an amount of 25 billion Euro was approved. This money was given to small and medium scale businesses.

Graph 11. Consumer credit in the Eurozone (2018-2022)

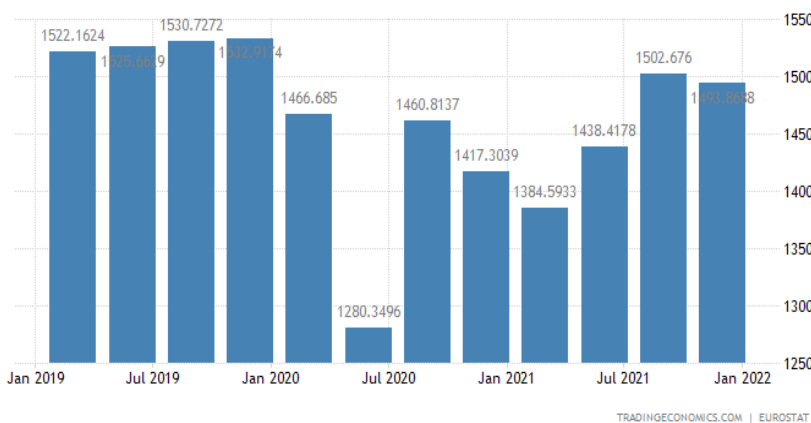


Reference: <https://tradingeconomics.com/euro-area/loan-growth> (19.05.2022)

Bank credit in the Eurozone fell at the beginning of 2020 when the pandemic began, with a rapid increase occurring from 2021 while the pandemic continued. The expansionist effects created by the QE monetary policy in the Eurozone appeared to increase bank consumer credit (Graph 11). Similarly, in parallel to the increase in consumer credit, consumer spending increased (Graph 12). Apart from consumer credit, “helicopter money” providing direct income support to households affected the increase in consumer spending.

Due to the curfew restrictions linked to individual occupation during the COVID-19 pandemic, the basic inequality in protection from sudden income losses was displayed openly. For example, freelance workers, artists and small business owners were less protected by newly-founded state guarantees for unemployment programs and companies, and generally were the sector most affected by sudden income losses. At this point, helicopter money actually contributed to filling the gaps in targeted income support from national governments and social policies (Jourdan, 2020:9-10).

Graph 12. Consumer spending in the Eurozone (2019-2022)



Reference: <https://tradingeconomics.com/euro-area/consumer-spending> (19.05.2022)

The increase in consumer credit and spending stimulated total demand and the first effect of this

was observed as increasing inflation rates (Graph 13).





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